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Generativity is a Core Value of the ESJ: A Decade of Growth

Erik Erikson (1902-1994) was one of the great psychologists of the 20th century[1]. He explored the nature of personal human identity. Originally named Erik Homberger after his adoptive father, Dr. Theodore Homberger, he re-imagined his identity and re-named himself Erik Erikson (literally Erik son of Erik). Ironically, he rejected his adoptive father's wish to become a physician, never obtained a college degree, pursued independent studies under Anna Freud, and then taught at Harvard Medical School after emigrating from Germany to the United States. Erickson visualized human psychosocial development as eight successive life-cycle challenges. Each challenge was framed as a struggle between two outcomes, one desirable and one undesirable. The first two early development challenges were 'trust' versus 'mistrust' followed by 'autonomy' versus 'shame.' Importantly, he held that we face the challenge of **generativity** versus **stagnation in middle life**. This challenge concerns the desire to give back to society and leave a mark on the world. It is about the transition from acquiring and accumulating to providing and mentoring.

Founded in 2010, the European Scientific Journal is just reaching young adulthood. Nonetheless, **generativity** is one of our core values. As a Journal, we reject stagnation and continue to evolve to meet the needs of our contributors, our reviewers, and the academic community. We seek to innovate to meet the challenges of open-access academic publishing. For us,

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[1] Hopkins, J. R. (1995). Erik Homburger Erikson (1902–1994). *American Psychologist*, 50(9), 796-797. doi:http://dx.doi.org/10.1037/0003-066X.50.9.796

generativity has a special meaning. We acknowledge an obligation to give back to the academic community, which has supported us over the past decade and made our initial growth possible. As part of our commitment to generativity, we are re-doubling our efforts in several key areas. First, we are committed to keeping our article processing fees as low as possible to make the ESJ affordable to scholars from all countries. Second, we remain committed to fair and agile peer review and are making further changes to shorten the time between submission and publication of worthy contributions. Third, we are looking actively at ways to eliminate the article processing charges for scholars coming from low GDP countries through a system of subsidies. Fourth, we are examining ways to create and strengthen partnerships with various academic institutions that will mutually benefit those institutions and the ESJ. Finally, through our commitment to publishing excellence, we reaffirm our membership in an open-access academic publishing community that actively contributes to the vitality of scholarship worldwide.

Sincerely,

Daniel B. Hier, MD

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The Impact of Mobile Technology on Consumers' Charitable Behaviors: a Research Protocol

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Abstract
        Mobile sales have increased over the past decade. In today's online retail environment, the mobile channel has the added potential to bring greater value to the retail value chain. While researchers have examined a number of factors contributing to the success of mobile technology in the context of for-profit businesses, the benefits of the mobile channel remain largely untapped by organizations in the third sector – those outside the public and private sectors. Such organizations known as non-profits include voluntary and community organizations, cooperatives, and registered charities. Focusing specifically on charities, this article explores the impact of mobile technology on individuals' charitable intentions. Because the design of mobile apps influences both usability and functionality, we believe that their successful implementation can help charities not only increase their visibility but also attract more donations. This research proposes the use of the color green in a mobile app as a way to improve user browsing time on the charity's application. It is also proposed that the best time to target donors (existing and potential) is when they go to bed, otherwise known as "bedtime". Accordingly, the use of the color green in the conceptualization of a charity's mobile app significantly improves the user's attention when navigating the app and ultimately positively affects their intention to donate. To illustrate this

research protocol, we developed a conceptual framework for improving donation behavior; this framework will be tested through online studies.This research proposal has the potential to add much to the existing literature on multi-channel marketing and, in particular, on the impact of the mobile channel on consumers' donation behaviors towards charitable organizations.

Keywords: Mobile app design, charitable organizations, mobile app design, donation, intention, Charities, Donations, Charities, Multi-channel, Non-profit organizations

1.   Introduction

The diversity of channel distributions has been proven to add value to retailers. Nowadays, consumers can order products using their PC/Laptops, mobile devices, catalogs, or walking from in physical stores. The terms "multi-channel" and "omni-channel" have been extensively investigated in marketing research. However, one particular channel has attracted more interest from researchers; that is the mobile channel. This focus can be explained by many factors but the most probable one is the fact that today, each adult possesses a mobile phone and this by itself is a major opportunity for marketers since the mobile device always follows the potential consumer target. Marketers have the opportunity to pass their messages and communicate with consumers synchronously. Mobile channel promises to add more value to the value chain in the retail domain. Mobile sales have grown exponentially in the last decade. Scholars have studied a variety of factors that explain mobile success. Surprisingly, not all organizations take advantage of the derived benefit of the mobile channel. Charities are one of these organizations. Charities use of the mobile channel is in its infancy (The Giving Report, 2020). Charities vary in terms of scope and purposes. Most charities serve and add value to communities. This research borrows from the existing findings in multi-channel marketing and applies them to charities. Such charitable organizations run and operate from an individual, corporate, and government donations. Charities lack behind in marketing (e.g., Siemens, Raymond, Choi, & Choi, 2020; The Giving Report, 2020). It is the widespread belief that marketing is always associated with profit that refrains charities from applying marketing initiatives.

Our research model which will be described in more detail in this research proposal can be interpreted as follows. A charity may add a mobile channel in addition to its offline channel. Generally speaking, the transaction between a charity and a donor is completely different from the traditional transaction that occurs between a retailer and a consumer. In the latter case, the consumer receives a product/service from a retailer and pays money in return. When a donor donates to a Charity, he does not receive any tangible

product/service in return. Donor / Charity transactions involve more emotion and feeling than tangible and transactional thinking. Building on these assumptions, we argue that the more convenient the environment of the donation the more likely the donor may give or at least commit to the charity brand. We argue that charities may benefit from the value of adding online channels such as a mobile channel to attract donors. Mobile app design impacts Mobile use and utility. We argue that the use of the color green in the mobile app may increase the user focus and browsing time on the app. The color green has been proved to attract the eyes, relax the brain and help in memorizing. Green offers a calming and stress-free environment. I also argue that the best time to target donors is bedtime (when people go to bed). It becomes the norm that when a person goes to bed, he or she would pick up the mobile and browse for a few minutes before they or fall asleep. This browsing time does not last very long because the user's psychological state is at the lowest level in terms of energy. Thus, when the user browses a charity app that smartly and wisely use the color green may increase the time spent on the app (user attention) which in turns may impact the user's intention to donate, especially at bedtime. User intention to donate is defined as the user request for additional information from the charity personnel prior to making a decision. Moreover, offline personnel characteristics has been proven to influence online consumer behavior (e.g., Verhagen, Dolen, & Merikivi, 2018). When the personnel of the charitable organization call up the potential donor who intended to donate, he or she may commit to donate. When the purpose(s) of the charity matches the potential donor preferences for donation, he or she may donate.

This research proposal may bring tremendous value to the existing literature in multi-channel marketing. It also put emphasis on the importance of the donation environment. The expected findings may benefit charities by increasing the donor's segments and attract more people to support them. In particular, this study investigates the impact of mobile technology on consumers' donation behaviors and the following are the research questions: (1) How does the green color design in a charity's mobile app, *during bedtime*, affect consumer session duration (i.e., browsing time of the app visit)? (2) To what extent the (bedtime) moment in which consumers visits a mobile app influences the relationship between session duration and consumers' donation intentions? (3) How does consumer commitment mediate the relationship between consumers' donation intentions and behaviors? (4) How do charity personnel characteristics (i.e., friendliness) moderate the relationship between consumer intention and commitment towards the charity brand? (5) How do consumers' donation preferences moderate the relationship between consumer commitment and donation?

The rest of the paper is structured as follows: section 2 provides a brief literature review; section 3 shows our proposed conceptual framework; section 4 presents our hypotheses; section 5 discusses upon our research methodology; and sections 6 and 7 offer discussions and conclusions along with potential theoretical contributions and managerial implications for the charitable sector.

2. Literature Review

2.1. *Charities*

Charities complement the role of the governments by supporting and strengthening communities and societies (Siemens et al., 2020). Charites have a huge impact on the lives of Canadians. According to The Giving Report 2020, in Canada alone, there are approximately 86,000 registered charities, and most of them (80%) are small (i.e., they make less than $500, 000 in revenue a year).

The most recent data concerning the Canada's charitable sector shows that the number of Canadian who give to charities is decreasing each year, and this has been consistent since 2006 (The Giving Report, 2020). Despite this unfortunate reality, the online charitable sector in Canada is rapidly growing. In fact, the charities and non-profit organizations are still trying to make additional efforts, especially for the purposes of keeping up with changes in technology. The online charitable sector in Canada is rapidly growing. For instance, based on the most recent data from federal tax filings, "online giving grew to $144.8 million in 2017, a 17% increase in total giving in Canada" (The Giving Report, 2020, p.9).

Although desktop users accounted for 79% of donations revenue in 2019, mobile donations are rapidly increasing, e.g., 33% of mobile users in 2019 versus 25% for desktop users (The Giving Report, 2020). In addition, "Canadian charities continue to improve the ease of making online donations via mobile devices" (The Giving Report, 2020, p.10).

In most marketing and consumer behavior studies that have examined the effectivess of mobile technology, either from a business of consumer perspective, researchers have most often conducted their investigations by collecting data from the for-profit sector, i.e., from businesses whose primary goal is to generate profits. However, the potential role of mobile technology in the non-profit sector has been largely overlooked, an unfortunate lack of consideration given the rise of mobile giving.

While charities use a varity of channels and techniques to connect with the public, retaining existing donors and attracting new ones has become the most challenging goal for all charities (The Giving Report, 2020). This is especially important because these organizations rely solely on public funding to operate and survive.

Charities use different channels and techniques to communicate with the public and the potential donors. Research has shown that the nature of the

message that calls for donations impacts people's intention to give (Merchant, Ford, & Sargeant, 2010). According to Siemens et al. (2020) "deeper research on the social motivation behind donation behavior is needed" (p.2). However, very few, if any, studies have examined how mobile app effectiveness – and specifically the use of green colors in the app design) influences consumers' charitable behavior. We therefore build in this research a set of hypotheses based on multi-channel marketing theories. We hope that our results will help charities and non-profit organizations reduce the challenges they face by guiding them toward a new way of attracting donors.

2.2.   *Value of the Multi-, Cross-, and Omni-channel Models*

Although the concepts of cross-channel (CC) and multi-channel (MC) are used interchangeably in the literature (Hübner, Wollenburg, & Holzapfel, 2016), in the retail environment, these two concepts are distinct. Specifically, while both MC and CC retailers sell goods and/or services through multiple channels, MC retailers do not control channel integration, while CC retailers do; and MC consumers cannot trigger channel integration as opposed to CC retailers (Beck & Rygl, 2015).

The concept of omni-channel (OC) has been conceptualized by several scholars in different research contexts. Beck and Rygl (2015) built a taxonomy of the multiple retail channels and conceptualized OC as one integrated and unified system, in which all possible channels, online and offline, are merged together to create a unique and customized consumer shopping experience. Payne, Peltier, and Barger (2017) examined the marketing and communication functions of OC marketing. The authors argued that in the MC environment, marketers aim to get the best from each channel, whereas in the OC environment, "the most important interaction is not with the channel, but with the brand" (Payne et al., 2017, p.189).

Consequently, in the OC environment, the focus takes a holistic perspective where the ultimate goal is profitability (i.e., overall consumer profitability across all channels). As Payne et al. (2017) pointed out, "OC marketing follows a holistic shopping experience, one in which a consumer's buying journey is smooth and seamless, irrespective of the channel used" (p.189). Payne et al. (2017) offered an integrated omni-channel marketing communication framework to guide future research directions in three specific areas: brand engagement, touchpoints (Wagner, Schramm-Klein, & Steinmann, 2020), and consumer profitability (Chang & Zhang, 2016; Cambra-Fierro, Kamakura, Melero-Polo, & Sese, 2016), all three of which are key elements of their proposed framework. The theoretical rationale is that consumer touchpoints impact consumer engagement which in turn would affect consumer profitability. Consumers interact with retailers through a variety of touchpoints that can be in person or virtual. According to Payne et al. (2017), "one

consequence of this increasingly diverse array of personal and electronic touchpoints is the need to seamlessly integrate messaging strategies and tactics across multiple channels and the consumer life cycle" (p.186).

More recently, Shi, Wang, Chen, and Zhang (2020) has responded to Payne et al.'s (2017) research calls to further expand OC research on consumer decision-making process. Drawing on Rogers' (1995) diffusion of innovation theory, Shi et al. (2020) examined consumers' intention to adopt OC shopping in three distinct stages: first, consumers form a set OC shopping expectations (first stage); second, they observe the characteristics of their OC shopping experience (second stage); and finally, they adopt or reject OC shopping (third and final stage).

Retailers communicate with consumers using many different channels, such as physical stores, websites and mobile apps. Nowadays, combining online and offline channels is becoming a common practice among consumers. This diversity of channels has also led to the emergence of two major activities in consumer behavior: webrooming and showrooming. Webrooming involves searching for information online and then buying offline, while showrooming involves gathering data and reviewing products in physical stores and then purchasing online.

The effects of webrooming and showrooming behaviors have been largely studied in the retail sector (Hult, Sharma, Morgeson, & Zhang, 2019; Kang, 2018). For instance, Flavián, Gurrea, and Orús (2020) explored how webrooming and showrooming may impact customer experience, especially the feeling and the perception of being a smart shopper. According their findings, compared to showroomers, webroomers consider themselves smart shoppers because they feel they are saving time and effort and making the right purchase (Flavián et al., 2020). In other words, webroomers express stronger feelings of smart buying than showroomers. Flavián et al. (2020) also found that consumers, regardless of their shopping behaviors (webrooming or showrooming), rely on the mobile channel, making it a particularly promising medium.

Furthermore, many studies have investigated the impact of the addition of mobile channel on the firm's performance. For instance, Liu, Lobschat, Verhoef, and Zhao (2019) found that adding a mobile app tends to cannibalize purchases in existing channels (mobile websites) and that the marginal benefit created by the new channel is probably weaker than the cannibalization effect in existing channels, thus leading to a total negative effect on consumers' spending and retailers' revenue. On the other hand, Zhang, Pauwels, and Peng (2019) found that adding a O2OSP (i.e., online to offline service platform), notably a mobile app, hurts offline and total profits in the short term, but in the long run, O2OSP boosts offline and total sales by 23% and 34%, respectively. Accordingly, Zhang et al. (2019) strongly suggested that when introducing

O2OSP channels, managers should take a long-term view, as O2OSP channels complement the sales of traditional offline channels and attract more consumers to purchase both online and offline, thus improving total sales and profits. To a similar extent, Shakir Goraya, Zhu, Akram, Shareef, Malik, and Bhatti (2020) found that consumer switching behaviors (webrooming and showrooming) can implicitly contribute to an increase in profit by encouraging consumers to purchase more.

As to what drives consumers to use the mobile channel, Li (2018) suggested that usefulness (i.e., the possibilities to pinpoint location), transaction convenience (i.e., complement the purchase transaction directly without using a credit card or cash), economic benefits (i.e., acquire savings in terms of discounts, vouchers, and free gifts), and gamification (i.e., enjoy game-like activities), are prominent determinants that motivate consumers use mobile app. Liu et al. (2019) suggested additional Mobile attributes affecting consumers' purchase decisions namely, flexibility, greater convenience, better experience and lower risk. Van Heerde, Dinner, & Neslin (2019) suggest that convenience and superior digital engagement as some benefits of the retailer Mobile app. Among the factors that prevent consumers from using mobile apps is perceived inertia, which is defined as "a nonconscious process where consumers simply buy the same brand out of habit" (Li, 2018, p.174). Consumer perceived inertia acts as a situational constraint or barrier that discourages consumers from switching their behaviors, as they tend to stay with the same channel and do not like to change their habits (Li, 2018). Similarly, as suggested by Van Heerde et al. (2019), the learning process and the habit change required to use a mobile app are perceived by consumers as costs.

To conclude, the use of mobile app promises more growth in the future and more and more consumers tend to shop on mobile than other channels (e.g., Grewal, Noble, Roggeven, & Nordfalt, 2019; Wagner et al., 2020).

2.3. *Benefits of the Color Green in App Design*

In this section we focus on one specific attribute of the mobile device; that is the use of color in the app design. Research has demonstrated that the psychology of color increases website conversions through the use of human emotions and attitudes (Whitfield & Wiltshire, 1990; Khandelwal, 2020). When the eyes perceive color, they communicate with the brain which then sends signals of emotion, mood, and behavior throughout the body. People change behaviors based on the color they are viewing. Colors attract the attention of users and increase brand recognition, memory, and participation (Bonnardel, Piolat, & Bigot, 2011; Dzulkifli & Mustafar, 2013). The color green is excellent at creating feelings of comfort and calming emotions relaxing, calming effect as it can be associated with nature and trees (Kaya & Epps, 2004). In fact, this color has been found to have such strong associations with nature and being

environmentally friendly that the colour alone can send a message that a company is ethical (Chu & Rahman, 2010).

Similarly, researchers have found that individuals are less anxious when exposed to green, especially due to the fact that the color of green is capable of evoking feelings of tranquility (Akers, Barton, Cossey, Gainsford, Griffin, & Micklewright, 2012). Additionally, research has found that perceiving color for a certain time frame (i.e., short periods of time) can have positive effect upon mood or affective and cognitive psychological functions (Akers et al., 2012).

Bonnardel et al. (2011) suggested that colors have an impact on the website's appeal and users' cognitive processes and that the choice of color in website design can have significant impact on users' perceptions, judgements and willingness to navigate through websites. Moreover, Elliot (2015) argued that consumers evaluated online interfaces (e.g., websites) featuring blue (relative to green) as more trustworthy. Colour has been found to affect the relationship between arousal and memory. For instance, Kaya and Epps (2004) discovered that most participants (i.e., college students) associate green colour with "the feelings of relaxation, followed by happiness, comfort, peace, and hope" (p.32). Similarly, Lee, Srinivasan, and Rao (2010) suggested that cooler colors, such as green have a positive and pleasant effect on the human's brain.

Green is also the easiest color for the eyes to process, which explains why many brands use the color green in their logos. For example, the Starbucks brand incorporated the color green into its logo as it represents freshness. Green draws the eye to the most important areas of a screen, whether small or large, and sustains visual interest. Another example is Spotify, a music streaming service, which uses a calming/soothing green button with contrasting backgrounds (e.g., purple) to achieve the highest click-through rate and recruit new mobile users (BrandCrowd, 2020).

Color can often be the sole reason someone purchases a product. Bytyci (2020) added that psychological adaptive color, such as green, plays a major role influencing consumer purchase decisions. Well-chosen colors significantly attract consumer attention, and persuade acquisition (Bytyci, 2020). Additionally, green is also the colour of money, and "it a common choice in financial sectors and for utilitarian apps like Messages, Facetime and Evernote" (McDiarmid, 2015, para.7).

3. Conceptual Framework

The development of the model mainly draws on color theories (e.g., dual dimensional models or embodied versus referential meaning color model), the theory of resonated action (Fishbein & Ajzen, 1975), and the analogical transfer paradigm (Gregan-Paxton, Hibbard, Brunel, & Azar, 2002).

First, we will refer to color theories related to marketing and psychology to highlight the importance of color on consumer behavior (cognitive, affective

components). For instance, previous research (e.g., Labrecque & Milne, 2012; Labrecque, 2020; Lee, Noble, & Biswas, 2018) has proposed the embodied versus referential color meaning model to better understand consumer reactions to color. Second, we will refer to the theory of resonated action (TRA) to explain the intention-donation relationship. According to the TRA model, consumers tend to be more engage in a behavior (e.g., donation) if they view the action as being positive. Fishbein and Ajzen (1975) have emphasized the importance of intention more than the reality of usage, which is why this model is appropriate when it comes to charitable behaviors. Third, we will adopt Verhagen et al.'s (2018) theoretical foundation to examine the impact of offline charity personnel (e.g., friendliness) on consumer commitment. The analogical paradigm theory has been found to be useful to understand the interference that guide consumer decision-making (Verhagen et al., 2018). Based on these aforementioned theories, we will explain the relationships between the color of green on mobile app design and consumer behavioural intentions (i.e., commitment and donation).

In the following section, we introduce our conceptual model along with a set of proposed hypotheses (Figure 1). Specifically, we expect that mobile app with green color design increases the amount of time spent browsing on the app (hypothesis 1). Then, we expect that consumers' session duration on the app is positively associated with their intentions towards the charity brand (hypothesis 2), especially when consumers visit mobile apps at bedtime (hypothesis 3). Furthermore, we expect that consumer intention increases donation behavior (hypothesis 4), and that commitment explain this main effect (hypothesis 6). Finally, we include in our model charity personnel characteristics and charity cause preferences as key moderators of the relationships between intention and commitment (hypothesis 7), and commitment and donation behavior (hypothesis 8), respectively
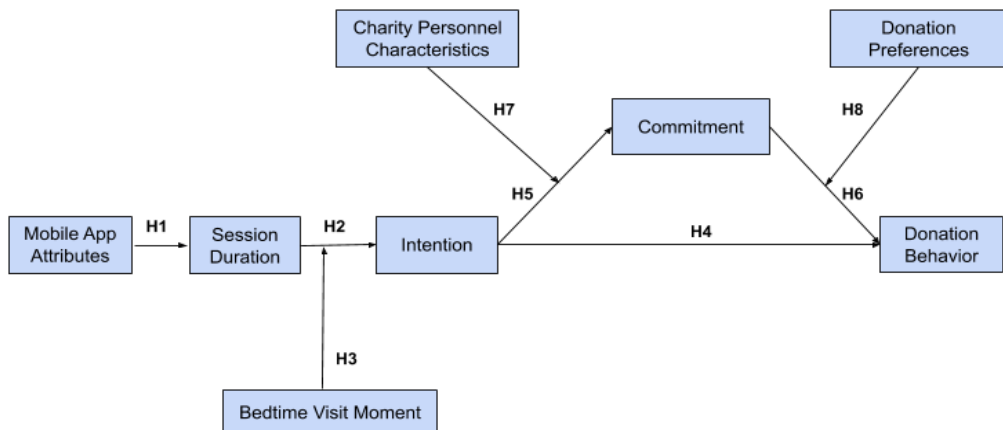
Figure 1: Proposed Conceptual Model

4.   Hypotheses Development

4.1.   *Mobile App Attributes: Green Color*

Mobile apps with green color design may positively influence the duration of the consumer session on the mobile app. In other words, we expect that consumers will spend more time with their mobile devices, especially when the mobile app design color is green. In other words, because the color green catches the eyeballs, we expect consumers to be attracted by the proper use of the green color design, leading them to browse the app for longer period. Thus, we hypothesize:

H₁: Mobile apps with proper use of the green color will increase consumers' duration session on the charitable app.

4.2.   *Relationship between Session Duration and Consumer Intention*

We suggest that the more time spent on the mobile app (i.e., longer session duration), the more tempted the consumer will be to request additional information on the charity brand (i.e., high intent consumers).

When consumers start navigating and searching in the app, they showed some kind of interest towards the app. Moreover, session duration (i.e., the amount of time spent on the app) is a measure of user engagement (Anurag, 2020). We expect that the longer the consumer session duration on the app is, the higher the likelihood of requesting more information about the charity brand. Thus, we hypothesize:

H₂. Consumer session duration has a positive effect on consumer intent to donate.

4.3.   *The Moderating Role of Bedtime Visit Moment*

We infeelingedtime Visit Moment" as a moderator variable that strengthen the effect that session duration (independent variable) has on consumer intention (dependent variable). We focus on *bedtime moment* as a specific time frame to conceptualize the moments in which consumers visit a mobile app. The bedtime moment begins when a consumer goes to bed. During this period, consumers used their mobile devices for different purposes (i.e., pre-bedtime activities).

We propose that the effect of session duration on consumer intention to take part in charitable donations is stronger (i.e., more positive), when consumers visit the charity app at bedtime. Therefore, we hypothesize:

H₃: Bedtime visit moment moderates the effect that the session duration has on consumer intention.

4.4. *Donation behavior*

H₄. Consumer intent to seek information on the charity brand has a positive impact on donation behavior.

4.5. *The Role of Commitment in the Intention-Donation Relationship*

Consumers with high donation intent will be more likely to commit towards the charity brand (hypothesis 5) and will subsequently make financial donations to charitable organizations. We suggest that the relationship between intention-donation is better explained by consumer commitment (hypothesis 6). Once consumers have high intent to donate, they will be more likely to exhibit positive attitude, such as brand commitment. In other words, high-intent mobile users (i.e., those who seek additional information about the charitable organization) will be more likely to commit towards the charity cause. Also, consumers with a high commitment towards the charity brand will be more likely to donate. In sum, the above leads us to the following hypothesizes:

H₅. Consumer intent to seek information on the charity brand has a positive impact on commitment towards the charitable organization.

H₆. Commitment mediates the impact of intention on donation behavior

4.6. **The Moderating Roles of Consumer Perception of Personnel Characteristics and Consumer Charity Cause Preferences**
4.6.1. *Consumer Perceptions of Charity Personnel Friendliness*

For determining key personnel characteristics influencing consumers' commitment, Verhagen et al.'s (2018) research approach was adopted as a theoretical foundation, focusing on offline store personnel competence and friendliness characteristics. Our study will focus on personnel friendliness as a key characteristic that may impact the intention-commitment relationship. Offline store personnel friendliness is defined as "the extent that store personnel and consumers like each other, and consumers have the feeling that they are cared for and have a pleasant conversation (Verhagen et al., 2018, p.3).

We expect that consumer intent on consumer commitment will be stronger when consumer perceptions of charity personnel are positive, i.e., consumers perceived that charity personnel is being friendly. The stronger (i.e., more positive) the perceptions toward charity personnel are, the stronger the relationship becomes between the consumer's intent to take part in charitable donations (e.g., requesting additional information) and commitment

towards the charitable organization. Taken together, this study advances the following hypothesis:

H7. Consumer perceptions of charity personnel friendliness moderate the relationship between intention and commitment.

4.6.2. Fit between Consumer Donation Preferences and Charity Purposes

We expect that highly committed consumers will be more prone to solicit actual donation behavior. A committed potential donor may not necessarily be a donor. The committed donor may change his/her mind at any time. We argue that the fit between the donation preferences of the potential donor and the purposes of the charity will likely motivate the potential donor to donate. Thus, we hypothesize

H8. Consumer donation preferences moderate the relationship between commitment and donation behavior.

In sum, we argue that the mobile app design (i.e., the use of the color green) will lock the consumer's attention on the app, especially when consumers visit the charity's app during bedtime (i.e., relaxing time), This approach of combining the use of color green in app design and bedtime moments creates a convenient environment, which may motivate the consumer to build an intention to helping and supporting charitable causes in the future. Furthermore, the consumer's intent to donate may be expressed by his/her request for additional information before he/she makes up his/her mind to commit to donating. We argue that the quality of charity personnel, expressed in terms of friendliness (Verhagen et al., 2018) will likely motivate the consumer to commit to the charity brand. Finally, when the potential donor's donation preferences fit with the purposes of the charity, the likelihood of moving from commitment to actual donation will be high.

5.   Method

For this research, two online studies will be conducted to test the above hypotheses. To begin, Hypotheses 1-3 will be tested through an initial study that will serve as a preliminary data collection. Essentially, Study 1 is designed to identify potential donors, i.e., individuals who may be interested in charitable giving, for inclusion in the second study. Study 2 is designed to examine giving behaviors (i.e., Hypotheses 4-8) and will include both respondents who have previously donated to a non-profit organization (i.e., existing donors) and those who demonstrated favorable giving intent in Study 1 (i.e., potential donors). In the following paragraphs, we discuss each of these two studies.

Study 1: Identifying potential donors (H_1, H_2, and H_3)

In Study 1, we aim to examine the effect of green color design in a charity mobile app on consumers' donation intentions, thus testing Hypotheses 1-3. We will collect data using an online survey, an effective quantitative approach to test the mediating effect of "bedtime visit moment" (H_3), a variable difficult to measure with other methods, such as laboratory user experience or online scenario-based experiments.

Our sample will consist of millennials and Generation Z respondents. According to Beresford Research, the generational age range for adults in 2022 is 18 to 25 for Generation Z (Gen Z) and 26 to 41 for Millennials. Two reasons can explain the sampling choice of these younger generations, namely their shopping habits and their donation behaviors. First, Millennials and Gen Z shoppers are more eco-conscious of the environmental and social impact of their purchase decisions and are most likely to spend 10% more on sustainable products from brands that resonate with their values and principles (Petro, 2021).

Second, as reported by RenPSG, a leading independent philanthropic solutions provider, Gen Z and millennials are revolutionizing the philanthropic world (Fisher, 2021). Despite a slight reluctance to donate at the start of the coronavirus pandemic, these younger generations donated the most in the US and the UK, with millennials having the highest giving rate, followed by Gen Z. According to Zelle's 2020 September Consumer Payment Behaviors report, nearly 3 out of 4 millennials in the US have sent financial aid to family or friends or donated to a non-profit since the start of the coronavirus pandemic (Leonhardt, 2020). Consistent with these findings, a new report from a fundraising technology provider, Enthuse, revealed an increase in digital donations in the UK, reporting 62% for Gen Z donors and 64% for millennials, with nearly half having donated to three or more causes in the last quarter of 2021 (Tullin, 2021). These two reasons demonstrate the economic power and expansive generosity of Millennials and Gen Z.

With the approval of Laval University, email invitations will be sent to students, staff, and faculty (N=150). Email recruitment is an effective method of accessing the integrity of the university community. This email will include the following eligibility criteria: the respondent must be at least 18 years old, specifically in the 18-41 age range, which corresponds to Gen Z adults (18-25) and Millennials (26-41), and must understand English.

Additionally, in the recruitment email, participants will be informed that this study is being conducted at a late hour, i.e., 7:00-9:00 p.m., to measure the mediating effect of the "bedtime visit moment" on the relationship between session duration on the app and intention to donate (H_3). Specifically, if the participant clicks on the link sent to them during these late hours, and remains active on the app for a relatively long period (i.e., longer session

length), or wishes to obtain additional information, then we will consider that participant a potential donor, and he or she will be selected for the main study (Study 2).

In sum, to examine the impact of green color design in mobile apps on consumers' donation intentions *(H₁, H₂, and H₃)*, participants that meet the eligibility criteria and confirm their participation in the research, will receive an email between 7 and 9 p.m. with a link to an online survey that will take about 8 minutes to complete.

Finally, participants whose session on the app lasted longer and/or those who requested more information about the charity during their session will be invited to participate in our second study.

Study 2: Consumers' donation behaviors (H₄, H₅, H₆, H₇, and H₈)

In study 2, we first examine the mediating role of commitment in the relationship between intention to donate and donation behavior *(H₄, H₅, and H₆)*. Then, the moderating effects of charity personnel characteristics (i.e., charity personnel's friendliness) and consumer donation preferences are investigated *(H₇ and H₈)*.

A sample size of at least 400 participants will be required to ensure that the analyses can be performed without constraints (Brysbaert, 2019). Participants for Study 2 will be recruited using Prolific Academic, a UK-based online platform designed for surveys and experiments. This platform gives access to more diverse and representative respondents (Peer, Brandimarte, Samat, & Acquisti, 2017; Vladasel, Parker, Sloof, & Van Praag, 2020). Recently, researchers analyzed data quality in online behavioral research and suggested that, unlike participants on the Amazon Mechanical Turk (MTurk) platform, Prolific respondents provided high-quality data in terms of attention, comprehension, honesty, and reliability (Peer, Rothschild, Gordon, Evernden, & Damer, 2021). Also, to ensure high-quality answers, we will consider participants with prior approval rates higher than 90% on Prolific (Vladasel et al.,2020).

Non-profit organizations, including charities and social enterprises, are an established organizational form in the UK and an online study allows us to reach a broad population of potential consumers (Vladasel et al.,2020).

As with Study 1, qualifying criteria regarding participation in Study 2 are that respondents must be at least 18 years old, specifically in the 18-41 age range (Gen Z adults and Millenials), and must understand English. Moreover, to ensure the presence of donors, we will include in Study 2 an additional inclusion criterion that requires participants to have made online donations to a non-profit organization in the past five years. There will be no additional restrictions on psychographic or demographic criteria. In summary, in Study

2, our potential pool of respondents will include both potential donors – who were screened in Study 1 – as well as existing donors.

5.1. *Measurement development*

Our online design questionnaire will be pre-tested with marketing professors, and experienced professionals majoring in strategic marketing for a non-profit organization and electronic commerce. For this study, we will be adapted scales primarily and whenever possible from previously validated questionnaires.

5.1.1. *Variables*

Construct	Definition
Mobile App Attribute	Green color design in mobile app
Donation Behavior	Donation refers to the actual act of giving (voluntary) donations, financial contributions, for charitable organization causes.
Intention	to donate is expressed by the request for additional information made by the potential donor. For this study, consumer intent is a purpose or reason behind an action, (i.e., to commit in the future towards the charity brand), as part of a consumer's journey toward a donation, which is a financial contribution to charitable causes.
Session Duration	Session duration is the amount of time the app is in front of the user (Schneider, 2020). It is a measure of app engagement. A session begins the moment a visitor arrives at your mobile app and ends when they exit or remain inactive for a predetermined period. As long as the visitor interacts with the charitable app, the session continues.
Bedtime Visit Moments	Bedtime are mindful and peaceful moment when consumers use their mobile devices just before they close their eyes.
Commitment	Donor commitment towards the charity brand is defined as the consumer's willingness to commit to the charity brand. He or she checks the amount of donation on the app.
Charity Personnel Characteristics	Charity personnel's friendliness is described as a relevant in-store personnel characteristic in today's multi-channel retail environment (Verhagen et al., 2018)
Donation Preferences	Fit between the charitable organization cause and the donor cause preferences. Donors have different interests when they donate. Some donate to fight hunger and poverty, others to support education.

6. Discussion
6.1. *Theoretical contributions*

This research relies on recent research findings in the area of multi-channel marketing. Research studies have largely demonstrated that the diversity of channels in retailing may add value to retailers (Cao, Liu, & Cao,

2018; Li, 2018; Liu et al., 2019; Van Heerde et al., 2019). We have noticed that the majority of these studies focus on for-profit organizations in their investigations. At the same time charities, a particular type of non-profit organization which plays a major role in supporting communities and societies have not been intensively targeted by marketers despite the reality that charities do not sell products and services. Instead, non-profit organizations and charities completely rely on donors and government funding to operate and survive. They, therefore, must double efforts to retain and maintain existing donors, while attracting potential donors and motivating them to give recurrently. Unfortunately, many charitable organizations still believe that applying marketing initiatives and techniques may imply financial investments and resources. This belief is somehow changing, and we see many charities start shifting towards the use of Information technology and marketing techniques to reach out to potential donors.

We aim to contribute to the existing knowledge in multi-channel marketing by investigating the external validity of existing theories and models. We propose a conceptual model with a set of hypotheses that will be tested. Our research model relies on a combination of existing theories namely, the theory of reasoned action (Fishbein & Ajzen, 1975), the analogical transfer paradigm (Gregan-Paxton et al., 2002), and psychological theories.

6.2.   *Managerial implications*

Today the majority of donors and potential donors use mobile devices. It makes more sense for charities to build mobile apps to reach out to their supporters. Charities may benefit from our findings by using our model in their fundraising efforts. The use of convenient devices such as a mobile channel is part of the consumers' pre-bedtime activities. At these particular moments, consumers are in a stress-free state of mind and will be more emotionally willing to help and support, which in turn will increase people's intention to donate. Moreover, we advise using the most relaxing color in the mobile app to attract the attention of the consumers, and therefore increase their duration of session journeys on the app.

Finally, we suggest that the effectiveness of the model depends largely on the qualities of the personnel, such as friendliness and trustworthiness, and who will follow up with the potential donors to motivate them to commit to charitable donations. For managers of multi-channel charities, we propose that having friendly and trustworthy personnel may have positive effects, as it may not only benefit the charity brand but also lead consumers to make financial contributions towards the charity brand. We proposed that the probability that a consumer commits to the charity brand is positively associated with in-store personnel characteristics.

Conclusion

People can either transact with a vendor or support a cause. In the first case, the consumer satisfies a need when purchasing a product/ service. In the second case, he or she purchases self-satisfaction by supporting a charitable organization. More emotions and feelings are involved with a donation than with a traditional transaction. Our goal is to demonstrate that the use of information technology has the potential to add value to the online non-profit sector.

Essentially, our genuine research protocol aims to extend current theories and models that investigate consumer decision-making and behavioral intention in the context of non-profit organizations. Specifically, the goal of this work is to develop a conceptual framework that would explain how charities can increase their online donations through their mobile app.

On the one hand, the research framework includes key determinants expected to generate higher donation intent from existing donors and potential donors. Specifically, the green color of the charity's mobile app should induce a longer session duration (i.e., prolonged usage of the app). This can be justified by the calming and restful effect that the color green can provide to the user. In this way, the session duration seems to be a good indicator of the user's attention and interest in the charity app.

On the other hand, our study should shed light on the value of the moderating roles of charity personnel characteristics and donation preferences. Ultimately, it is first proposed that the relationship between individuals' charitable intentions and their giving commitment is more conducive when the charity's staff is friendly. In addition, it is proposed that the relationship between individuals' commitment and their donation behavior is more favorable when individuals' donation preferences have been met/satisfied.

We believe that charities can benefit from lower budgets for mobile app marketing while achieving better results, maintaining positive relationships with their current and prospective donors, and targeting more important marketing goals. The research evidence will offer beneficial results for charity executives regarding the vital importance of effective mobile app design – in this case, the use of the color green. In addition, our study will provide practical recommendations to assist charity executives and marketers in their decision-making processes. Most importantly, we hope that charity executives will incorporate the color green into their mobile app to further attract user attention and, recognize the importance of charity staff friendliness and donation preferences. These are intended to improve the level of commitment of their current and potential donors and, ultimately, to generate more donations in order to achieve their social missions and maintain their financial viability.

References:

1. Akers, A., Barton, J., Cossey, R., Gainsford, P., Griffin, M., & Micklewright, D. (2012). Visual Color Perception in Green Exercise: Positive Effects on Mood and Perceived Exertion. *Environmental Science & Technology*, *46*(16), 8661–8666. https://doi.org/10.1021/es301685g

2. Anurag. (2020, October 03). 10 Key Metrics to Measure User Engagement in Mobile Apps. Retrieved from https://www.newgenapps.com/blog/mobile-app-analytics-10-key-metrics-to-measure-user-engagement/

3. Brand Crowd. (2020, August 23). *55 Famous Green Logos Of Big Brands*. BrandCrowd Blog. https://www.brandcrowd.com/blog/44-famous-green-logos-of-big-brands/

4. Beck, N., & Rygl, D. (2015). Categorization of multiple channel retailing in Multi-, Cross-, and Omni-Channel Retailing for retailers and retailing. *Journal of Retailing and Consumer Services,27*, 170-178. doi:10.1016/j.jretconser.2015.08.001

5. Bonnardel, N., Piolat, A., & Bigot, L. L. (2011, December 13). The impact of colour on Website appeal and users' cognitive processes. Retrieved from https://www.sciencedirect.com/science/article/abs/pii/S0141938210000958

6. Bytyci, S. (2020). Influence of Colors as a Key Element in Consumer Marketing. *Expert Journal of Marketing*, *8*(1), 41–47. http://marketing.expertjournals.com/ark:/16759/EJM_803bytyçi41-47.pdf

7. Cambra-Fierro, J., Kamakura, W. A., Melero-Polo, I., & Sese, F. J. (2016). Are multichannel customers really more valuable? An analysis of banking services. *International Journal of Research in Marketing*. doi:10.1016/j.ijresmar.2015.12.006

8. Cao, L., Liu, X., & Cao, W. (2018). The Effects of Search-Related and Purchase-Related Mobile App Additions on Retailers' Shareholder Wealth: The Roles of Firm Size, Product Category, and Customer Segment. *Journal of Retailing*, *94*(4), 343–351. https://doi.org/10.1016/j.jretai.2018.08.003

9. Chang, C., & Zhang, J. Z. (2016). The Effects of Channel Experiences and Direct Marketing on Customer Retention in Multichannel Settings. *Journal of Interactive Marketing,36*, 77-90. doi:10.1016/j.intmar.2016.05.002

10. Chu, A., & Rahman, O. (2010). What color is sustainable? Examining the eco-friendliness of color. *International Foundation of Fashion Technology Institutes Conference,*36-49.

11. Dzulkifli, M. A., & Mustafar, M. F. (2013). The Influence of Colour on Memory Performance: A Review. *The Malaysian Journal of Medical Sciences*, *20*(2), 3–9. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3743993/#b22-mjms-20-2-003

12. Elliot, A. J. (2015). Color and psychological functioning: a review of theoretical and empirical work. *Frontiers in Psychology*, *6*, 1–8. https://doi.org/10.3389/fpsyg.2015.00368

13. Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research (Addison-Wesley series in social psychology)*. Addison-Wesley.

14. Fisher, J. (2021, August 20). *Council Post: How Millennials and gen Z are revolutionizing the Philanthropic World*. Forbes. Retrieved from https://www.forbes.com/sites/forbestechcouncil/2021/08/20/how-millennials-and-gen-z-are-revolutionizing-the-philanthropic-world/?sh=4aacf848562d

15. Flavián, C., Gurrea, R., & Orús, C. (2020). Combining channels to make smart purchases: The role of webrooming and showrooming. *Journal of Retailing and Consumer Services,52*, 101923. doi:10.1016/j.jretconser.2019.101923

16. Hübner, A., Wollenburg, J., & Holzapfel, A. (2016). Retail logistics in the transition from multi-channel to omni-channel. *International Journal of Physical Distribution & Logistics Management,46*(6/7), 562-583. doi:10.1108/ijpdlm-08-2015-0179

17. Hult, G. T., Sharma, P. N., Morgeson, F. V., & Zhang, Y. (2019). Antecedents and Consequences of Customer Satisfaction: Do They Differ Across Online and Offline Purchases? *Journal of Retailing,95*(1), 10-23. doi:10.1016/j.jretai.2018.10.003

18. Grewal, D., Noble, S. M., Roggeveen, A. L., & Nordfalt, J. (2019). The future of in-store technology. *Journal of the Academy of Marketing Science*, *48*(1), 96–113. https://doi.org/10.1007/s11747-019-00697-z

19. Kang, J.-Y. M. (2018). Showrooming, Webrooming, and user-generated content creation in the omnichannel era. *Journal of Internet Commerce*, *17*(2), 145–169. https://doi.org/10.1080/15332861.2018.1433907

20. Kaya, N., & Epps, H. H. (2004). Color-emotion associations: Past experience and personal preference. *AIC 2004 Color and Paints, Interim Meeting of the International Color Association, Proceedings*, 31–34. https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.616.6634&rep=rep1&type=pdf

21. Khandelwal, S. (2020, June 19). *Efficacy of mindfulness meditation intervention on Mental Health during the times of covid-19*. SSRN. Retrieved from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3631052

22. Labrecque, L. I. (2020). Color research in marketing: Theoretical and technical considerations for conducting rigorous and impactful color research. *Psychology & Marketing*, *37*(7), 855–863. https://doi.org/10.1002/mar.21359

23. Labrecque, L. I., & Milne, G. R. (2012). Exciting red and competent blue: the importance of color in marketing. *Journal of the Academy of Marketing Science*, *40*(5), 711–727. https://doi.org/10.1007/s11747-010-0245-y

24. Lee, S., Srinivasan, V., & Rao, S. (2010). Color and store choice in electronic commerce: The explanatory role of trust. *Journal of Electronic Commerce Research,11*(2)

25. Lee, N. Y., Noble, S. M., & Biswas, D. (2018). Hey big spender! A golden (color) atmospheric effect on tipping behavior. *Journal of the Academy of Marketing Science*, *46*(2), 317–337. https://doi.org/10.1007/s11747-016-0508-3

26. Leonhardt, M. (2020, September 30). *Nearly 3 out of 4 millennials have donated money during the pandemic*. CNBC. Retrieved from https://www.cnbc.com/2020/09/29/more-millennials-donated-money-during-the-pandemic-than-other-generations.html

27. Li, C.-Y. (2018). Consumer behavior in switching between membership cards and mobile applications: The case of Starbucks. *Computers in Human Behavior*, *84*, 171–184. https://doi.org/10.1016/j.chb.2017.12.042

28. Liu, H., Lobschat, L., Verhoef, P. C., & Zhao, H. (2019). App Adoption: The Effect on Purchasing of Customers Who Have Used a Mobile Website Previously. *Journal of Interactive Marketing*, *47*, 16–34. https://doi.org/10.1016/j.intmar.2018.12.001

29. McDiarmid, J. (2015, August). *What the Colour of Your Logo Says About Your Business - Canadian Business*. Canadian Business - Your Source For Business News. https://www.canadianbusiness.com/leadership/what-the-colour-of-your-logo-says-about-your-business/.

30. Merchant, A., Ford, J. B., & Sargeant, A. (2010). Charitable organizations storytelling influence on donors emotions and intentions. *Journal of Business Research,63*(7), 754-762. doi:10.1016/j.jbusres.2009.05.013

31. Payne, E. M., Peltier, J. W., & Barger, V. A. (2017). Omni-channel marketing, integrated marketing communications and consumer

engagement. *Journal of Research in Interactive Marketing,11*(2), 185-197. doi:10.1108/jrim-08-2016-0091

32. Peer, E., Brandimarte, L., Samat, S., & Acquisti, A. (2017). Beyond the turk: Alternative platforms for crowdsourcing behavioral research. *Journal of Experimental Social Psychology*, *70*, 153–163. https://doi.org/10.1016/j.jesp.2017.01.006

33. Peer, E., Rothschild, D., Gordon, A., Evernden, Z., & Damer, E. (2021). Data quality of platforms and panels for online behavioral research. *Behavior   Research   Methods*. https://doi.org/10.3758/s13428-021-01694-3

34. Petro, G. (2021, December 10). *Gen Z is emerging as the sustainability generation*.   Forbes.   Retrieved   from https://www.forbes.com/sites/gregpetro/2021/04/30/gen-z-is-emerging-as-the-sustainability-generation/?sh=5d714cbe8699

35. Schneider, D. (2020, August 27). *Session duration - what is it and how to   increase   it*.   Similarweb.   Retrieved   from https://www.similarweb.com/corp/blog/research/market-research/session-duration/

36. Shakir Goraya, M. A., Zhu, J., Akram, M. S., Shareef, M. A., Malik, A., & Bhatti, Z. A. (2022). The impact of channel integration on consumers' channel preferences: Do showrooming and webrooming behaviors matter? Journal of Retailing and Consumer Services, 65, 102130. https://doi.org/10.1016/j.jretconser.2020.102130

37. Shi, S., Wang, Y., Chen, X., & Zhang, Q. (2020). Conceptualization of omnichannel customer experience and its impact on shopping intention: A mixed-method approach. *International Journal of Information   Management,50*,   325-336. doi:10.1016/j.ijinfomgt.2019.09.001

38. Siemens, J. C., Raymond, M. A., Choi, Y., & Choi, J. (2020). The influence of message appeal, social norms and donation social context on charitable giving: investigating the role of cultural tightness-looseness. *Journal of Marketing Theory and Practice*, *28*(2), 187–195. https://doi.org/10.1080/10696679.2020.1717968

39. The Giving Report 2020: CanadaHelps - Donate to any charity in Canada.   (2020,   March   25).   Retrieved   from https://www.canadahelps.org/en/the-giving-report/

40. Tullin, L. (2021, July 15). *Summer giving: The latest donor insights from Enthuse - Enthuse: Branded fundraising for charities*. Enthuse. Retrieved from https://enthuse.com/summer-giving-the-latest-donor-insights-from-enthuse-2/

41. Van Heerde, H. J., Dinner, I. M., & Neslin, S. A. (2019). Engaging the unengaged customer: The value of a retailer mobile app. *International*

Journal of Research in Marketing, *36*(3), 420–438. https://doi.org/10.1016/j.ijresmar.2019.03.003

42. Verhagen, T., Dolen, W., & Merikivi, J. (2018). The influence of in-store personnel on online store value: An analogical transfer perspective. *Psychology & Marketing,36*(3), 161-174. doi:10.1002/mar.21172

43. Vladasel, T. L., Parker, S., Sloof, R., & Van Praag, M. (2020). Striking a balance: Revenue drift, incentives, and effort allocation in social enterprises. *Academy of Management Proceedings*, *2020*(1), 12464. https://doi.org/10.5465/ambpp.2020.12464abstract

44. Wagner, G., Schramm-Klein, H., & Steinmann, S. (2020). Online retailing across e-channels and e-channel touchpoints: Empirical studies of consumer behavior in the multichannel e-commerce environment. *Journal of Business Research,107*, 256-270. doi:10.1016/j.jbusres.2018.10.048

45. Whitfield, T. W., and Wiltshire, T. J. (1990). Color psychology: a critical review. *Gen. Soc. Gen. Psychol.* 116, 385–411.

46. Zhang, S., Pauwels, K., & Peng, C. (2019). The Impact of Adding Online-to-Offline Service Platform Channels on Firms' Offline and Total Sales and Profits. *Journal of Interactive Marketing*, *47*, 115–128. https://doi.org/10.1016/j.intmar.2019.03.001

Challenges for Western Balkan Countries Regional Integration: the Case of North Macedonia

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Abstract

This paper aims to elaborate on the possibilities that increased regional integration initiatives can have in boosting mutual trade among the countries in the Western Balkans region, such as: creating a Regional Economic Area by 2023; the creation of a Common Regional Market based on EU rules in the period 2021-2024 and the initiative "Open Balkan" created between North Macedonia, Serbia, and Albania for enabling free movement of goods and free movement of workers. For our research, the gravity model of trade for North Macedonia covering the period 2005-2020 is applied. The influence of bilateral and regional trade agreements on the country's trade is analyzed. The results have shown that for North Macedonia, CEFTA-2006 membership has higher significance for increasing trade when compared to the agreement signed with the EU and to the other bilateral free trade agreements signed with EFTA, Turkey, and Ukraine. This paper point out that deepening trade integration through different regional initiatives could have a positive influence on increasing mutual trade.

Introduction

The process of regional integration in the case of Western Balkan countries may be analyzed by following two different integration paths – the first one considering the integration process within CEFTA-2006, and the second one by measuring the individual progress of each of CEFTA member-states towards the EU. Members of CEFTA-2006 are seven signatories (parties). Except for Moldova, all of them geographically belong to the Western Balkan region: Albania, Bosnia and Herzegovina, Kosovo, Montenegro, North Macedonia, and Serbia.

Despite the geographic compactness of the Western Balkan region, the EU happens to be the leading trade partner of all CEFTA-2006 members accounting for almost 70% of the whole region's export and around 60% of all imports. All CEFTA-2006 parties got a preferential bilateral free trade agreement (a Stabilization and Asociation Agreements for Western Balkan countries or Association Agreement for Moldova) with the EU and for almost a decade enjoy preferential treatment for almost all the export to the EU free of all qualitative and quantitative barriers. The trade regime for sugar, wine, baby beef, and certain fisheries is an exception from the offered EU preferential treatment and these goods are traded under the regime of tariff quotas.

CEFTA-2006 is the second-largest destination for export within the Western Balkan region. The creation of the free trade area for agricultural and non-agricultural goods resulted in a trade creation effect within the member-states' economies in the first couple of years of the Agreement's coming into force. This effect was also confirmed by a World Bank estimation which pointed out that bringing up CEFTA-2006 to the level reached by EFTA member-states might lead to a 2.3% of annual GDP growth. If CEFTA-2006 parties could reach the level of the EU integration, the GDP growth was estimated up to 6.7% annually (World Bank, 2019). The European financial and economic crises in 2008, however, interrupted the boost of trade within CEFTA-2006, and additionally diverted trade flows from within the region towards the EU market. Currently, Western Balkan economies record a high level of economic integration with the EU which accounts for almost 2/3 of their total trade exchange of goods, while the trade exchange within CEFTA - 2006 fell between 10-15% of the total trade exchange of goods of its member-states.

Graph.1 Share of export per trading partner, percentage of total export
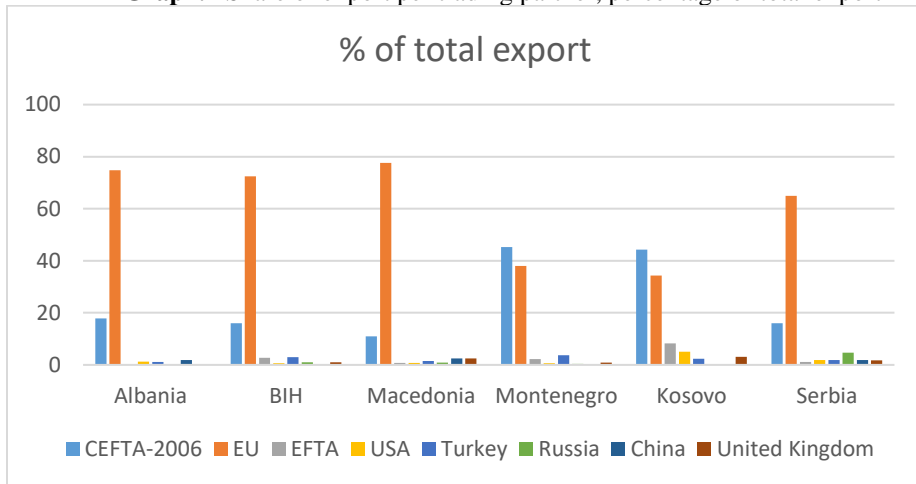
Source: International Monetary Fund, Direction of Trade Statistics,
https://data.imf.org.

The analysis of the trade flows of Western Balkan countries per trading partner is given in graphs 1 and 2. Data indicates that for Montenegro and Kosovo exporting to CEFTA-2006 members is more important than exporting to the EU market. However, for Albania, Bosnia, North Macedonia, and Serbia, the European Union's market is the most important for their exports. For the import, data indicate that for all Western Balkan countries import coming from the European Union has a dominant share. Import from CEFTA-2006 members is in the second place.

Graph 2. Share of imports per trading partner, percentage of total import

Source: International Monetary Fund, Direction of Trade Statistics,
https://data.imf.org.

Considering the negative impact that the financial and economic crisis from 2008 had upon the CEFTA-2006 integrative process, in 2014 an initiative under the so-called Berlin Proc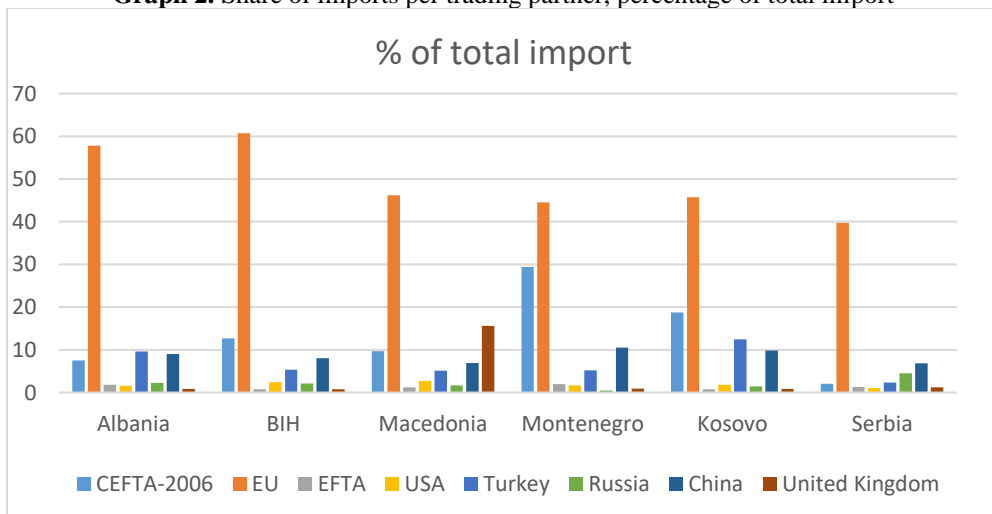ess was pushed forward to support and enhance further economic integration of the region. However, the initiative ended up with negative results and the resurrection of protectionism. In 2017, the Berlin Process launched a new idea of converting CEFTA-2006 into a Regional Economic Area to be fully established in 6 years (by 2023). By 2019 it was evident that this new idea did not decrease trade protectionism, thus integrative processes within CEFTA-2006 were at a stand-still. In 2020 a new Action Plan envisaged for creation of a Common Regional Market based on EU rules in the period from 2021-2024. The reluctance of all member-states to proceed according to the new Action Plan reached its pick with the outburst of the COVID-19 crises and the new macroeconomic challenges that the region had to solve as a new priority. Many authorities tried to estimate and measure the impact that the creation of a Common Regional Market within CEFTA-2006 would have upon the economic welfare of each of the member-states, but it was and still is unclear how the region is supposed to become a common market without previously becoming a customs union. Thus all estimations provided vague, ambiguous, and unclear results and recommendations which did not help to overcome the already present reluctant attitude. The latest 2021 Open Balkan Initiative in which only Albania, North Macedonia, and Serbia participate, brought even more confusion and resentment to the other four CEFTA-2006 member-states.

In this paper, the importance of the regional component for enhancing trade integration is highlighted, which appears to be very important, in the period of the new COVID-19 crisis. For this purpose, the gravity model to North Macedonias' trade is applied, to indicate the importance of the regional component of free trade agreements for increasing mutual trade and enhancing trade integration. In the first section, a literature review on the importance of the process of regional integration is provided. In the second section, the model and the data used for the gravity model for North Macedonia's trade are explained. In the next, third section, the results from the analysis are presented and in the fourth section, a conclusion is provided.

1.   Literature Review

Regional cooperation is considered to be one of the greatest accomplishments of the Western Balkans (Levitin et al., 2018). It is associated with numerous advantages for the region, encompassing improved regional stability, as well as promotion of the intra-regional trade of goods and services, economic competitiveness, and foreign investment inflows. As pointed out by many researchers, the regional integrations, in general, have a potentially important contribution to make to economic growth, development, and a rise

in the living standard (Fetahu, 2014, Agbonkhese et al., 2014, Aliu-Zhuja et al., 2014). Since the beginning of the century, the strategy for strengthening the economic regional cooperation in the Western Balkans included two broad approaches: intraregional trade integration and trade integration in the much bigger EU market. What distinguishes Western Balkan countries' EU accession process from that of the latest EU member-states is that, in addition to their bilateral accession process with the EU, the Western Balkan countries have also had to achieve benchmarks in terms of their intraregional relations (Bertelsmann Stiftung, 2020). As a result, the regional cooperation initiatives for the Western Balkan countries over the past two decades include bilateral investment treaties (BITs), free trade agreements (FTAs), and the Central European Free Trade Agreement (CEFTA-2006) and EU Stabilization and Association Agreements (SAAs). This segment proceeds with a brief overview of the empirical literature on the impact of the existing trade liberalization measures on trade in goods in the Western Balkans and a discussion of the newest initiatives toward deeper regional integration.

The first stream of research implementing gravity models emphasizes the role of non-economic factors, as the most important determinants of trade in Western Balkan countries. The role of regional integration, commonly depicted in the following studies by dummy variables for the different bilateral and multilateral FTAs, appears to be marginal or even negative. One of the earlier relevant studies authored by Begović (2011), shows a significant but negative effect of trade liberalization on bilateral trade flows in CEFTA-2006 member-states, suggesting that integration in CEFTA-2006 did not improve trade in the region for the observed period (1999-2007). The author interprets the lack of positive trade effects from CEFTA-2006 as an indication that at the time, potential political and institutional benefits from CEFTA-2006 may have prevailed. Klimczak et al. (2015) show that the trade liberalization process (encompassing both bilateral FTAs and CEFTA-2006) had a positive but insignificant influence on bilateral trade in the Western Balkan countries, whereas non-economic factors, such as language, culture, and common history, were the most important determinants on the bilateral trade in the region. Pere et al. (2017) estimate separate gravity models for the exports and imports of the Western Balkan countries and show that exports are positively affected by the common language and common borders with third countries, as well as with the EU, and with large and highly industrialized countries. Regarding the dummy variable for the CEFTA-2006 agreement, calculations in the export model record a statistically significant and negative impact, except for Serbia.

The recent research employing longer datasets and more advanced methodology, on the other hand, provides clear and robust evidence of the favorable impact of bilateral and multilateral FTAs on trade in the Western

Balkans. Petreski (2018) measures the effect of CEFTA-2006 membership by using a Conditional Mixed Process estimator whereby CEFTA-2006 is instrumented by a set of variables measuring democracy and governments' negotiation and is treated as endogenous creation. The results from the gravity model show that CEFTA-2006 increased intra-regional trade by 60% to 74%. According to the author, besides CEFTA-2006's importance in building members' competitiveness and generally increasing their cooperation capacities, it may have played an important role in mitigating the even stronger dependence of Western Balkan countries on trade exchange with the EU by rebuilding the regional market. Grieveson et al. (2020) apply a structural gravity model to test whether the export performance of the Western Balkan countries has been improved by trade liberalization in general, and by intra-regional trade liberalization in particular. Their results show that FTAs by the Western Balkan countries had a weaker relationship with their export performance than FTAs in general. However, the influence of CEFTA-2006 membership on promoting intra-regional trade was more favorable than the rest of the FTAs implemented by the Western Balkan and other countries, with an estimated rise in exports of 37.7%. In addition, the authors point to heterogeneity in the relationships between different FTAs and trade for different countries in Western Balkan, showing only a marginal impact of CEFTA-2006 on trade exchange between Serbia and the rest of the region. Also, their results show that both EU membership and the SAA are related to trade in a statistically significant way, finding that for the Western Balkan countries the magnitude of an increase in exports to the EU from a country with a SAA is more limited, i.e. down to 24.6%.

Lastly, the next step toward the strengthening of the regional economic integration is the initiative for the creation of a Common Regional Market (CRM) for the Western Balkan Six (WB6). The intention is to extract the benefits of increased market size and improved product and service quality, making the region more attractive to foreign investors. The aim is to remove barriers to enable the free flow of goods, services, capital, and 'highly skilled' labor, achieve digital integration, and introduce standardized rules for businesses. The qualitative analysis by Srbinoski et al. (2022) shows that the CRM plan is complementary to the EU integration objectives of North Macedonia and has the potential to accelerate the process of its accession to the EU. Nevertheless, there are several potential economic constraints on the CRM project. In particular, the authors argue that it is uncertain that the CRM would increase the intraregional trade, given the structural characteristics and limited size of the region and the rising importance of trade with the EU. Moreover, the manufacturing in the WB6 is less specialized and less localized, further constraining the potential for trade.

Table 1: Main finding of the studies investigating regional integration in the CEE and SEE

Study	Geographical coverage	Main findings
Levitin et al. (2018)	Western Balkan countries	The EU remains the main external anchor for the region's stability whereas strengthening regional cooperation is an explicit requirement for the Western Balkans aspirant countries in their EU membership bids.
Fetahu (2014)	Albania and the EU member-states	The economic patterns installed in Albania are strongly influenced by foreign request coming from abroad, especially from the EU community.
Aliu-Zhuja et al. (2014)	Kosovo	Membership in the EU is more than necessary and integration agreements are more than reasonable and offer the possibility of approximation of the intent of Kosovo.
Bertelsmann Stiftung (2020)	Western Balkan countries	In addition to their bilateral accession process with the EU, the Western Balkan countries have to achieve intraregional integration.
Begović (2011)	CEFTA-2006 member-countries	Trade liberalization has a significant but negative effect on bilateral trade flows in CEFTA-2006 member-states.
Klimczak et al. (2015)	Western Balkan countries	Non-economic factors, such as language, culture and common history, are the most important determinants of the bilateral trade in the Western Balkans.
Pere et al. (2017)	Western Balkan countries	Exports are positively affected by the common language and common borders with third countries, as well as with the EU, and with large and industrialized countries, whereas the CEFTA-2006 agreement dummy has a negative impact on exports.
Petreski (2018)	CEFTA-2006 member-countries	CEFTA-2006 increased intra-regional trade by 60% to 74%.
Grieveson et al. (2020)	Western Balkan countries	CEFTA-2006 membership promotes intra-regional trade in the Western Balkan and other countries, with an estimated rise in exports of 37.7%.
Srbinoski et al. (2022)	Western Balkan countries	Common Regional Market for the Western Balkan countries can potentially accelerate the process of the EU accession.

Source: compilation done by the authors

2.   Explanation of the econometric model and data

For this paper, a gravity panel model for North Macedonia's trade covering sixteen years period from 2005 to 2020 (including 2005 and 2020) is constructed, where the influence of bilateral and regional trade agreements on the country's trade is analyzed. The trade flows of North Macedonia with 40

trading partners are measured. Gravity models in international trade have long been used as a workhorse for analyzing bilateral trade flows. This model is widely used to examine country-specific trade characteristics (Anderson et al., 2003). The gravity model is OLS without effects. Although there are different modifications of the classical gravity model (Helpman et al., 2008; Almog, et al., 2019) for this paper the basic model is used by constructing the following equation:

LnTRADEijt= $\alpha_1$lnGDPcapitaijt + $\alpha_2$lnREMOTNESSijt + $\alpha_3$lnPOPijt + α_4EUjt + α_5CEFTAjt + α_6FTAjt + β_1PROjt + β_2LANGUAGEjt γ_j +λt +u_{it} (1)

The influence of certain independent variables on North Macedonia's trade is investigated. The dependent variable trade (TRADE*ijt*) is constructed as a sum of North Macedonia's export and import to its trading partners in absolute values. Three regressions are constructed for testing the influence of trade agreements on North Macedonia's trade. For all three regressions, commonly used variables in gravity models are tested: GDP per capita, remoteness, and population. Additionally, from these standard independent variables, three dummy variables are applied: the membership of the trading partner in CEFTA-2006, being a member of the European Union; or having signed a free trade agreement with North Macedonia and being one of the EFTA countries, Turkey or Ukraine, for example.

In the second regression, the variable productivity measuring country's labor productivity is added, and in the third regression, the variable common language is added.

The variable GDP per capita is the most common indicator for measuring the level of economic development. In this model, the variable is calculated as the difference between the maximum and the minimum value of GDP per capita of North Macedonia and the trading partner at constant prices (*GDPcapitaijt)*. The expectation is that the coefficient should be statistically significant and positive, thus meaning that an increase in the gap in the GDP per capita between North Macedonia and its trading partners should increase the intensity of mutual trade.

The variable remoteness is also a standard variable applied in gravity models measuring the weighted geographical distance (*REMOTNESSijt)*. Because the geographical distance is constant through time a dynamic component is added - geographical distance weighted by the GDP of the economies. The idea of using remoteness is to make an approximation for each country's set of alternatives considering the distance and economic size of the other countries. The formula for remoteness is based on Head (2000):

$$Rem_{it} = \frac{1}{\dfrac{DIS_{i,j_1}}{GDP_{jt_1}} + \dfrac{DIS_{i,j_2}}{GDP_{jt_2}} + \cdots + \dfrac{DIS_{i,j_r}}{GDP_{jt_r}}}$$

The coefficient measuring remoteness should be significant and negative since the expectation is that when the distance between two countries is higher it should likely have a negative impact on their bilateral trade.

The variable population ($POPijt$) represents the sum of the population in North Macedonia and the trading partner. The expectation is that a bigger population means biga ger market and therefore bigger potential for trade. So, it is expected that the sign of this variable should be positive.

For the purposes of the research and investigating the influence of regional and bilateral trade agreements on trade, three dummy variables are added. The first dummy variable is the EU and measures whether North Macedonia's trading partner is a European Union member with whom the bilateral trade is under preferential treatment. The second dummy variable is CEFTA-2006 which measures the trade flows with the other partners which are part of the regional integration CEFTA-2006. The third dummy variable, FTA, measures the trade of North Macedonia with the partners with whom North Macedonia has bilateral free trade agreements, like Turkey, EFTA countries, and Ukraine. The impact of these signed preferential trade agreements, no matter whether bilateral or regional, should be positive and statistically significant over trade.

In the second regression, the variable productivity *(PROjt)* is added to measure the influence of the differences between labor productivity in North Macedonia and its trading partners. If the sign of the coefficient for labor productivity is negative it means that an increase in the difference between labor productivity between North Macedonia and its trading partners will lead to decreasing bilateral trade. If the sign of the coefficient is positive it means that increasing the difference in labor productivity will lead to increased trade among North Macedonia and its trading partners.

In the third regression, a dummy variable for language *(LANGjt)* is added for testing the influence of sharing a common language between the trading partners on trade.

The general fit of the model is high, explaining around 60% of the variation in trade. Since the results are stable in all three equations, the results are considered to be robust. The data for the trade flows from and to North Macedonia are derived from the National Bank of the Republic of North Macedonia and the other data are from the World Bank data development indicators. The explanation of the data is given in Table 2 in the Appendix.

3.   Explanation of the results

In Table 1 the results from the gravity model are provided. It can be seen that all analyzed variables are statistically significant in all three regressions and bear the same sign. This gives the impression that the results are stable and robust. R2 and adjusted R2 are around 60% which points out that the independent variables explain on a satisfactory level the dependent variable trade.

Table 2. Results from the gravity data model

No of observations	599	587	587
Dependent variable	Ln (TRADE) in all three specifications		
LOG (CAPITADIF)	0.314276*** (0.06771)	0.535938*** (0.079209)	0.477921*** (0.074294)
LOG (REMOT2020)	-0.328188*** (0.070433)	-0.31902*** (0.077643)	-0.27848*** (0.072692)
LOG (POP)	1.483945*** (0.104069)	1.46883*** (0.109757)	1.525757*** (0.102756)
EU	2.757062*** (0.177778)	2.731643*** (0.18309)	2.660339*** (0.171272)
CEFTA-2006	4.202928*** (0.281989)	3.995254*** (0.274988)	3.300122*** (0.268165)
FTA	2.095796*** (0.246074)	2.374491*** (0.247807)	2.457498*** (0.231747)
LOG (PRO)		-0.43976*** (0.083117)	-0.21927*** (0.08139)
LANG			1.799177*** (0.198492)
R-squared	0.567987	0.591039	0.643526
Adjusted R-squared	0.563455	0.585918	0.638416

Note: Numbers given in parenthesis are corresponding standard deviations. *** : $p < 0.01$;
**:$p < 0.05$; * : $p < 0.1$
Source: Authors` calculations

The results for the variable GDP per capita difference are positive and statistically significant. These results confirm the reality that with the increment of the gap in GDP per capita between North Macedonia and its trading partners the possibility for trade increases. This is completely true as Macedonia's greatest trading partners are countries with significantly higher GDP per capita and is in line with the results that Kikerkova and al. (2021) have found in the analysis of the bilateral trade flows of North Macedonia.

The results for the variable Remoteness are statistically significant with a negative sign which is also in line with the expectations. The main feature of gravity models is that the increase of the distance between the trading partners has a negative influence on their mutual trade. With the increase in the distance between the trading partners, their trade should also decrease.

The influence of the variable Population is statistically significant and positive. The coefficients of the regressions are also stable and with a similar value in all three regressions.

The main findings of our paper are included in the results from the influence of the dummy variables: European Union member, CEFTA-2006 member or EFTA member-country, Turkey and Ukraine on North Macedonia's trade. All results are statistically significant, with positive signs and stable coefficients. What is more prominent and worth mentioning is the highest coefficient obtained from the trade with CEFTA-2006 partners. These coefficients in the three regressions are higher than the results from the influence of the trade with European Union members and with the free trade agreements signed with EFTA countries, Turkey and Ukraine. This shows that a 1% increase in the trade with the CEFTA-2006 partner could lead to an increase in North Macedonia's trade of 4.2% (3.99% or 3.3% respectively). Although these results might look opposite to the reality that North Macedonia and most of the Western Balkan countries trade more with the European Union than among themselves, they indicate that there is still potential in the increasing trade by deepening trade integration processes through different regional initiatives. In this line what this research proposes is a deepening of trade facilitation measures and increased application of mutual digital tools to facilitate trade. Similar results were also obtained by Petreski (2013) when the author estimated that CEFTA-2006 should have a larger effect on trade than the Stabilization and association agreements signed between these countries and the EU.

In the second and the third regression the variable labor productivity is added, which results are significant with a negative sign. These results show that the increase in the difference in labor productivity between North Macedonia and its trading partners should have a negative influence on North Macedonia's trade. The results are in line with the economic structure of the country (Kikerkova et al., 2021).

In the last regression, the dummy variable Language is added, more as a control variable, which indicates that sharing a common language among the trading partners should have a positive influence on trade.

Conclusion

The existence of many regional initiatives and the negative influence of the COVID-19 pandemic on trade inspired this paper that aims to elaborate on the possibilities that derive from the latest regional integration initiatives which might further support trade liberalization and boost CEFTA-2006 trade exchange. For this purpose, this research is focused on data on the trade exchange of goods of North Macedonia for 15 years from 2005-2020, and the influence of bilateral and regional trade agreements on the country's trade is

estimated by a gravity model. According to the results of the model, in the case of North Macedonia, CEFTA-2006 membership has a higher significance of increasing trade when compared to the preferential agreement with the EU members, as well as to bilateral free trade agreements signed with EFTA countries, Turkey and Ukraine. Although this model does not provide any insight or information on other member-states within CEFTA-2006, having in mind some of the authors' previous research on the trade exchange of goods within the free trade area, the authors strongly believe that similar even identical results could be obtained in their cases (with exception of Moldova which traditionally has negligible economic and trade links with the region). The greatest limitation of the research so far is that the analysis has been done on the trade of North Macedonia and in the future, there should be a focus and elaboration on the situation of the other Western Balkan countries.

As for the possible solutions for further trade liberalization and deeper economic integration authors recommend deepening regional cooperation which could be possible by implementing trade facilitation measures, such as: expanding the concept of green corridors and green lanes in all border crossing points; increasing the number of joint customs control points, expanding the Mutual Recognition Programmes in different areas (which to some extent has been already happening); enabling a fast implementation of the Mutual Recognition Agreements of Authorized Economic Operator programs; enabling the implementation of compatible digital platforms for smooth cross-border paperless trade exchange throughout the region, etc. Yet, it should be emphasized that all the efforts are going to be condemned to fail if there is not a strong political will that will back them up at the regional level.

References:
1. Agbonkhese, A. O., & Adekola, A. G. (2014). Regional economic integration in developing countries: a case study of Nigeria; a member of ECOWAS. *European Scientific Journal*, 10(19). https://doi.org/10.19044/esj.2014.v10n19p%p.
2. Aliu-Zhuja, D., & Nallbani, V. (2014). Integration agreements and their impact on integration of Kosovo in the European Union. *European Scientific Journal*, 10(32).
3. Almog, A., Bird, R., & Garlaschelli, D. (2019). Enhanced gravity model of trade: reconciling macroeconomic and network models. *Frontiers in Physics*, *7*, p.55, https://doi.org/10.3389/fphy.2019.00055.
4. Anderson, J. E., & Van Wincoop, E. (2003). Gravity with gravitas: A solution to the border puzzle. *American economic review*, *93*(1), pp. 170-192, https://doi.org/10.1257/000282803321455214.

5. Begović, S. (2011). The Effect of Free Trade Agreements on Bilateral Trade Flows: The Case of CEFTA, *Zagreb International Review of Economics & Business*, Vol. 14 (2), pp. 51–69.

6. Bertelsmann Stiftung (2020). Pushing on a String? An evaluation of regional economic cooperation in the Western Balkans, https://doi.org/10.11586/2020047.

7. Fetahu, E. (2014). Trade integration between Albania and European Union a gravity model based analysis. *European Scientific Journal*, 10(7). https://doi.org/10.19044/esj.2014.v10n7p%p.

8. Grieveson, R., Holzner, M., & Vuksic, G. (2020). Regional Cooperation in the Western Balkans: The Role of Stabilisation and Association Agreements, Bilateral Investment Treaties and Free Trade Agreements in Regional Investment and Trade Flows. *WIIW Research Report,* No. 445.

9. Head, Keith. (2003). *Gravity for beginners*. University of British Columbia.

10. Helpman, E., Melitz, M., & Rubinstein, Y. (2008). Estimating trade flows: Trading partners and trading volumes. *The quarterly journal of economics*, *123*(2), pp.441-487, https://doi.org/10.1162/qjec.2008.123.2.441.

11. Kikerkova I., Makrevska Disoska E., Toshevska-Trpchevska K., & Tonovska J. (2021). Determinants of the Bilateral Trade Flows of North Macedonia – A Gravity Model Approach, *DIEM: Dubrovnik International Economics Meeting*, Vol. 6, No.1, 2021, pp. 98-107, https://doi.org/10.17818/DIEM/2021/1.10.

12. Klimczak, Ł. & Trivić, J. (2015). "The determinants of intra-regional trade in the Western Balkans", *Proceedings of Rijeka School of Economics*, vol. 33, sv. 1, pp. 37-66.

13. Levitin, O., & Sanfey, P. (2018). Regional cooperation in the Western Balkans. European Bank for Reconstruction and Development (EBRD).

14. Pere, E., & Ninka, E. (2017). International Trade in Western Balkan Countries: Analysis Based on the Gravity Model, *The WIIW Balkan Observatory, Working Papers*, No. 126.

15. Petreski, M. (2013). Southeastern European Trade Analysis: A Role for Endogenous CEFTA-2006?, *Emerging Markets Finance and Trade* 49(5): 26-44, https://doi.org/10.2753/REE1540-496X490502.

16. Petreski, M. (2018). Has CEFTA Increased Members' Mutual Trade? Evidence with an Enlarged Set of Plausibly Exogenous Instruments, *Czech Journal of Economics and Finance* (68) 3: 293–316.

17. Srbinoski, B., & Petreski, B. (2022). Integrating WB6 towards Integrated EU - a View from North Macedonia. *Finance Think. Policy Study* No. 40.
18. World Bank (2019). *Western Balkan Regular Economic Report*, World Bank, Washington D.C.

Appendix

Table 3

Variable	Explanation	Source	Expected sign
Trade	export + import from Macedonia to the trading partner in absolute values	World Bank national accounts data and National Bank of the Republic of North Macedonia	
GDPcapita	max-min value of GDP per capita constant prices 2020 US dollars of Macedonia and the trading partner	World Bank national accounts data	+
Remoteness	distance in km * GDP constant2010 US dollars trade partner/world GDP constant 2010 US dollars	Google maps and World Bank national accounts data	_-
Population	The sum of the population of Macedonia and the trade partner	United Nations Population Division. World Population Prospects: 2019 Revision.	+/-
Labor productivity	Max-min value of GDP per person employed (constant 2017 PPP $)	World Bank national accounts data, and OECD National Accounts data files.	+
EU	Membership in EU	Dummy variable	+
CEFTA-2006	Membership in CEFTA-2006	Dummy variable	+
FTA	Free Trade Agreement with Turkey, Ukraine, and EFTA	Dummy variable	+
Language	Countries that have a common language	Dummy variable	+

Comparison of Government's Strategic Aims and Company Needs within the Hungarian Startup Ecosystem

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Abstract

   Startup companies are frequently perceived by the host state to be important actors who are increasing the economic competitiveness of the state's economy and its wider region. In response, states usually design assistance strategies to increase these startups' effectiveness. But credibly measuring whether these assistance strategies meet their stated goals is problematic, as there is a dearth/lack of suitable information related to startups to make the needed assessments. This paper aims to compare what Hungarian startup companies were struggling with and whether the Hungarian state's central entrepreneurial and innovation strategies intended to assist these startups were actually in alignment. The paper derives its data from the Hungarian Startup Report, the latest report from the Global Entrepreneurship Monitor, and relevant government strategies and uses content analysis to make its comparisons. The findings are categorized using Ben Spiegel's entrepreneurial attributes-based ecosystem model. Overall, the paper finds that many of the needs of the startups were addressed in government strategies at the abstract level on the cultural attribute side, but social and material attributes have mismatches and needed to be covered. This raises future questions on the effectiveness of the Hungarian government's startup assistance strategy and its implementation.

Keywords: Startup, entrepreneurial ecosystem, attributes, Hungarian Startup Report, Global Entrepreneurship Monitor, strategies

Introduction

The aim of the last fifty years of governments' support for science and technology has been to achieve "socio-economic goals such as national security, economic development, welfare, and the environment", but measuring the actual impact of this support has never been easy. (Benoit, Doré, 2005, 1.) The social sciences may serve as a base framework-creator to develop a conceptual model for measuring the impact of research and development, but any developed ideas must concretely appear in the market for achieving real effects. Putting inventions into practice and making them meet real needs is the baseline of innovation.

As the terminology developed by the OECD Oslo Manual states, innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organization, or external relations. (OECD, 2018) Therefore research, development, and innovation became strong keywords together in economic development strategies and/or economic boosting policies.

To further their economic growth, states around the world develop set policy objectives to become innovative leaders. Specifically, they seek to strengthen their research and development capacity, innovation and entrepreneurial ecosystem, and startup scene. States then design and implement policies and strategies to meet these objectives. But do they actually achieve their objectives? The effectiveness of the state's stated claims has rarely been subjected to empirical testing. This article focuses on a Central and Eastern European country, Hungary, were recently published data allows for an empirical comparison.

Most of the available research related to the Hungarian startup ecosystem focuses on the state's support in the venture capital sector. (Csákné Filep, Radácsi , Tímár, 2020) At the same time, the role of the government and EU funds appeared significant in financing technology incubator programs, organizing research hubs, and starting a state-level university startup education program, just to mention the biggest projects.

Although intensive interest has been shown in the area of innovation as a dedicated way how to achieve competitiveness, known supporting data on measuring effectiveness and impact are a lacking issue. As the non-governmental organization Startup Hungary, formed by successful business actors, has started its reports in 2020, researchers and policymakers got a tool for a holistic overview not just of how startup companies look like but also a list of their crucial issues to be solved. As all startup-related government strategies have been already in force at the time of the analyses, one can only monitor if the strategies are still covering startups' needs based on this new information. Therefore, in the following, this paper highlights the current pain

points of startups from the report and pairs them with a strategic answer, if there is any. It is presented in Spiegel's (2017) attribute-based entrepreneurial ecosystem model to serve as the framework for the analysis.

Findings can be a useful policy-making, revision-helping tool as well. Building in any available new information is important as "[b]ad expectations can destroy value as easily as bad execution." (Adner, 2006.)

Case selection

The current literature on the comparison of state's innovation policies and their actual impact on individual European states is lacking the case of Hungary. Fortunately, the recently published data now allows for such a comparison to be made.

According to one of the performances measuring tools for European countries, the European Innovation Scoreboard report (EC, 2021), Hungary is an emerging innovator with strength in sales impacts, digitalization, and linkages, but with decreased performance in investigated indicators relative to the European Union over time. Results do not necessarily mean that the particular points of the examined country do not develop. Rather, they indicate that the overall performance of a state does not follow the development tendencies of other European countries, and to keep up, further policy steps could be needed.

In 2013, an ecosystem-level roundtable cooperation – led by the state at the ministerial level – declared that Budapest has the potential to become a European startup capital. Although the outcome of the discussion, the "Runway Budapest 2.0.2.0. Startup Credo", was never implemented, it could comprehensively summarise the scale of what startup companies could add to the Hungarian competitiveness and what was thought to be required at that time to achieve it. Such an information flow and synergies within the ecosystem of this understudied, high-potential segment of private actors would help to build a more innovative, prosperous, and entrepreneurial-friendly country.

Although in 2016, the Digital Startup Strategy of Hungary was launched, due to its expiration, it is no longer in force. Research conducted by the European Commission in the same year on the sector in Hungary revealed that the country "has a vast science and innovation potential that can bring about a structural shift upwards in its economy" (EC, 2016), which could be seen as a cause for mild optimism. The report's findings and recommendations – primarily focused on the research and development-based innovations – were explicitly incorporated into the latest Hungary's Research, Development and Innovation Strategy 2021-2030. The innovation strategy does not paint the complete picture, so it is complemented by the small- and medium-sized

company supporting strategy (Strengthening of Hungarian Small and Medium-Sized Enterprise Strategy 2019-2030), which also covers startups. In these strategies, the state's claimed aim is to boost startup companies. As there was no comprehensive – publicly known – data collection about startups' weaknesses, whether startups' problems and government's aims actually meet has not been tested yet. In the last two years, two Hungarian startup reports have been conducted and published, and data is now finally available with regard to Hungary. This paper aims to realize a comparison between the states' claims and the startups' needs. To do so, a relevant comparative framework on the innovation ecosystem must be found; one that allows for the two sets of data points, government startup boosting strategies and actual startup needs, to be compared.

Literature review: innovation and entrepreneurial ecosystems

A large and growing body of literature has investigated the concept of ecosystems in social science, which idea has been taken from natural sciences. It can be seen as "a set of actors with varying degrees of multilateral, nongeneric complementarities that are not fully hierarchically controlled" (Jacobides, Cennamo, Gawer, 2018), and is widely used both to describe innovation and entrepreneurial networks.

Within innovation-related studies, a significant amount of research has been published on the innovation ecosystem, which was developed from innovation modeling, started in 1945 by Bush's linear innovation model (Bush, 1945). From the first linear concepts, over time, researchers have developed non-linear, feedback-based frameworks. Considerable actors of the models vary by concepts and authors, including coupling, system, or evolutionary models (Marinova, Phillimore, 2003). In a study that set out to determine the so-called Quadruple Helix Model, the drawn innovation ecosystem is a multi-level, multi-modal, multi-agent system, where actors continuously co-evolve, co-specialize, and co-opt (Carayannis, Campbell, 2009). Summarising 120 publications from the last 15 years, a current study states that the definition of an innovation ecosystem is "the evolving set of actors, activities, and artifacts, and the institutions and relations, including complementary and substitute relations, that are important for the innovative performance of an actor or a population of actors." (Granstrand Holgersson, 2020)

The importance of innovation model development results in ecosystem models stating that firms' competitive advantage is based on its surrounding institutes and organizations, not just inside processes. From this perspective, there is an unambiguous relationship, an "obvious harmony" between some of the innovation ecosystem models and entrepreneurial ecosystem ones. (Spigel, 2017) At the same time, holistically speaking, both ecosystem concepts have

social, cultural, and institutional dimensions (Motoyama Knowlton, 2016) where the state is involved.

Next to and similarly to innovation-centred research, several studies investigated especially the concept of the entrepreneurial ecosystem, and its models differ in what authors found significant to include. These models bear the advantage of operationalizing regional and international market accessibility, human capital, financing (including high-risk venture capital), mentorship, incubators and other support organizations, universities, and policymakers with regulatory and support roles – the combination and interdependencies of various social, political, economic, and cultural elements. (WEF, 2013)

In this paper, the author chose to use the attribute-based model of the entrepreneurial ecosystem, which presents the investigated country's cultural and social perspective, which is claimed to be a crucial part of development (Lounsbury et al., 2019.) The model arranges success factors into three interconnected attributes: cultural, social, and material. Cultural attributes can create a milieu that normalizes entrepreneurship as a career path, and pioneers are an important inspiration to follow. Social attributes are social network-based resources that can support learning, knowledge transfer, and investment where both the customer and the supplier have access to this network. Material attributes mean organizations, like universities or support services for early-stage firms, and institutions with formalized rules. Spiegel (2017) defined all 11 elements within his three attributes in Table 1.

Cultural attributes	Supportive culture	Cultural attitudes support and normalize entrepreneurial activities, risk-taking, and innovation.
	Histories of entrepreneurship	Prominent local examples of successful entrepreneurial ventures.
Social attributes	Worker talent	Presence of skilled workers who are willing to work at startups.
	Investment capital	Availability of investment capital from family and friends, angel investors, and venture capitalists.
	Networks	Presence of social networks that connect entrepreneurs, advisors, investors, and workers and that allow the free flow of knowledge and skills.
	Mentors and role models	Local successful entrepreneurs and business people who provide advice for younger entrepreneurs
Material attribute	Policy and governance	State-run programs or regulations that either support entrepreneurship through direct funding or remove barriers to new venture creation.
	Universities	and other higher education institutions which both train new entrepreneurs and produce new knowledge spillovers.

	Support services	Firms and organizations that provide ancillary services to new ventures, for example, patent lawyers, incubators, or accountancies.
	Physical infrastructure	Availability of sufficient office space, telecommunication facilities, and transportation infrastructure to enable venture creation and growth.
	Open markets	Presence of sufficient local opportunities to enable venture creation and unimpeded access to global markets.

Table 1. *Attributes of Entrepreneurial Ecosystems Spigel (2017, 56.) – modified by the author*

As the entrepreneurial ecosystem can be seen as more of a conceptual umbrella than a coherent theory (Spigel, 2017), the paper uses the chosen model as a framework to analyze the competitiveness of a narrow entrepreneurial segment, the innovative small and medium-sized companies – startups.

It means that the above described attribute-based model is not just territorially focused on this research but only investigates a sub-part of the entrepreneurial ecosystem: the startup ecosystem claimed in this paper as a subcategory of both the innovation and entrepreneurial ecosystems. Usage of attributes is important as Hungary's cultural background is claimed to be not completely entrepreneurial-friendly (Kozma, 2021), so framing the investigation into this context can add to the scientific discussion.

In this paper, startup companies are defined in the Hungarian Digital Success Program, Digital Startup Strategy of Hungary (2016): "startup means a new company with high growth potential or a project team starting the process of becoming a business and preparing for the entry to the market". (Jáki, Molnár, Kádár, 2019)

Data

Based on the available data, the paper compares the startup-related aims of strategies in force and the available information about startups' needs in Hungary. In this paper, the role of the state is analyzed only at an abstract, strategic level. As currently there is no startup-specified strategy in force, and based on the number of Hungarian strategies relevant for the startups,[1] this research only selects ones which (1) are in force, (2) suit the literature review's dual approach (innovation – entrepreneurship), (3) deal with startup-related issues.

Research, Development, and Innovation Strategy (2021-2030) has been in force since 13 July 2021, replacing the "'Investment into the Future' National Research-development and Innovation Strategy (2013–2020)"

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[1] For example: Hungary's Artificial Intelligence Strategy (2020-2030).

strategic document. As previously mentioned, the base of the strategy in force – explicitly stated in the document – is provided by the European Commission report from 2016, the "Peer Review of the Hungarian Research and Innovation System" and its highlighted policy recommendations. The report mentions the word "startup" 21 times, though it is almost exclusively in foreign countries' case studies. The report also highlights that not all innovation is science-based in Hungary. That is the startup-focused limit of the innovation strategy in force, which mentions "startup" 33 times and has a short subchapter of startup and spin-off activities. However, the main focus is still on research and development support and research and development commercialization as innovation. This strategy was prepared between 2019 and 2021, so it built on information from that time and the recommendations of the European Commission report from 2016. No comprehensive startup survey was – knowingly – available at that time.

From an entrepreneurial perspective, the Strengthening of Hungarian Small and Medium-Sized Enterprise Strategy (2019-2030) is analyzed, as startups are one form of small and medium-sized enterprises (SMEs) many issues are relevant. The word "startup" appears explicitly 16 times in this strategy, but in its action plan three closely related program is highlighted: (1) Startup ecosystem development, (2) Startup competence development, (3) University innovation ecosystem development (including startup support within the organization). On the other hand, important issues like entrepreneur-friendly regulation and taxation, internalization, or strengthening entrepreneurial culture are at the center of the document. The limitation of this strategy is that it does not focus only on the startups, but in many cases, startups have different problems and needs. The strategy has been valid since 2019, also without clear data on the specific needs of startup companies.

To further investigate the entrepreneurial side, the study uses the latest leading annual entrepreneurship ecosystem review, the Global Entrepreneurship Monitor 2021/2022 Global Report (GEM), and its findings related to Hungary. Reflecting on the lack of relevant, startup-specific information from the Hungarian ecosystem, Startup Hungary has launched an annual report since 2020. The survey from 2020 was conducted 2021 spring; for 2021, completed 2022 spring. Continuation of the data collection can contribute to a historical analysis of the development in the region.

This Hungarian Startup Report (2020, 2021) uses the survey methodology designed by Agnieszka Skala, Associate Professor of Faculty Management, Warsaw University of Technology. Startup Poland has used this research design for over seven years to make similar reports.

The Hungarian Startup Report 2021 compares data both from 2020 and 2021, therefore analysis is based on that document. In 2021 212 tech companies filled the survey, while in 2020 this number was 232. Estimation of the Startup

Hungary Report is that in 2021 approximately 1000 active startups operated in Hungary, but there is some differentiation from other sources.[2]

The Startup Hungary Report survey not only questions success-related topics but attempts to understand the key issues these companies face by analyzing either country or sector-specific issues.[3]

To summarise the analyzed documents with their henceforth used abbreviation, this paper investigates the following documents: (1) Research, Development and Innovation Strategy 2021-2030 (NRDIS); (2) Strengthening of Hungarian Small and Medium-Sized Enterprise Strategy 2019-2030 (SMEs); (3) 2021/2022 Global Entrepreneurship Report (GEM); (4) Hungarian Startup Report 2021 (HSR).

Comparing and Contrasting

Starting from this concept, the research question in this paper tries to answer: are the needs of the startups being met by the government strategies in Hungary? In doing so, it compares and contrasts selected needs and aims within an entrepreneurial ecosystem framework. The goal is to see if (1) there are new issues which appeared in the ecosystem since the strategies were developed; (2) whether there are any blind spots in the strategies due to the lack of comprehensive information.

The selection process of needs and aims was based on qualitative data analysis. Initially, content analysis was used, by assigning codes[4] (Neuendorf, 2017) to selected report and strategy segments. The used codes here were the 11 subcategories of Spiegel's three attributes (2007), listed in Table 1. As the same coding was used to target problems and aims within the documents, this sub-attributes-based matching becomes possible in the second phase, and comparisons can be drawn.

Coded aims that have no matching pair on the need side, are not selected for the analysis based on the lack of empirical data why they seem irrelevant to the startups now. On the other hand, coded needs without strategic aims are in fact policy shortcomings are in need of a solution. This list is one of this paper's key findings. Matching needs and aims, and problems without a strategic response are listed in Table 2.

The analyzed strategies are based on innovation and entrepreneurial ecosystem-related information between 2016-2021, but they came into force before a comprehensive startup survey was conducted. As the startup

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[2] On the other hand, Dealroom database statistics, published with the Hungarian Express Innovation Agency, shows 1521 startups on 27. May 2022.
https://startupbase-hungary.dealroom.co/

[3] Upcoming European Union regulation part of the Research is left out from the research as it does not strictly fit to the topic of this paper.

[4] Used software: MAXQda Analitics Pro 2020.

ecosystem is agile itself – and unlike SMEs, a startup company does not stay long in this startup life phase -, regular revision is necessary, so having comprehensive data from the last two years in the Hungarian Startup Reports related to the situation and the problems of them makes it a great opportunity to investigate.

To see the reflection of the now appearing problems in the aims of the government, this research selects country-specific issues from the reports with content analysis and pairs them with relevant answers from the selected Hungarian government strategies. Problems found in the HRS and responses from the strategies are framed in Spiegel's attribute-based entrepreneurial ecosystem model.

In this section Table 2. presents the result of a comparison and contrast of Hungarian startups' needs and the state's aim to boost them, presented in Spiegel's (2017) attribute-based entrepreneurial ecosystem model.

Attributes of Entrepreneurial Ecosystems, Spiegel (2017)		Startups' need (2021)	State's aim in strategies
Cultural attributes	Supportive culture	There is certainly a lack of gender diversity. Only 29% of startups reported having a female co-founder, and only 12% had a female CEO (SHR).	*From an R&D perspective:* Aim and tools to raise STEM field women researchers, which might be a base for spin-offs. (NRDIS)
	Supportive culture / Histories of entrepreneurship	Fear of failure (opportunity) 33,7% (place 42/47 in the ranking) (GEM).	Being an entrepreneur should be an attractive and respected career path. Supporting/encouraging entrepreneur path should include a safety net. Their role in the community should be strong; they should hold high social status (SMES).
		Entrepreneurs hold very low social status (SHR: Kozma, 2021).	
	Histories of entrepreneurship	Total early-stage Entrepreneurial Activity (TEA) and Established Business Ownership (EBO) are both below 10% (GEM).	
Social attributes	Worker talent	For champions (51%), attracting qualified personnel was the number one barrier to growth (SHR).	*From an R&D perspective:* Encouraging SMEs to work with researchers from universities and research institutes. Cooperation with undergraduate and PhD students (cooperative programs). Stop researchers' brain drain. (NRDIS)
	Investment capital	Only 10% have succeeded in raising international at all, while 42% want to raise funds from international VCs funds in the following year (SHR).	Encouraging international VCs to come to Hungary. (SMES).
		Private and public VCs continue to work separately from each other, even more drastically than before, while 70% who raised money got "public funds" (SHR).	Working public VC programs should continue but strengthening private VCs at the same time is important. (SMES).
		Over 40% strongly agree that "most of the local VCs offer government and EU-backed financing	*From R&D perspective:* For R&D actors' administrative burdens should be demolished

		opportunities that come with many strings attached - e.g., strict rules, restrictions, and administrative burden" (SHR).	(application, project management) (NRDIS).
		Angel investments are still a rarity, with VCs dominating from the pre-seed stage forward (SHR).	Angel investors, crowdfunding, etc., should be involved. (NRDIS) The role of the angel investors should be strengthened (SMES).
	Networks	-	-
	Mentors and role models	Mentoring becomes a paid job (career mentors) to help the startup meet its investment agreement obligations as investors lack portfolio management expertise. (SHR).	No relevant answer has been found.
Material attributes	Policy and governance	Most startups said their biggest legal burdens include strict rules for acquiring public financial support, bureaucracy in day-to-day operations, and Hungarian legal entities are not ideal for receiving funding and managing cap tables. Choosing a legal form is an issue, too (SHR).	Special startup tax, innovation tax reduce option, tax options for VCs and angel investors. Changing competition law and other restrictions to easy investment. Legal base for crowdfunding, conditional / soft-loan. Reducing bureaucracy. (NRDIS) "Startup-friendly" bases: regulation, tax, less bureaucracy. Legal innovations, like equity crowd-funding. Improving the quality of policy making and cooperation with forums where actors can meet (SMES).
		Over 30% of startups who incorporated foreign entities aiming for simple and transparent law (SHR).	
		21% see lower taxes on employees as a help-to-succeed option (SHR).	
		Convertible Notes require a banking license (SHR).	
		Secure Agreements for Future Equity (SAFEs) are not easy to adopt in the Hungarian legal system (SHR).	
		Startup-suitable ESOP with beneficial taxing conditions are missing (SHR).	
		Low scores in ease of entry and market dynamics indicate some regulatory barriers, preventing entrepreneurs from offering their goods and services to the domestic market (GEM).	
	Universities	-	-
	Support services	-	-
	Physical infrastructure	-	-
	Open markets	A majority of respondents, 37%, focus solely on the local market and another 19% report less than a quarter of their revenue coming from international sales (SHR).	Supporting to reach the international market is important; used tools could be international incubators and sharing knowledge (SMES).

Table 2. *Matching startup needs and problems with government strategic response in Hungary*

Analysis

From cultural attributes, based on the GEM statistics, less than 10% of the adult population is an entrepreneur (in any stage of business). Furthermore, entrepreneurs have low social status, and Hungarians have a high fear of failure (33,7%) compared with other GEM investigated countries in 2022. (HSR, 2022; GEM, 2022) Encouragement of entrepreneurship, higher social status, and a respected career path are stated in the strategies to reach. (SMEs) On the other hand, the Hungarian education and culture still have not addressed the "fail fast" culture of startups, which can even appear on the regulation level (bankruptcy laws), (EC, 2016).

The so-called "champions"[5] reported that attracting qualified personnel was the number one barrier to growth (51%). Nevertheless, university-related claims were not reported. (HSR, 2022) In the NRDIS only research-related human resource issues are stated (brain drain, cooperative Ph.D./MA programs, university-industry cooperation), but science is only one aspect of the problem, lack of skilled labor causes a more complex problem for these companies. From a diversity perspective, both the number of female co-founders (29%) and CEOs (12%) are low (HSR, 2022), but the lack of female founders and CEOs is also addressed only from researcher and spin-off direction, but non-R&D based companies or female CEOs without scientific background go beyond the strategies' scope.

Reaching for domestic investment is not a problematic issue in Hungary for startups. However – based on the report - the structure of venture capital and angel investment shows interesting trends: 70% of the startups raised money from "public" (state or EU-backed) venture capitals. On the other hand, 40% strongly agree that money comes with "strict rules, restrictions, and administrative burden". Cooperation between "public" and "private" funds is weak. Only 10% of startups were able to raise money from international funds. (HSR, 2022) Partial answers can be found in the strategies. Besides the state-backed and fully private funds, in Hungary, there is a fully public venture capital actor, the Hiventures Venture Capital Fund Management Ltd., supporting startups from pre-seed phrase, which can have connections with the problem of the still rare angel investments, as angels typically invest in pre-seed level.

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[5] The Hungarian Startup Report 2021 identifies two certain categories within its respondents: "champions" and "pretenders". It helps when one would like to see what the most successful startups see different than the rest of them. Champions (1) have average monthly revenue over of 80 000 EUR, in the last 6 months; and (2) have been growing at an average 5% or more per month in the last 6 months; or (3) have a well-known international VC backing them. Pretenders (1) are over 3 years old (started in 2018 or earlier); (2) have not yet reached product-market fit, and (3) have no regular revenue or only an average monthly revenue of under 10 000 EUR. (HSR, 2022)

Venture capital has an effect on mentoring as well. Instead of being an activity to give back to the community, career mentors try to cover and manage investor's lack of portfolio management expertise (Kozma, 2022.), which is not covered directly, but can be connected to the high bureaucracy where startups need extra help to meet the requirements.

The market size in Hungary is limited to scale; still, 37% focus only on the domestic market, while 19% of the global-aiming ones reported that less than a quarter of their revenue is coming from international sales. (HSR, 2022) Demolishment of administrative burdens (without specification) is dedicated to R&D actors and can be connected to the next point. (NRDIS)

With investigating from state support's perspective, the most obvious boundaries to solve could be the basic policy and governance-related problems. Issues mentioned include strict rules for acquiring public financial support, bureaucracy in day-to-day operations, regulatory barriers, possible legal entity problems (receiving funds, using convertible notes, ESOP or SAFE), and high employee taxes. There are many reasons behind startups incorporating foreign entities, but over 30% of them aim for simple and transparent law. (HSR, 2022) One can find a response in the strategies as startup-friendly institutions have been drawn as goals.

Many of the problems are covered in the investigated strategies in an abstract way. The Hungarian Research, Development, and Innovation Strategy addressed the issues from an R&D&I perspective therefore, suggestions there can be understood as research-based startup support. Cultural and bureaucratic-legal issues are covered; the latter should be the major issue that the state can handle easily and quickly. Building on the existing solutions, and learning from previous experiences is also a good practice in the strategies.

However, venture capital-related problems are addressed differently. Taxation and administration problems, continuity, and internationalization are highlighted, but smart money is not in focus – not solving the lack of knowledge, what this paper mentioned related to the mentors.

It does not appear as a problem, but in the strategies, there is a strong focus on networks in the ecosystem, redefining the university's role in innovation networks, building research infrastructure networks, and establishing IPO support grants (NRDIS).

Conclusion

This comparison finds that startup-related Hungarian strategies are based on ideas from the period between 2016-2021 but could not have a comprehensive, data-based fund. Still, their analyzed aims in the cultural attribute are not far from needs, as reported in the Hungarian Startup Report. On the other hand, complete consistency cannot be declared as social and material attributes are not fully matched. Furthermore, most of the time,

strategies address issues not from the startup, but from the R&D aspects, which can be useful for R&D-based startups but not necessarily for a whole ecosystem.

From a cultural and human resource point, new problems appeared, while investment capital and governance-related problems got more detailed with new information available.

As aims themself do not lead to competitive startups, the abstract, strategic goals must be translated to action, rules, and regulations. Many of the problems not explicitly found in the reports appeared in a level of abstraction which can be extendable and used to serve as a base of implementation. Realizing existing strategic aims and reflecting on new issues can use good practices from all over the world, which often leads to copying and not implementing models without considering local economic and cultural attributes.

Naturally, it is the forever lasting, both ideological and practical question: which problem should be solved by the state and where can the "invisible hand" of the market can clear the path for success, which requires further investigation.

Limitation of the paper: it is not aiming to analyze points from the strategies which are not addressed in the reports, as there is no empirical data on why they are no longer a problem, whether it is currently irrelevant, or the strategies have already solved it, negligence or other factors

References:
1. 1414/2013. (VII. 4.) Government decree Investment into the Future: National Research-development and Innovation Strategy (2013–2020).
2. 1858/2016. (XII. 27.) Government decree Digital Startup Strategy of Hungary.
3. 1627/2019. (XI. 8.) Government decree Strengthening of Hungarian Small and Medium-Sized Enterprise Strategy 2019-2030.
4. 1456/2021. (VII. 13.) Government decree Research, Development and Innovation Strategy 2021-2030.
5. Adner, R. (2006). *Match Your Innovation Strategy to Your Innovation Ecosystem.* Harvard Business Review. https://hbr.org/2006/04/match-your-innovation-strategy-to-your-innovation-ecosystem
6. Artifical Intelligence Coalition, Digital Success Program, Ministry for Innovation and Technology. (2020). *Hungary's Artificial Intelligence Strategy (2020-2030).* https://ai-hungary.com/files/e8/dd/e8dd79bd380a40c9890dd2fb01dd771b.pdf
7. Benoit, G., Doré, C. (2005). Measuring the impacts of science: Beyond the economic dimension. *INRS Urbanisation, Culture et Société. HIST*

Lecture, Helsinki Institute for Science and Technology Studies, Helsinki, Finland.

8. Bush, Vannevar. (1945). Science the Endless Frontier. *Ransactions of the Kansas Academy of Science*. 48(3), 231-264.

9. Carayannis, E., Campbell, D. (2009). 'Mode 3' and 'Quadruple Helix': Toward a 21st century fractal innovation ecosystem. *International Journal of Technology Management*. 46(3/4), 201-234. DOI: 10.1504/IJTM.2009.023374

10. Csákné Filep, J., Radácsi , L., Tímár, G. (2020). A magyar startup-vállalkozások túlélését és növekedését befolyásoló tényezők. Szakértői interjúk tapasztalatai. *Vezetéstudomány - Budapest Management Review*. 51(1), 16-31. https://doi.org/10.14267/VEZTUD.2020.01.02

11. Dealroom Startup Database. (2022). *Startupbase Hungary*. https://startupbase-hungary.dealroom.co/

12. European Commission (EC). (2016). *Peer Review of the Hungarian Research and Innovation system. Horizon 2020 Policy Support Facility.* Brussels. DOI: 10.2777/236994

13. European Commission (EC). (2021). *European Innovation Scoreboard 2021*. Publications Office of the European Union, Luxembourg. DOI:10.2873/340166

14. Global Entrepreneurship Monitor. (2022). *Global Entrepreneurship Monitor 2021/2022 Global Report: Opportunity Amid Disruption*. London.

15. Granstrand, O., Holgersson, M. (2020). Innovation ecosystems: A conceptual review and a new definition. *Technovation*. 90-91. doi:https://doi.org/10.1016/j.technovation.2019.102098

16. Jacobides, M., Cennamo, C., Gawer, A. (2018). Towards a theory of ecosystems. *Strategic Management Journal*. 39(8), 2255-2276. doi:https://doi.org/10.1002/smj.2904

17. Jáki, E., Molnár, E., Kádár, B. (2019). Characteristics and challenges of the Hungarian startup ecosystem. *Vezetéstudomány - Budapest Management Review*. 50(5), 2-12. https://doi.org/10.14267/VEZTUD.2019.05.01

18. Kozma, A. (2022). Learning from incubating early stage startups in Hungary. *Hungarian Startup Report 2021*.

19. Lounsbury, M., Cornelissen, J., Granqvist, N., Grodal, S.(2019). Culture, innovation and entrepreneurship. *Organization & Management.* 21(1). https://doi.org/10.1080/14479338.2018.1537716

20. Marinova, D., Phillimore, J. (2003.). Models of Innovation. *The International Handbook on Innovation*, (ed. Shavinina, L.), Pergamon, Oxford. 44-53.

21. Ministry for National Economy. (2013). *Runway Budapest 2.0.2.0 – A Startup Credo.* Hungary.

22. Motoyama, Y., Knowlton, K. (2016). Examining the Connections within the Startup Ecosystem: A Case Study of St. Louis. *Entrepreneurship Research Journal*. 7(1). DOI: https://doi.org/10.1515/erj-2016-0011

23. Neuendorf, K. A. (2017). The Content Analysis Guidebook. 2nd edition. SAGE Publications. DOI: https://dx.doi.org/10.4135/9781071802878

24. Organisation for Economic Co-operation and Development (OECD). (2018). *Oslo Manual 2018. Guidelines for Collecting, Reporting and Using Data on Innovation.* 4th Edition. OECD Publishing, Paris, Eurostat, Luxembourg, https://doi.org/10.1787/9789264304604-en

25. Spigel, B. (2017). The Relational Organization of Entrepreneurial Ecosystems. *Entrepreneurship Theory and Practice*. 41(1), 49-72. doi:https://doi.org/10.1111/etap.12167

26. Startup Hungary (2021). *Hungarian Startup Report 2020*. https://www.startuphungary.io/

27. Startup Hungary (2022). *Hungarian Startup Report 2021*. https://www.startuphungary.io/

28. World Economic Forum (WEF). (2013). *Entrepreneurial ecosystems around the globe and company growth.* World Economic Forum, Geneva.

The Effectiveness of Using a Cognitive Style-based Chatbot in Developing Science Concepts and Critical Thinking Skills among Preparatory School Pupils

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Abstract

        The research investigated the effectiveness of using a cognitive style-based chatbot in developing science concepts and critical thinking skills among preparatory school pupils. To achieve the aim of the research, the researchers applied the two groups' quasi-experimental design and utilized three instruments as follows;1) Budner scale to measure the tolerance of ambiguity; 2) Science concepts achievement test developed by the researchers and implemented before and after applying a cognitive style-based chatbot; 3) The critical thinking skills test developed by the researchers to identify four critical thinking skills required for grade 8 level and implemented before and after applying a cognitive style-based chatbot. The participants were chosen randomly from eighth-graders (N=50) at HOIS (Hurghada Official International School), Red Sea Governorate, Egypt. The researchers divided participants into two experimental groups of 25 pupils (EGA) and (EGB) according to their cognitive style as tolerant or intolerant of ambiguity.

Quantitative results showed the significant mean differences between the scores of participants at level (0.005 ≥) in the pre-post testing procedures in favor of the post-testing for both dependent variables (science concept and critical thinking skills). Results indicated the positive impact of utilizing a cognitive style-based chatbot in developing science concepts and critical thinking skills for preparatory school pupils. So, the researchers recommended employing chatbots in learning science for their high effectiveness in developing science concepts and critical thinking skills among preparatory school pupils in Egypt.

Keywords: Chatbot, Cognitive style, Science concepts, Critical thinking skills

1.   Introduction

The world has enormously changed in the last two decades due to the technological advancements that have converted the world into a global village. Globalization has influenced several aspects of our life and education in particular. It has changed the way humans teach and learn by creating more challenges for teachers to explore effective teaching methods that suit learners' cognitive and learning styles. In this concern, designing interactive e-learning environments that consider learners' traits, characteristics, and information-processing methods, and investigating the role of student learning styles becomes crucial, especially in terms of achievement and attitudes. Tolerance and intolerance of ambiguity are characteristics that affect how an individual learns and the methods of receiving and processing information (Ismaeel, D., & Al Mulhim, E., 2019).   Khalifa, A., (2011) asserted that education in general and teaching science, in particular, is concerned with the integrated growth of the learner in the cognitive, skill, and emotional aspects. Meanwhile, the main task of teaching science is to teach learners how to think, not only how to memorize (p.329). Furthermore, science is one of the core subjects that contribute to the development of individuals and nations, as it is one of the pillars that connect technology and socio-economic development (Kusi, C. (2017).

Moreover, Abuzied, A. H., & Mohamed, A. (2019) defined one of the most significant goals of learning science and other curricula is to acquire the appropriate science concepts to develop the learner's ability to use the scientific method and contribute to achieving the educational goals. Educators emphasized the significance of acquiring science concepts which became the main goal in all subjects and educational stages (p.95).

Furthermore, the integration of modern educational technologies in teaching science was one of the crucial topics occupied by educators and researchers recently to enhance the learners' science concepts and acquire the 21st-century skills to improve the learning process and its outcomes. Artificial

Intelligence is one of the fastest-growing technologies in the education sector that has promoted changes in schools, teaching methods, learning methods, campus environment, curricula, and the entire education industry (Karsenti, T., 2019).

Thus, the spreading of the artificial intelligence concept through social networks increases the use of its techniques and digital tools that creates interactive learning environments to overcome the individual differences among learners. AI-powered chatbots have appeared across many platforms such as Facebook and Skype as digital assistants for users depending on simulation and automatic text chatting. Moreover, several studies have indicated the effectiveness of using chatbots in education, for instance, the studies by (Roos & Sofie, 2018; Bii P.K& others,2018; Fryer, L. et al, 2017; Abbasi. S & Kazi. H., 2014; Kowalski. S, et al, 2013) confirmed the positive impact of using chatbots in the education sector.

Despite the tremendous development of integrating artificial intelligence tools and applications in the educational sector, science educators keep applying the conventional teaching methods in schools and colleges, especially in developing countries. Therefore, this research seeks to investigate how teachers could utilize creative and innovative teaching methods such as employing cognitive style-based chatbots to develop science concepts and critical thinking skills among eighth-graders to keep pace with the tremendous scientific and technical revolution that Egypt is going through for achieving the sustainable development goals considering Egypt Vision (2030).

2.   Problem of the Research:

Science teaching mainly aims at providing students with concepts of science and critical thinking skills as one of the most important 21st-century skills. Therefore, there is a real need to adopt new technologies that enhance and enrich the learning experience of middle-stage pupils. Studies found a proven weakness in developing science concepts and critical thinking skills among middle-school pupils. In addition, the researcher also confirmed the existence of the problem through many sources as follows:

First, due to the researcher's experience as a science HOD (Head of Department) at HOIS (Hurghada Official International School) and as a science teacher for middle and upper grades. The researcher noticed the problem through direct observation of students during science sessions, class discussions, and activities; by tracking pupils' progress and scores on science assignments, assessments, and final tests; and by conducting individual and group interviews with science teachers to follow up on their work and identify problems that hinder pupils' achievement in learning science learning.

Second, the researcher conducted a pilot study on (30) males and females of the preparatory stage for the academic year (2020/2021) using an electronic questionnaire divided into two sections: The first section contains (10 Multiple-choice questions) about the difficulties pupils encounter while learning science and the second section is for writing the students' comments and suggestions about how to improve the development of science concepts and critical thinking skills. The researcher distributed the questionnaire through the Microsoft Team platform, and the results revealed that (70%) of the pupils were unable to develop the science concepts and apply them in real-life situations. (80%) of them cannot think critically and answer the problem-solving questions found in their science lessons, and (95%) wanted to learn in new and innovative technological ways.

Third, relevant literature and previous studies were reviewed in this context and revealed deficiency in the development of science concepts and critical thinking skills such as the studies by (Khalil, E. 2020; Elmasry, H., 2020; Elkebeby, A., 2019; Al–Harahsheh, K., 2019; Elkebeby, A., 2019; Elajmi, S., 2018; Susiani, T., Salimi, M., & Hidayah, R., 2018 Abowazna, F., & Abogaber, M., (2017). Moreover, other studies have also revealed that learning techniques embedded in curricula could foster in-depth learning and help students understand science concepts and processes; hypermedia technology is one of these (Yang, D., & Baldwin, S., 2020).

Fourth, taking into account (TIMSS, 2019), the seventh assessment cycle was conducted in 64 participating countries worldwide. Egypt ranked **62** from 64 countries participating in the science achievement test, indicating a low level of achievement of common core standards for science subjects for middle-school pupils (grade-8). Hence, the main recommendations of many recent conferences held in Egypt such (Developing Education in Egypt-Challenges and prospects of success, 2019); (Egypt can by science, 2018); and (The education in Egypt towards creative solutions, 2017) proved that there is a need to develop curricula, teaching methods integrating technology and develop the primary education system (teachers, schools, and curriculum) to show an out-of-the-box vision during the artificial intelligence era.

Based on the above, the researcher suggested using a cognitive style-based chatbot to emphasize its effectiveness in enhancing the pupils' learning experiences inside and outside the classroom by developing science concepts and critical thinking skills. Therefore, the research problem is represented in the lack of development of science concepts and critical thinking skills among preparatory school pupils.

3.   Questions of the Research:

The problem of the research tackled the following main question:

"What is the effectiveness of using a cognitive style-based chatbot in developing science concepts and critical thinking skills among preparatory school pupils?"

The main question is branched into five subsequent questions as follows:

3.1. What are the science concepts required for preparatory school pupils?

3.2. What are the critical thinking skills needed for preparatory school pupils?

3.3. What is the proposed educational design of a cognitive style-based chatbot?

3.4. What is the effectiveness of using a cognitive style-based chatbot in developing science concepts among preparatory school pupils?

3.5. What is the effectiveness of using a cognitive style-based chatbot in developing critical thinking skills among preparatory school pupils?

4.   Objectives of the Research:

The research aims to achieve the following objectives:

4.1. Developing science concepts and critical thinking skills of preparatory school pupils.

4.2. Formulating an instructional design of cognitive style (tolerant/intolerant of ambiguity)-based chatbot to develop science concepts and critical thinking skills among preparatory school students.

4.3. Identifying the effectiveness of using a cognitive style (tolerant/intolerant of ambiguity)-based chatbot in developing science concepts among preparatory school students.

4.4. Identifying the effectiveness of using a cognitive style (tolerant/intolerant of ambiguity)-based chatbot in developing critical thinking skills among preparatory school students.

5.   Significance of the Research:

This research is believed to be significant for the reasons described below:

5.1. Directing the attention of those in charge of the educational process to develop innovative educational applications convenient for the different cognitive styles of students by making use of artificial intelligence technology and employing its tools in the educational process.

5.2. Developing science concepts and critical thinking skills among middle-school pupils to improve their academic achievement and performance.

5.3. Detecting new ways of learning based on a student-centered approach and providing customized learning methods to overcome individual differences among students.

5.4. Providing a new framework based on integrating artificial intelligence technology into teaching science and other subjects.

5.5. Guiding the curriculum developers to design chatbots based on different cognitive styles and integrating them into the science curricula as enrichment materials.

5.6. Providing instructional instruments and learning materials that can be used by other eighth-grade science teachers.

6. Research Variables:
The research relied on the following variables:
6.1. Independent Variable:
A cognitive style-based chatbot
6.2. Dependent Variables:
a. Science concepts
b. Critical thinking skills

7. Hypotheses of the Research
The research relied on the following hypotheses:

H.1. There would be a statistically significant difference at the level (0.05) between mean scores of the science concept achievement test in pre and post-test in favor of the post-test.

H.2. There would be no statistically significant difference at the level (0.05) between the first experimental group (ambiguity tolerant) EGA and the second experimental group (ambiguity intolerant) EGB in the post-application of science concept achievement test.

H.3. There would be a statistically significant difference at the level (0.05) between mean scores of the critical thinking skills test in pre and post-test in favor of the post-test.

H.4. There would be no statistically significant difference at the level (0.05) between the first experimental group (ambiguity tolerant) EGA and the second experimental group (ambiguity intolerant) EGB in the post-application of critical thinking skills test.

H.5. There would be an effectiveness of using a cognitive style-based chatbot in developing science concepts among preparatory school pupils.

H.6. There would be an effectiveness of using a cognitive style-based chatbot in developing critical thinking skills among preparatory school pupils.

8. Method
8.1. Participants of the Research:
The researchers randomly selected the participants from the eighth-grade pupils at HOIS (Hurghada Official International School), Red Sea Governorate, Egypt and divided (50) Participants into two experimental

groups EGA, and EGB according to their cognitive style as tolerant and intolerant of ambiguity based on their score on the Budner scale. The content covered was unit four (Humans and their places in the universe) of the eighth-grade science curriculum.

The researchers used pre-posttest procedures and compared and analyzed the participants mean scores using SPSS (Version 21) software to investigate the difference in mean scores for both experimental groups before and after applying the cognitive style-based chatbot. The cognitive style-based chatbot was built using the ADDIE Instructional Design Model and integrated into the Science Team channel within the Microsoft Team platform.

Table 1. The Distribution of the Research Sample

Group	Students (N)	Total Percentage
Experimental Group (EGA)	25	50%
Experimental Group (EGB)	25	50%
Total	50	100%

8.2. Research Design:

Descriptive approach was used in the current research to analyze literature related to the research variables, describe and build research tools, and discuss and interpret the results. The research followed the two-groups quasi-experimental design with its pre-post testing procedures. The researchers divided the participants into two experimental groups (EGA) and (EGB) as tolerant and intolerant of ambiguity based on their scores on the Budner scale. The researchers designed the cognitive style-based chatbot using the ADDIE Instructional Design Model and integrated it into the Science Team channel within the Microsoft Team platform as it is the official learning management system (LMS) used by the school administration to create the blended learning environment.

Table 2. Quasi-experimental design of the Research

Taxonomic Measurement	Groups	Pretests	Treatment	Post-tests
Budner Scale (Tolerance of ambiguity test)	Experimental Group (EGA) (Tolerant of ambiguity)	Science concepts achievement test	A cognitive style-based chatbot	1. Science concepts achievement test
	Experimental Group (EGB) (Intolerant of ambiguity)	Critical thinking skills test		2. Critical thinking skills test

8.3. Instrumentation:

The following instruments were designed and utilized by the researchers:

8.3.1. Data Collection Instrument:

The researchers prepared an online questionnaire consisting of two sections: The first section included (10 MCQ questions) to reveal the difficulties that pupils face in learning science, and the second section was open to write the pupils' comments and suggestions on how to develop science concepts and critical thinking skills. The researchers used Microsoft Forms to write the questionnaire and the Microsoft Team platform to send it.

8.3.2. Measuring Instruments:

1. Budner scale to measure the cognitive style (Tolerance/intolerance of ambiguity). The test was validated for its validity and reliability. The validity of the test was run through content validity (Jury validation) and Cronbach's Alpha statistic was applied. The value of (r) was (0.839), which indicates a high-reliability coefficient.
2. Science concepts achievement test to measure the development of science concepts related to the fourth unit (Humans and their places in the universe) of the eighth-grade science courses. The test was validated for its validity and reliability. The validity of the test was run by content validity (Jury validation) and Cronbach's Alpha statistic was used. The value of (r) was (0.961), which indicates a high-reliability coefficient.
3. Critical thinking skills test to measure four of the main critical thinking skills (evaluation of arguments, recognizing assumptions, deductions,

and inferences) included in unit four (Humans and their places in the universe) of eighth-grade science courses. The test was validated in terms of validity and reliability. The validity of the test was run by content validity (Jury validation) and Cronbach's Alpha statistic was used. The value of (r) was (0.955), which indicates a high-reliability coefficient.

8.3.3. Treatment Instrument

A chatbot based on the cognitive style (tolerance/ intolerance of ambiguity) was built using a power virtual agent app and integrated into the eighth-grade Science Team channel. Pupils could use it through their chat tap in their Microsoft Team platform or as a custom application within the Microsoft Team applications tap.

8.4. Delimitation of the Research:

- **Thematic Limitation**: Using the cognitive style-based chatbot in teaching the fourth science unit (Humans and their places in the universe) to eighth-graders.
- **Spatial Limitation:** Hurghada Official International School (HOIS), Red Sea Governorate, Egypt.
- **Time Limitation:** The research was conducted during the 4th quarter duration. (From May 1, 2022 to June 15, 2022).
- **Human Limitation:** The research sample was randomly selected from the eighth-grade pupils at HOIS School.

8.5. Data Analysis:

Statistical analysis of the collected data was applied using the Statistical Package for Social Sciences (SPSS) Version (21) to process and calculate the data by applying the following statistical styles:

1. A paired-Samples t-test to compare the mean scores for the pre- and post-applications of both critical thinking skills test and science concepts achievement test.
2. Effect size to study the effect of the independent variable (a cognitive style-based chatbot) on the dependent variables (science concepts and critical thinking skills) to find out the variation in the degrees of the dependent variables that are attributed to the effect of the independent variable. Therefore, the effect factor was extracted using Eta2 via (t) value resulting from the mean difference in critical thinking skills and science concepts achievement tests for preparatory school pupils in pre and post-tests.

3. Using the two independent samples t-test to compare the mean scores of the first experimental group (EGA) and the second experimental group (EGB).

9.   Theoretical Framework:

Artificial intelligence is one of the recent trends that influenced modern education and transformed the ways of teaching and learning methods of digital learners who have grown up in a fast-paced technological world. Therefore, the researchers confirmed that technology has successfully penetrated education systems across the world and quickly transformed the education sector making learning more accessible, attractive, and efficient.

With the help of Artificial Intelligence (AI) and its tools, teaching and learning had brought about drastic changes in the education sector. The chatbot is one of the Artificial Intelligence tools that have been used in the educational sector and has a long history as one of the essential tools of the educational process since the 1970s because it was developed within the digital learning and training environments known as Intelligent Tutoring Systems (ITS).

Moreover, Bii, P., & Too, J. (2016) defined a chatbot as computer software that simulates an intelligent human interaction language through text or speech to conduct a conversation or imitate informal chat communications between a human user and a computer using natural language, while the study by (Oudeyer, P. Y., Gottlieb, J., & Lopes, M., 2016) pointed out that chatbots are used to create curiosity by asking students challenging questions, which is the main driver of intrinsic motivation. Furthermore, Khan, R., & Anik, D. (2018) ensured that the chatbot helps respond to all human requests and is available 24 hours a day. However, the most significant advantage of chatbots is the ability to serve a large group of audiences at the same time and automate custom messages.

Furthermore, the studies by (Chen, H., VickiWidarso, G., & Sutrisno, H., 2020; Fakash, Z., 2018; and Radziwill, N., & Benton, M., 2017) have confirmed the advantages of using chatbots in education by freeing up time to work with students and making sure they understand the content. Chatbots are very interesting and entertaining educational tools that turn the course to a thread as an ongoing conversation between a teacher and his students and between a student and his classmates. Chatbots also help students learn at their own pace due to their ability to provide an individualized learning.

Therefore, the researchers suggested incorporating a chatbot based on the pupils' cognitive style as tolerant or intolerant of ambiguity to deal with the individual differences in several cognitive variables and to express preferred ways of interacting with information within the learning environment.

Budner (1962) defined ambiguity tolerance as "the tendency of students to perceive ambiguous situations as necessary". In contrast, intolerance of ambiguity has been described as "the tendency to perceive ambiguous situations as sources of threats." (p.29)

In addition, a summary of findings across studies indicated the significance of tolerance of ambiguity as a required feature of creativity, such as (Decay, J., 1989). Who confirmed that mystery is an essential trait of creativity.

Thus, the researchers summarized the differences between pupils who are tolerant and intolerant of ambiguity as follows: Tolerant of ambiguity is more flexible and open-minded than intolerant of ambiguity; They are more responsible than intolerant of ambiguity; They accept ambiguous situations and ideas while intolerant of ambiguity do not accept any new or unfamiliar situations; They have critical thinking skills while intolerant cannot think critically; They are highly motivated to seek knowledge and receive unfamiliar situations as reinforcer while intolerant of ambiguity are less motivated and perceive unfamiliar situations as threats; and they tend to choose irregular paths in their learning while intolerant of ambiguity prefer the regular paths in their learning.

From the above, the researchers emphasized the significance of the cognitive style in learning science concepts in particular, as it's the basis for building scientific knowledge and one of the most significant learning outcomes through which scientific knowledge can be acquired and given meaning. Moreover, teaching science concepts is one of the recent trends in science teaching as it helps in achieving the objectives of the scientific course. In the same context, (Mostafa, M., 2014) confirmed that "learning scientific concepts is a basic goal of school learning, and it plays an important role in highlighting the importance of scientific material for the learner, which has the greatest impact on increasing the motivation and the active participation of learners in the learning process." (p.102). Despite the crucial role of science concepts development, many studies have demonstrated the inadequacy of science concepts development such as (Gaber, G., & Hassan, A., 2001, p. 53 and Duit et al., 2001, p.295) that pointed out some of these difficulties due to two types of factors as follows:

First, the external factors are the use of inappropriate curricula and teaching strategies, the level of preparation of the science teacher, and the use of non-scientific language.

Second, the internal factors appeared as the lack of desire, motivation, tendency to learn, lack of intelligence, and the ability to discriminate and perceive information.

Furthermore, the researchers have argued that learning and developing science concepts for middle-school pupils, especially in HOIS school, is a

difficult and overwhelming task because of the pupils' different learning experiences, scientific backgrounds, and cognitive and learning styles.

Therefore, the researchers recommended the use of a cognitive style-based chatbot to help pupils to understand, develop, and apply science concepts included in their science course as well as develop the critical thinking skills required for preparatory school pupils as one of the most essential of 21ˢ century skills and considered as educational goals that must be achieved through science teaching. Science is one of the core subjects that improve critical thinking in problem solving and decision-making at the middle-school level.

A study by (Susiani, T., Salimi, M., & Hidayah, R., 2018) defined critical thinking as "the ability to think rationally, reflexively, analytically, and efficiently in judging any situation to make the appropriate decision." (p. 2). Critical thinking also includes a set of overlapping cognitive strategies and processes such as interpretation, analysis, evaluation, and conclusion with the view of performance, beliefs, evidence, proofs, concepts, and claims that are relied upon when making a judgment, solving a problem, or decision-making, taking into account the opinions of others (Khalifa, A., 2011).

There is an urgent need for critical thinking, especially with the progress, development, complexity, and high levels of life, which affected many psychological and cognitive variables among students. Moreover, global changes and technological progress directly affect education. Therefore, using these high-level thinking skills enables students to examine information and make logical decisions because of its several benefits such as preparing students for college, future careers, and life success (Stobaugh, R., 2013).

10. Findings and Discussions:

The researchers utilized two instruments (Science concepts and critical thinking skills tests) to test the researchers' hypotheses. The following results were obtained and analyzed using SPSS statistical software version (21) as follows:

H.1. There would be a statistically significant difference at the level (0.05) between the mean scores of the science concepts achievement test in pre and post-test in favor of the post-test. To validate the first research hypothesis, a paired Sample t-test was used as shown in the following table.

Table 3. Paired Sample Statistics of Science Concepts Achievement Test

| Application | Mean | Std. Deviation | Earning | | (t) Value | df | Sig. | Eta^2 |
			Mean	Std. Deviation				
Pre	24.18	1.837	33.920	2.784	86.165	49	0.000	0.993
Post	58.10	1.619						

The above table indicates that the post-test scores are higher than the pretest scores. Therefore, there is a development in the pupils' science concepts after the implementation of the cognitive style-based chatbot.

H.2. There would be no statistically significant difference at the level (0.05) between the first experimental group (ambiguity tolerant) and the second experimental group (ambiguity intolerant) in the post-application of the science concepts achievement test. To validate the Second research hypothesis, the independent sample t-test was used as shown in the following table.

Table 4. Independent Sample T-Test of Science Concepts Achievement Test

| Application | Mean | Std. Deviation | Earning | | (t) value | Sig | df |
			Mean	Std. Deviation			
Experimental (1) Tolerant of ambiguity (EGA)	58.32	1.600	0.44	2.123	0.960	0.342	48
Experimental (2) Intolerant of ambiguity (EGB)	57.88	1.641					

The table shows the t-test value between the mean scores (0.960), which has no significance at the level (0.05). Since the calculated significance is equal to (0.342) and more than (0.05), this means that the null hypothesis and the second research hypothesis are accepted.

H.3. There would be a statistically significant difference at the level (0.05) between the mean scores of the critical thinking skills test in pre and post-test in favor of the post-test. To validate the third research hypothesis, a paired sample t-test was used as shown in the following table:

Table 5.Paired Sample T-Test of Critical Thinking Skills Test

| Application | Mean | Std. Deviation | Earning | | (t) | df | Sig. | Eta^2 |
			Mean	Std. Deviation				
Pre	20.60	1.512	27.060	1.570	121.854	49	0.000	0.997
Post	47.66	0.982						

Table No. (5) shows the value of the t-test between the mean scores (121.854), which is significant at the level (0.05). Since the calculated significance is equal to (0.000) and is less than (0.05), this means rejecting the null hypothesis and accepting the third research hypothesis. In addition, the value of Eta^2 was (0.997) which indicates the positive effect of using chatbots in developing critical thinking skills for preparatory school pupils.

H.4. There would be no statistically significant differences at the level (0.05) between the first experimental group (ambiguity tolerant) and the second experimental group (ambiguity intolerant) in the post-application of the critical thinking skills test. To validate the fourth research hypothesis, an independent sample t-test was used as shown in the following table.

Table 6. An Independent Sample T-Test of Critical Thinking Skills Test

| Application | Mean | Std. Deviation | Earning | | (t) | Sig | df |
			Mean	Std. Deviation			
Experimental (EGA) Tolerant of ambiguity	47.84	0.898	0.36	2.543	1.306	0.198	48
Experimental (EGB) Intolerant of ambiguity	47.48	1.046					

Table No. (6) shows the value of the t-test between the mean scores (1.306), which has no significance at the level (0.05). Since the calculated significance is equal to (0.198) which is more than (0.05), this means that the null hypothesis and the fourth research hypothesis are accepted. From the above results, it is worth noting that the use of a cognitive style-based chatbot had a positive effect on the development of critical thinking skills for both groups regardless of their cognitive style as tolerant or intolerant of ambiguity.

H.5. There would be an effectiveness of using a cognitive style-based chatbot in developing science concepts among preparatory school pupils. To validate

the fifth research hypothesis, the black-adjusted gain ratio for mean scores of the science concepts achievement test was calculated as shown in the table below:

Table 7. Value of the Black-Adjusted Gain Ratio Between Pre- and Post-Application of Science Concepts Achievement Test

Mean Scores of Pre-test	Mean Scores of Post-test	Total Grade	Black Adjusted Gain Ratio	Significance
24.18	58.10	70	1.916	Accepted

Table NO. (7) above shows that the value of the black-adjusted gain ratio between pre- and post-application of the science concepts achievement test reached (1.916), which is higher than (1.2). This indicates the high effectiveness of using the cognitive style-based chatbot in developing science concepts among preparatory school pupils.

H.6. There would be the effectiveness of using a cognitive style-based chatbot in developing critical thinking skills among preparatory school pupils. To validate the sixth research hypothesis, the black-adjusted gain ratio for the mean scores of pre- and post-application of critical thinking skills test was calculated to determine the effectiveness of using a cognitive style-based chatbot in developing critical thinking skills among preparatory school pupils as shown in the following table.

Table 8. Value of the Black-Adjusted Gain Ratio Between Pre and Post-application of Critical Thinking Skills Test

Mean Scores of Pre-test	Mean Scores of Post-test	Total Grade	Black Adjusted Gain Ratio	Significance
20.60	47.66	52	2.174	Accepted

The above table shows that the value of the black-adjusted gain ratio between pre- and post-application of the critical thinking skills test reached (2.174), which is higher than (1.2). This indicates high effectiveness of using the cognitive style-based chatbot in developing critical thinking skills among preparatory school pupils.

Discussion

The research examined the independent variable (a cognitive style-based chatbot) to identify its effect on dependent variables (science concepts and critical thinking skills). The results obtained from the experiment revealed high effectiveness of using the cognitive style-based chatbot in developing science concepts and critical thinking skills. The current research led to the following findings:

- The proposed cognitive style-based chatbot has proven its effectiveness in developing science concepts and critical thinking skills for eighth-grade pupils at HOIS school.
- The feedback from the participants was positive through their comments and participation as they felt comfortable and motivated to interact with the chatbot in a supportive atmosphere so that they could develop their science concepts and critical thinking skills that were aroused from unit four (Humans and their place in the universe) for the eighth grade.

These findings agree with several studies such as (Yin, J., Goh, T., Yang, B., & Xiaobin, Y., 2020; Sumutny, P., & Schreiberova, P., 2020; Sandu, N., & Gide, E., 2019; and Winkler, R., & Söllner, M., 2018) which confirmed the positive impact of using chatbots to enhance teaching and learning processes in the education sector.

On the other hand, the current research differs from other studies because it is based on creating a chatbot based on the pupils' cognitive style as tolerant or intolerant of ambiguity and it is applied in the fourth learning unit (Humans and their place in the universe) from the eighth-grade science curriculum. Accordingly, the proposed chatbot provided accurate answers to all FAQ questions related to the eighth-grade science course. Pupils were encouraged to participate and engage in their own learning process so that they could develop their science concepts as well as their critical thinking skills.

Conclusion

Based on the research findings, implementing a cognitive style-based chatbot in learning science courses can lead to the development of the science concepts as well as critical thinking skills of preparatory school pupils because the chatbot provided an opportunity for the pupils to be engaged and immersed in their own learning process and provided more practice to retain knowledge. In conclusion, the use of chatbots in learning science has improved pupils' achievement and performance. Based on the above results and relevant literature, the researchers confirmed the effectiveness of using a cognitive style-based chatbot in developing science concepts and critical thinking skills among preparatory school pupils as follows:

A. Chatbots can be used to increase curiosity by asking pupils challenging questions, which is one way to develop critical thinking skills.
B. Chatbots can help pupils organize their own learning process by working at their own pace.
C. Chatbots can be a knowledge resource that supports learning in the classroom by changing the educational environment to one that is student-centered and this has been confirmed by constructivist theory.

D. Chatbots Provide an effective means of collaboration and communication with pupils through conversations and chatting. They provide them with accurate scientific information and answers to questions that hinder their understanding according to communication theory.

E. Chatbots provide immediate feedback and individually lead pupils in their own learning process, in line with learning style theory.

F. Chatbots increase the pupils' motivation to learn and enhance their self-awareness in line with a motivation theory.

G. Chatbots make pupils more engaged and immersed in their learning process inside and outside the classroom.

H. Chatbots address individual differences of pupils by providing personalized learning.

Moreover, the Implications of the research can be beneficial to various stakeholders as follows:

1. Curriculum designers and developers can integrate chatbots as a supportive educational tool in Egyptian educational institutions as part of their educational processes in learning science and other subjects to overcome individual differences among preparatory school pupils and positively influence pupils' achievement and performances; Holding workshops to train teachers on the use of technological tools and artificial intelligence tools in particular; Shedding light on the development of critical thinking skills as one of the most important skills of 21st century, especially in teaching science curricula.

2. Science teachers are advised to consider the use of chatbots to support their teaching process and enhance the learning of their pupils; incorporating different technological tools into their teaching methodology, and selecting effective methods for interacting with their pupils and their science content.

3. Learners: Participants of the experiment showed their satisfaction with using the chatbot in learning science as described in the chatbot analytics and the feedback of eighth-graders. Thus, the implementation of chatbots in learning different topics can improve the pupils' learning experience.

4. Theory: The proposed framework can be added to the literature on designing science courses. Therefore, it can be used as a basis for further studies in the field of curricula and methodology. The results of the research highlighted several recommendations, including

5. Providing science teachers with professional development in terms of using technology and integrating artificial intelligence tools in teaching methodology.

6. Integrating chatbots based on learners' different cognitive styles to enhance their learning process.
7. Integrating various technological tools to develop critical thinking skills as one of the most important 21st-century skills required for the digital natives.
8. Integrating chatbots into different educational systems in national learning as well as international curricula.

References:

1. Abbasi. S., & Kazi. H. (2014). Measuring Effectiveness of Learning Chatbot Systems on Student's Learning Outcome and Memory Retention. *Asian Journal of Applied Science and Engineering*. 3(7): 57-66. DOI: 10.15590/ajase/2014/v3i7/53576.
2. Abowazna, F., & Abogaber, M., (2017). The effect of using integrated educational games in teaching science on developing critical thinking skills for eighth grade female students in Jordan. *Jordanian Journal of Educational Sciences*. 2(1). 78- 113.
3. Abuzied, A. H., & Mohamed, A. (2019). Efficacy of gamification to increase the scientific concepts acquisition in science learning and creative problem-solving skills for second preparatory grade students. *Egyptian Journal of Science Education*, *22*(3), 93-132.
4. Al–Harahsheh, K. (2019). The Effect of Web Quests Strategy in Science Teaching on Scientific Concepts Acquisition and Developing Creative Thinking Skills Among the Primary Stage Students in Jordan. *Educational Journal. Kuwait University*. 33 (130). 265-303.
5. Al–Harahsheh, K. (2019). The effectiveness of using flipped learning in science teaching in acquiring scientific concepts and basic science processes for eighth grade students in Jordan. *Educational Journal. University of Jourdan*. 46 (4). 206-221.
6. Bii, P., & Too, J. (2016). What Will Be in Those Laptops: Empowering Students and Teachers to Add Content to an Educational Chatbot's Knowledge Base. *Universal Journal of Educational Research*, *4*(5). 941-948.
7. Chen, H., VickiWidarso, G., & Sutrisno, H. (2020). A chatbot for learning Chinese: Learning achievement and technology acceptance. *Journal of Educational Computing Research*, 58(6), 1161–1189. https://doi.org/10.1177/0735633120929622
8. Decay, J. (1989). *Fundamentals of Creative Thinking Lexington*. MA, Lexington books.
9. Duit, R., et al. (2001). Fostering conceptual change by Analogies between Scylla and Charybdis. Learning & Instruction. (11). 283-303.

10. Elajmi, S. (2018). The effect of using flipped learning in developing scientific concepts in science for middle school students. *Journal of Educational Sciences*. 62 (2). 105-150.

11. Elkebeby, A. (2019). The effect of teaching science using roundhouse chart on the acquisition of scientific concepts and the development of visual thinking skills among students of sixth grade in Abha Saudi Arabia. *Journal of Educational and Psychological Sciences*. 3(1). 15-46.

12. Fakash, Z. (2018). *Chatbot for University: Four Challenges Facing Higher Education and How Chatbots can solve them?* Retrieved from: https://chatbotslife.com/chatbot-for-university-4-challenges-facinghigher-education-and-how-chatbots-can-solve-them-90f9dcb34822. On:1/4/2022.

13. Fryer, L., et al. (2017). Stimulating and sustaining interest in a language course: An experimental comparison of chatbot and human task partners. *Computer in Human Behavior*. 75 (1). 461-468.

14. Gaber, G., & Hassan, A., (2001). *Critical Thinking - A project to develop thinking styles among students in pre-university education. Arab League Educational, Cultural and Scientific Organization.* Cairo. National Center for Examination and Educational Assessment.

15. Ismaeel, D., & Al Mulhim, E. (2019). Influence of Augmented Reality on the Achievement and Attitudes of Ambiguity Tolerant/Intolerant Students. *International Education Studies*, 12(3). 59-70.

16. Karsenti, T. (2019). Artificial intelligence in education: the urgent need to prepare teachers for tomorrow's schools. *Formation et profession*, *27* (1), 112-116.

17. Khalifa, A. (2011). The effect of teaching science using the directed discovery approach in the laboratory on academic achievement on a sample of sixth graders of primary school in Tabuk city schools. *Journal of Damascus University*. 27(3-4). 923-952.

18. Khalil, E. (2020). Critical Thinking-Based Learning: Developments, Trends, and Values. *Arab Journal of Educational and Psychological Sciences*, 4(17). 575-592.

19. Khan, R., & Anik, D. (2018). *Build Better Chatbots. A complete guide to getting started with chatbots*. USA. Apress. ISBN-13: 978-1484231104.

20. Kowalski. S., Pavlovska. K., & Goldstein, M. (2013). Two Case Studies in Using Chatbots for Security Training. In: Dodge R., & Futcher, L., (eds) *Information Assurance and Security Education and Training*. WISE 2009. IFIP

21. Kusi, C. (2017). *Teaching Science Preparation of student teachers to teach science at the junior high school: A study of one teacher college of education in Ashanti Region, Ghana* (Master's thesis).

22. Mostafa, M. (2014). The importance of scientific concepts in science teaching and the difficulties of learning them. *Journal of Social Studies and Research*. South Valley University. (8). 88-108.

23. Oudeyer, P. Y., Gottlieb, J., & Lopes, M. (2016). Intrinsic motivation, curiosity, and learning: Theory and applications in educational technologies. *Progress in brain research*, *229*, 257-284.

24. Radziwill, N., & Benton, M. (2017). Evaluation Quality of Chatbots and Intelligent Conversational Agents. *Computing Research Repository* (CORR). 1-21.

25. Roos, S. (2018). *Chatbots in education: A passing trend or a valuable pedagogical tool?* Uppsala University. Retrieved from: http://www.diva-portal.org/smash/get/diva2:1223692/FULLTEXT01.pdf. On:14/4/2022.

26. Sandu, N., & Gide, E. (2019). Adoption of AI-Chatbots to enhance student learning experience in higher education in India. In *2019 18th International Conference on Information Technology Based Higher Education and Training (ITHET)* (1-5). IEEE.

27. Stanley Budner, N. Y. (1962). Intolerance of ambiguity as a personality variable 1. *Journal of personality*, *30*(1), 29-50.

28. Stobaugh, R. (2013). *Assessing critical thinking in middle and high schools: Meeting the Common Core*. Routledge.

29. Sumutny, P., & Schreiberova, P. (2020). Chatbots for learning: A review of educational chatbots for the Facebook Messenger. *Computers & Education*. 151. 1-11. https://doi.org/10.1016/j.compedu.2020.103862.

30. Susiani, T., Salimi, M., & Hidayah, R. (2018). Research Based Learning (RBL): How to Improve Critical Thinking Skills? In *SHS Web of Conferences* (42). 00042. EDP Sciences. (406). Springer, Berlin, Heidelberg

31. Winkler, R., & Söllner, M. (2018). Unleashing the potential of chatbots in education: A state-of-the-art analysis. *Academy of Management Annual Meeting Proceedings*. DOI: 10.5465/AMBPP.2018.15903abstract.

32. Yang, D., & Baldwin, S. (2020). Using technology to support student learning in an integrated STEM learning environment. *International Journal of Technology in Education and Science, 4*(1), 1-11. Retrieved from: https://doi.org/10.46328/ijtes.v4i1.22. on: 14/4/2020.

33. Yin, J., Goh, T., Yang, B., & Xiaobin, Y. (2020). Conversation technology with micro-learning: The impact of chatbot-based learning on students' learning motivation

34. Radziwill, N., & Benton, M. (2017). Evaluation Quality of Chatbots and Intelligent Conversational Agents. *Computing Research Repository* (CORR). 1-21.

35. References of the published journal V2

36. Roos, S. (2018). *Chatbots in education: A passing trend or a valuable pedagogical tool?* Uppsala University. Retrieved from:

37. http://www.diva-portal.org/smash/get/diva2:1223692/FULLTEXT01.pdf

38. Sandu, N., & Gide, E. (2019). Adoption of AI-Chatbots to enhance student learning experience in higher education in India. In *2019 18th International Conference on Information Technology Based Higher Education and Training (ITHET)* (1-5). IEEE.

39. Snyder, L., & Snyder, M. (2008). Teaching Critical Thinking and Problem-Solving Skills. *The Delta Pi Epsilon Journal*, 1 (2). 90 – 99.

40. Stobaugh, R. (2013). *Assessing critical thinking in middle and high schools: Meeting the Common Core*. Routledge.

41. Sumutny, P., & Schreiberova, P. (2020). Chatbots for learning: A review of educational chatbots for the Facebook Messenger. *Computers & Education*. 151. 1-11. https://doi.org/10.1016/j.compedu.2020.103862.

42. Susiani, T., Salimi, M., & Hidayah, R. (2018). Research Based Learning (RBL): How to Improve Critical Thinking Skills? In *SHS Web of Conferences* (42). 00042. EDP Sciences. (406). Springer, Berlin, Heidelberg

43. Yang, D., & Baldwin, S. (2020). Using technology to support student learning in an integrated STEM learning environment. *International Journal of Technology in Education and Science, 4*(1), 1-11. Retrieved from: https://doi.org/10.46328/ijtes.v4i1.22. on: 14/4/2020.

44. Yin, J., Goh, T., Yang, B., & Xiaobin, Y. (2020). Conversation technology with micro-learning: The impact of chatbot-based learning on students' learning motivation and performance. *Journal of Educational Computing Research*, 59(1), 154–177. https://doi.org/10.1177/0735633120952067.

45. https://www.educba.com/artificial-intelligence-technology/

Travel Motivations of Educational Tourists Arriving in Georgia

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Abstract

Over the years, researchers have empirically studied the determinants of travel motivation and taken into account the diverse approaches and perspectives of travel motivation. The dynamic nature of travel motivation has led to a wide range of research in this area. Decisions made by tourists that are reflected in their travel behavior are essential for the tourism industry to maintain or improve the status quo. The paper aimed to identify the motivational factors that determine the decisions of educational tourists through quantitative research. According to the existing studies, significant travel motivations were identified and a survey was conducted with international students who choose Georgia as the destination for their studies at accredited higher educational institutions. The research has revealed that for international students, arriving in Georgia for educational purposes, the field of medicine is the first choice of interest. Educational tourists choose Georgia for the following main reasons: security and political stability, the cost of learning and living, quality, and duration of the study.

Keywords: Educational tourism, travel motivations, COVID-19

Introduction

Tourism is one of the fastest-growing economic sectors in the world. Tourism is a major economic force in many countries. There are various types and forms of tourism. However, despite its economic strength, tourism remains the most vulnerable sector to internal and external crises. The desire

to visit unfamiliar places pushes people to travel to new destinations and motivates them to visit new attractions. The knowledge of travel behavior can facilitate marketing and product planning and development, which can increase the number of travel products and visitors. Tourists attach more importance to new ways of exploring different tourist destinations. Therefore, learning opportunities increase significantly. Consequently, the motivations that influence travelers to make decisions change. Over the past decade, many tourist destinations have been in crisis, ranging from natural disasters, man-made incidents, terrorist attacks, and health crises to natural disasters. Nevertheless, after such a crisis, the tourism industry was still able to recover. Tourism has an incomparable potential for resilience. However, the world is now in an unprecedented crisis. The risk posed by the Covid-19 pandemic is not localized but is general and international. The pandemic has had an unprecedented impact on the mobility of people around the world. Therefore, it has affected the field of educational tourism.

Literature Review

The knowledge of travel behavior can facilitate marketing and product planning and development, which can increase the number of travel products and visitors. The concept of motivation is derived from the word 'motive', which means to take action (Dann, 1977). Behind any human action, there is a motive that compels the human to act in a way that ensures the fulfillment of a specific need. In tourism motivation studies, the tourist is the main subject and each traveler is as different from others as are the factors that motivate them. The overall motivation of tourists is influenced by many factors when it comes to decision-making. Studies have classified both intrinsic (psychological carriers) and external (destination-related) motivations (P.S. 2020).

Dann's push and pull theory introduced a structural basis for tourism literature. (Dann, 1977) Dann grouped two factors that affect tourism motivation - the Push and Pull factors. According to Dann, push factors are what motivate tourists to travel. Push factors are the most important internal factors that create a need or desire to travel. Pull factor theory explains the specific reasons for choosing a destination that is related to ego-enhancement. Pull factor theory is more associated with external factors that attract visitors to a destination, such as travel with prestige, self-awareness, and so on. Whereas, the TCL (Travel Career Ladder) theory has attracted attention from the very beginning due to some criticisms and limitations of inconsistency. The theory focused more on the term "ladder" and that term was indefinite. (Pearce, 2005) Pierce and Lee revised their existing theory of motivation intending to introduce more diverse and empirical motivation patterns. TCL theory focused on travel motivation analysis for specific purposes. Travel

Career Patterns TCP (Travel Career Patterns) emphasizes a more complete understanding of travel motivation patterns. Researchers Pierce and Lee have established career patterns in travel with some modifications to TCL theory. According to TCP theory, travel motivation can be defined as a set of patterns and it will be a combination of different motivational factors as a result of past travel experiences and age group influences. (Pearce, 2005)

Tourists are exposed to certain behaviors before, during, and after the trip. This is conceptualized as a travel behavior. This behavior is a direct result of the interaction between certain personal and environmental variables. Thus, travel behavior can be defined as the behavior of tourists towards a certain product. Depending on their attitudes and product use, various researchers have identified factors influencing tourist travel behavior, such as motivated tourist travel variables, tourist attitudes, various situational factors, and environmental factors that influence tourists' importance. According to March and Woodside, travel motivations can be considered one of the most important psychological influences on tourist behavior. Motivations are a person's inner state, or certain human needs and desires, that compel them to act or behave in a particular way and thus maintain human behavior and the energy level of the human body. (Gross, 2007)

In the pre-pandemic period, tourism was one of the fastest-growing economic sectors and the main source of employment in the world. The travel and tourism sector grew by 3.5% in 2019, contributing 8.9 trillion $ to the world GDP, 330 million jobs, and $ 1.7 trillion in visitor revenue. Given the preliminary data on COVID-19, countries need to resume tourism as it has undoubtedly contributed to revenue generation, regional development, and a better life for the community associated with it. Experts predict that it will take about 10 to 35 months for the tourism and hospitality business to recover. Several studies have attempted to study the impact of COVID-19 on travel and tourism, tourism prospects for future travel, and future tourism behavior. There are positive signs in most of the studies on post- COVID-19 tourism, which shows that tourism will never decline permanently and is expected to revive again as people will never stop moving. (Wachyuni, 2020)

Motivational factors that respond to travel-influenced situations such as family, economy, interests, health, and experience change over time. The fears created by the COVID-19 pandemic significantly overestimated the trust, perception, and motivation of people who stopped mobility and, therefore, had a major impact on tourism revenues. The created situation has been described by experts as the worst crisis and has been compared to World War II (Ulak, 2020).

Universities are adopting internationalization strategies, enabling them to attract and hire international students and increase their market share. Felix and Steve identified the pull and push factor framework, which shows that

factors of attraction from the perspective of the host country include: easy acceptance, international recognition, and a safe environment; in terms of the institute, withdrawal factors include course availability, experience, cost of living, accommodation, and prospects for future employment in the labor market. At the same time, the pushing force behind the economic, political, and host country opportunities depends on friends, family, private agencies, media, and the WOM, as noted by the researchers Felix and Steve. (Maringe, 2007)

Naturally, the pandemic has affected the motivations of tourists in general, as well as the attitudes of educational tourists. Extensive research has not yet been conducted into what will be the main driving factors behind the pandemic travel, including the desire of those traveling abroad to study. Likely, the popularity of the countries with the highest rates of vaccinated population will emerge.

Methods

Since the COVID-19 pandemic is still an ongoing crisis, literature and research on this topic are still limited. Several researchers have studied the impact of the COVID-19 pandemic on tourism in general, and studies are underway to explore general perspectives on the coronavirus epidemic for travel and the future of tourism. A small-scale quantitative study was conducted with a general overview of the findings. As it is widely known, quantitative research is one of the main techniques for obtaining data on social events and, consequently, it is the main method of social science. (Tsuladze, 2008) This study describes the current situation using a quantitative approach. A non-random sampling type was used for the study to select foreign students in Georgia studying at one of the accredited higher educational institutions. To do this, a chain-referral selection process was used, namely the snowball principle - because it is a method of determining a selective set from numerically small groups. (Tsuladze, 2008) The snowball principle helped the study to have easy access to target groups — in this case, international students. Through the connections of professors and lecturers, a questionnaire was sent to foreign students, who were studying in Georgia.

The survey tool was developed after reviewing the literature to determine the defining attributes of travel motivation based on popular motivation theories. The questions asked were different: an open-ended question aimed to enable participants to openly express their motivations and aspirations. In addition, closed-ended questions of various choices as well as scaled questions were created.

Results

The questionnaire was sent to the respondents between December 2021 and January 2022. The survey was conducted online and a link to the survey was posted and shared through various social platforms. Students were asked to voluntarily participate in the study at an appropriate time. As it is well known, such a friendly approach increases response speed and data quality. (Bronner, 2007) Overall, the research link was active for about two months.

Approximately 150 international students, who were studying in Georgia during the research, took part in the quantitative research. The age of the majority of respondents was 18-26 years. (Diagram 1) Among them, 61% were male and 39% were female. (Diagram 2)

Diagram 1- Age of participants
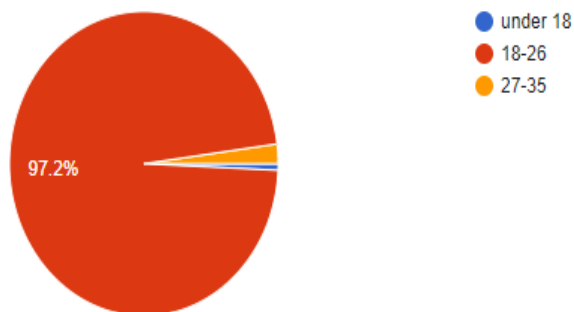
Source: Author's research

Diagram 2 – Gender of participants
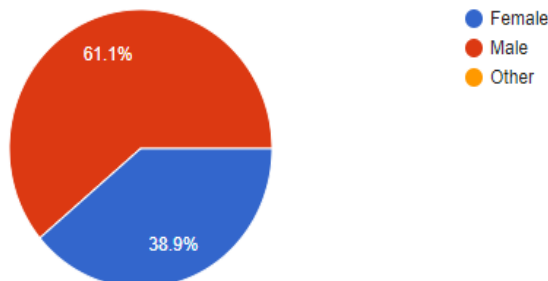
Source: Author's research

The vast majority of the educational tourists participating in the study were undergraduate students. It was interesting to find out which country the respondents were from and it turned out that most of them were from Angola, India, Jamaica, Nigeria, and Jordan.

The students participating in the survey studied at different accredited higher educational institutions in Georgia: Batumi Shota Rustaveli State University, Grigol Robakidze University, European University, Teaching University "Geomedi"

For international students, as it has been revealed, medicine is a major subject of their study interest, namely:

- Dermatology;
- Cardiology;
- Dentistry;
- Neurosurgery;
- Pediatrics;
- Gynecology;
- Orthopedics;
- Surgery;
- Ophthalmology;
- Oncology;
- Pharmacology;
- Endocrinology.

Based on the results of previous surveys, popular motivational factors were identified and respondents were asked to rate on a 5-point scale the reasons why they have chosen the country for their studies. Respondents were asked to select 1 point for the least important reason and 5 points for the most important reason from the listed factors. The results revealed that the majority of respondents prioritize security and political stability. (5 points) Almost equal, 4-point grades were given to the cost of teaching, quality, and environmental conditions. Respondents considered the cost of living relatively less important scoring it 3 points. 2 points were assigned to the availability of laboratories and research instruments, and the proximity to the homeland - 1 point.

The results were ranked according to which, the priorities were sorted by percentage (Chart 1)

Chart 1- Respondents' priority factors when choosing a destination to study abroad

Priority factors for traveling to learn

Factor	Percentage
SAFETY AND POLITICAL STABILITY	42.40%
THE COST OF LEARNING	31.30%
THE COST OF LIVING	29.20%
QUALITY OF TEACHING	28.50%
GEOGRAPHICAL LOCATION CLOSE TO HOMELAND	26.40%
ENVIRONMENTAL CONDITIONS (CLIMATE, WEATHER, LANDSCAPE)	25.70%
AVAILABILITY OF LABORATORIES AND RESEARCH INSTRUMENTS	25.70%
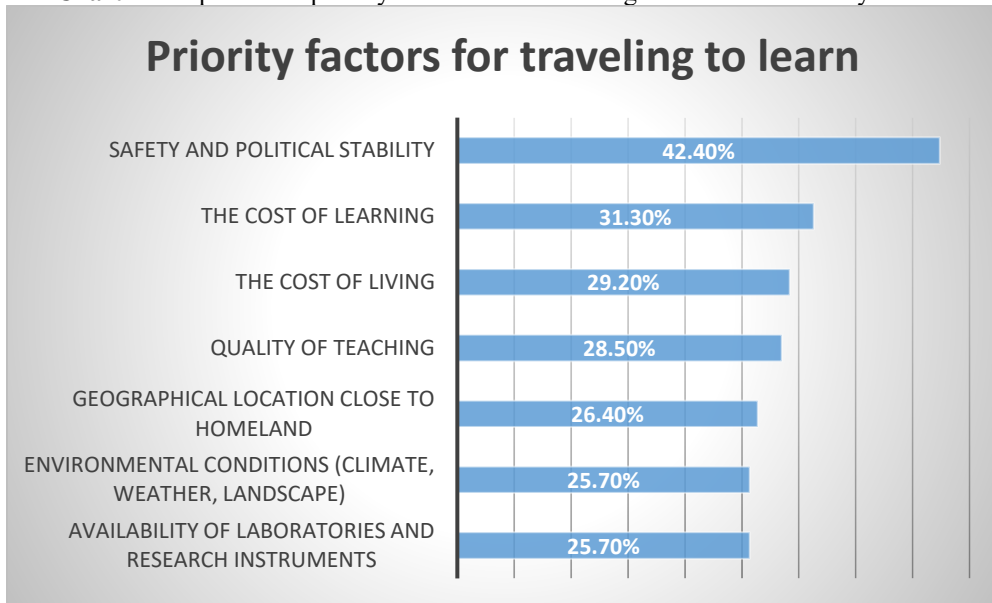
Source: Author's research

It was also interesting to see what other personal motivations international students travel with. Most of the following factors were identified:

- Desire to live independently;
- Exploring new places;
- The interest of different cultures;
- Save money;
- Accelerated learning process;
- Communication in a foreign language;
- New experience;
- Better learning system;
- Security;
- International experience;
- Acquisition of new interests and hobbies;
- New environment;

The purpose of the research, the task at the same time, was to identify the main personal reasons for educational students, why leave their home country to study elsewhere. Based on previous studies, a list of reasons was included in the questionnaire and it was found that the most important factor for international students is the ability to easily enroll in a foreign university rather than in their own country. (68.1%) Respondents also prioritized better

career opportunities when they return to their home country. (45.8%). The availability of English language programs was identified as another important factor for them. (34.7%) The hospitality of the host country also turned out to be one of the reasons for choosing the destination for educational purposes. . (25.7%) Another reason for international students traveling to study abroad was found to be the lack of a specific program in their own country. (14.6%) (Chart 2) Students also selected the reputation of the university as one of the factors. (13.2%). (Chart 2) The survey also revealed other, relatively less important reasons:

- Self-development;
- Tuition fees;
- Job opportunities;
- Duration of studying period.

Chart 2 – The reason for international students traveling to study abroad
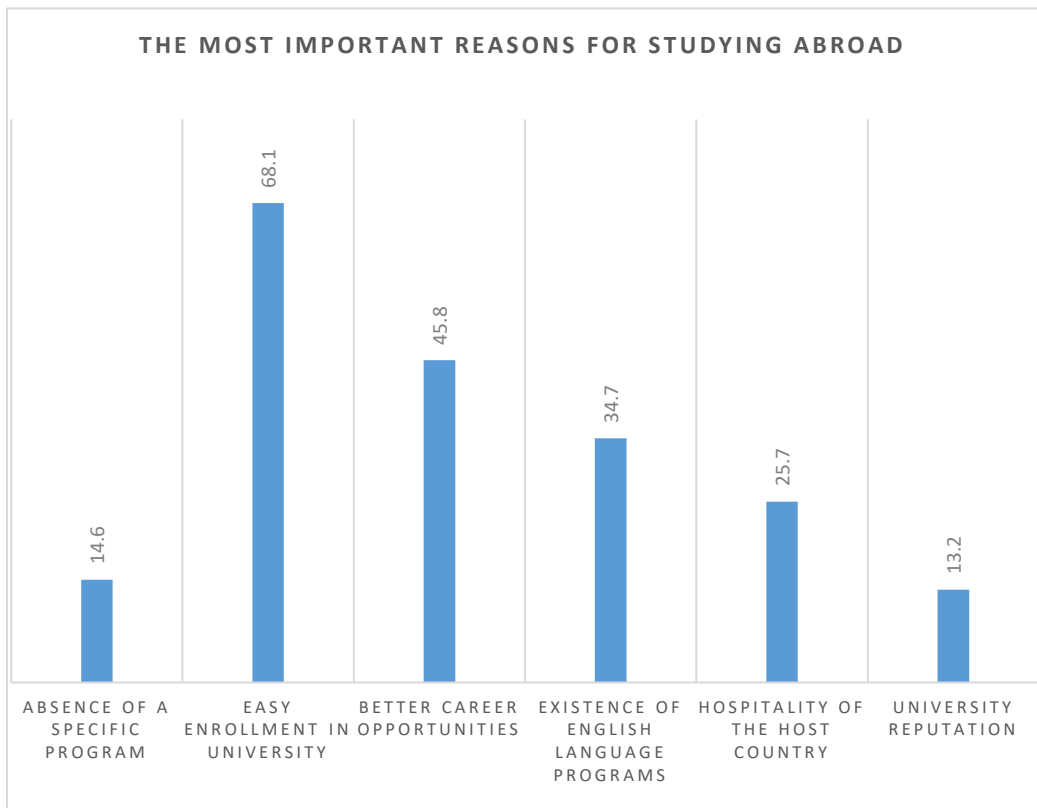
Source: Author's research

Since the study was conducted during the Covid-19 Pandemic, the last question enquired whether the pandemic was a deterrent to educational students. Part of the respondents said it was not a deterrent factor for the - 44.4%, partly the pandemic affected the education of students in 24.3% of the

cases and the pandemic was found to be a hindering factor for 31.1% (Diagram 3).

Diagram 3 – Covid-19 impact on educational students' decision

Was the pandemic a deterrent factor to you from studying abroad?

144 responses
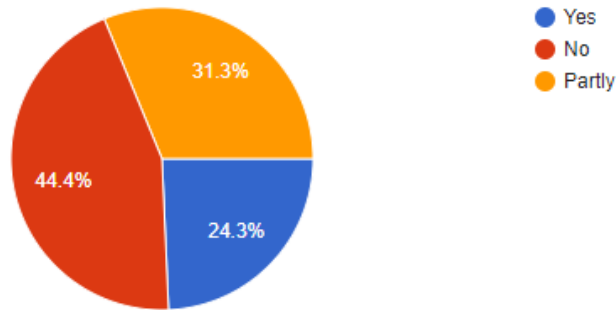
Source: Author's research

The tourism sector has been affected by the global pandemic situation, especially during the lockdown periods. Nevertheless, there are signs of improvement in the educational tourism sector and a full resurgence should be expected once the current situation will have eventually normalized (Bunghez, 2022).

Discussion

Through the existing research results, it can be judged that the motivation for educational tourism is growing every year with the growth of the popularity of educational tourism. More and more people want to get an education in prestigious educational institutions, do special courses or get internships abroad to raise their intellectual and educational levels. It is especially important that on such a tour there is an opportunity for rest and study. It is a common practice nowadays to send children and teenagers abroad for holidays with the purpose to master the language and, at the same time, have a nice vacation. Recent trends also show that the global education market is expected to grow even more. Europe is also anticipated to exhibit the highest growth rate over the forecast period 2022-2028 (MarketWatch 2022).

Educational tourism is a specific niche of tourism. The market segment of educational tourism is significantly smaller compared to the segments of mass tourism. Thus, educational tourism offers a wide range of products and services related to academic research, skills acquisition, school excursions, sports training, career development courses, language courses, and much

more. Consequently, the motivations of travelers who want to get some kind of education outside their country vary.

With the available results, the following can be agreed upon: It is interesting for international students arriving in Georgia at this stage to receive education, mainly in the field of medicine. Educational tourists choose Georgia for the following main reasons:

1) security and political stability;
2) the cost of learning and living;
3) quality and duration of studies.

The results revealed that the personal motivation of international students to study abroad includes the following:

➢ the desire for independent living, exploring new places
➢ interest in different cultures
➢ saving money
➢ accelerated learning process
➢ means of communication in a foreign language
➢ new experience
➢ better learning system
➢ security
➢ international experience
➢ acquisition of new interests and hobbies
➢ new environment.

Most of the international students visiting Georgia are from Asia and Africa, and for most respondents, the pandemic did not prove to be a deterrent to travel education. Moreover, they believe that Georgia is a safe and secure country for educational travelers.

Conclusion

This research provides evidence that is consistent with the existing literature on the motivations of educational tourists. Students travel outside of their own country, which is a unique opportunity to learn about other nationalities in a multicultural atmosphere. In addition to the widely recognized benefits of travel, educational travel enhances the skills that are specially developed as a result of this activity. The survey revealed that international students have various motivations when choosing a country to study abroad and that has to be considered by universities and other interested parties in educational tourism. Universities have to create a competitive environment to attract more educational tourists. The results of the study will

be interesting for individuals or organizations working in the field of education and tourism in Georgia. The findings clearly show which directions of educational tourism should be improved and developed in Georgia.

Future researchers need to find out how to develop and popularize strategies that will attract international students. Educational tourists have different expectations and needs, further research should help related industries and policymakers to develop a thorough understanding of the expectations of these different tourist groups to formulate their strategies.

References

1. Bronner, F., & Kuijlen, T. (2007). The live or digital interviewer - A comparison between Casi, capi and Cati with respect to differences in response behaviour. International Journal of Market Research, 49(2), 167–190. https://doi.org/10.1177/147078530704900204
2. BUNGHEZ, C. (2022)," Educational Tourism: Erasmus Case Study", Journal of e-Learning and Higher Education, Vol. 2022 (2022), Article ID 498617, DOI: 10.5171/2022.498617
3. Dann, G. M. S. (1977). Anomie, ego-enhancement and tourism. Annals of Tourism Research, 4(4), 184–194. https://doi.org/10.1016/0160-7383(77)90037-8
4. Gross, M. J. (2007). Tourism behaviour: Travelers' decisions and actions by Roger S. G. March and Arch G. Woodside, Cabi Publishing, Wallingford, Oxon, UK, 2005. no. of pages: VII + 280 including index. ISBN 0-85199-021-5. International Journal of Tourism Research, 9(5). https://doi.org/10.1002/jtr.625
5. MarketWatch. (2022, May 26). *Educational tourism market industry growth analysis with size, share and forecast 2022-2030.* MarketWatch. Retrieved May 31, 2022, from https://www.marketwatch.com/press-release/educational-tourism-market-industry-growth-analysis-with-size-share-and-forecast-2022-2030-2022-05-26?mod=search_headline
6. Maringe, F., & Carter, S. (2007). International students' motivations for studying in UK he. International Journal of Educational Management, 21(6), 459–475. https://doi.org/10.1108/09513540710780000
7. P.S, D. S., Das O.P, A., & Ashraf. B.A, M. (2020, December 16). Changing paradigms of travel motivations post covid- 19. SSRN. Retrieved May 11, 2022, from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3747526
8. Pearce, P. L., & Lee, U.-I. (2005). Developing the travel career approach to tourist motivation. Journal of Travel Research, 43(3), 226–237. https://doi.org/10.1177/0047287504272020

9. Ulak, N. (2020). A preliminary study of novel coronavirus disease (covid-19) outbreak: A pandemic leading crisis in tourism industry of Nepal. Journal of Tourism and Hospitality Education, 10, 108–131. https://doi.org/10.3126/jthe.v10i0.28763

10. Tsuladze, L. (2008). *Quantitative research methods in the social sciences*. Retrieved June 24, 2022, from http://css.ge/wp-content/uploads/2019/07/raodenobrivi_kvlevis_meTodebis_saxelomz gv.pdf

11. Wachyuni, S. S., & Kusumaningrum, D. A. (2020). The effect of covid-19 pandemic: How are the future tourist behavior? Journal of Education, Society and Behavioural Science, 67–76. https://doi.org/10.9734/jesbs/2020/v33i430219

Attitudes Constraining the Inclusion of People with Disabilities in a Ghanaian Public University: Student and Staff Perspective

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Abstract

Attitudes are fundamental to the inclusion of students with disabilities in higher education. This study explored the perspectives of students and staff regarding the attitudes that hinder the inclusion of students with disabilities in a Ghanaian university. A qualitative methodology was employed, with data collected through interviews with 13 respondents, including seven university lecturers and six students with disabilities. These data were analysed and presented thematically. From the perspective of these respondents, the attitudes that influence the inclusion of students with disabilities in the university community are: preconceived ideas and mindsets, offensive remarks and comments, and undesirable patterns of behaviour and actions. It was recommended that tools such as comprehensive awareness raising, continuous contact and participation in university activities, and integrating attitudes and beliefs into professional preparation and development programmes be used to combat these negative attitudes. It was concluded that the identification and implementation of programmes, guidelines, and procedures that may bring about fundamental attitudinal change are essential for successfully including people with disabilities in higher education institutions (HEIs).

Keywords: Attitudes, inclusion, people with disabilities, Ghanaian public university

Introduction

Attitudes refer to a psychological construct that motivates individuals to conduct themselves in certain ways; they are forces that inform beliefs (Triandis et al., 1984). Values, attitudes, and behaviour patterns are developed from socio-cultural interactions, including modelling and observation, family relationships, educators, and peers, with significant others playing a key role (Bandura (1977). Further, the attitudes of people without disabilities towards people with disabilities are intricate and multifaceted, and these aspects affect behaviour towards people with disabilities (Yuker, 1988). Moreover, discriminatory attitudes towards people with disabilities are entrenched in societies. These imperceptible and subtle barriers constrain social connections with people with disabilities and preserve the mutuality of unfavourable attitudes (Shannon et al., 2009). Jones and Guskin (1984) contend that unacceptable attitudes are founded on naivety and deception, which lead to the denunciation of people with disabilities.

Among African countries, people with disabilities can be excluded, denounced, and treated unkindly. According to Amanze (2019), people with disabilities are treated as objects rather than as human beings. Bruno and Fangnwi (2019) maintain that prejudice, misconceptions, mockery, insults, and stigmatisation hurt the emotional state and personality of people with disabilities. Researchers (e.g., Agbenyega, 2003, Amanze, 2019; Naami & Hayashi, 2012) argue that these unacceptable attitudes are founded on the assumption that disability is the outcome of evil spirits, sins, witchcraft, magic, 'juju' and/or retribution from the gods. According to Bandura (1986), people's behaviours are significantly influenced by strongly held beliefs.

Despite the growing awareness and the political will to enact inclusion, negative attitudes, stigma, and limited knowledge of disability still prevail in education systems in many countries (United Nations Children's Fund [UNICEF], 2014). Although inclusion is at the core of governments' educational and political agenda, the notion of disability from a deficit perspective remains dominant (Helena-Martins et al., 2018). Attitudes are fundamental to implementing successful policy for including students with disabilities in HEIs (Zafrir, 2016).

The literature highlighted that many students with disabilities face stigma, discrimination, and resistance from stakeholders in the academic landscape, including faculty, administrators, and students without disabilities. Students with disabilities have cited instances of isolation, rebuffing, and derogatory treatment, as well as difficulties related to the attitudes of management staff (Ebersold & Evans, 2003; FOTIM, 2011). Some students with disabilities expressed the feeling that the management of HEIs was pressured to accept inclusive education for students with disabilities because of apprehensions about change (FOTIM, 2011). Dowrick et al. (2005)

conducted a study and found that most students with disabilities felt stigmatised due to the notion that 'disability equals inability'. Researchers (Budu, 2016); Ebersold and Evans, 2003), for example, documented similar findings regarding unacceptable attitudes toward students with disabilities in HEIs. Similarly, Morley and Croft (2011) reported that students with disabilities recounted numerous experiences of 'othering', prejudice, socio-cultural exclusion, powerlessness, frustration, and social isolation on university campuses. Cases of isolation, derogatory treatment, and rejection of students with disabilities have also been reported by FOTIM (2011).

It is important to respect, value, and provide for 'difference' within a university campus environment (Gillies & Dupuis, 2013; Evans et al., 2017). This diversity should be made visible to create welcoming, accepting, friendly, embracing, and inclusive spaces. A campus community with noticeably diverse characteristics decreases sentiments of 'stigma and otherness' associated with disability (Evans et al., 2017). Faculty and peers are responsible for creating inclusive spaces and increasing social and learning opportunities for students with disabilities in the university landscape (Gilson et al., 2020).

According to Costea-Bărluţiu and Rusu (2015) and Thompson et al. (2012), social closeness to disability is fundamental in establishing variations in attitudes towards people with disabilities. Research has established that social proximity or interaction with a disability is a key ingredient that impacts how attitudes towards people with disabilities become visible (Shannon et al., 2009). Similarly, classroom interaction significantly affects students' acceptance of disabilities (McGregor, 2003). Regular and frequent contact with friends, acquaintances, and colleagues is essential to create familiarity, foster respect for people with disabilities, and promote inclusivity (Thompson et al., 2012). A study conducted by Hayashi and May (2011) revealed that students who a professor with a disability tutored demonstrated a greater pro-disability attitude.

HEIs require changing values and attitudes to include individuals with disabilities effectively. Paradoxically, the essence of HEIs is to engender intellectual growth. A paradigm shift in the attitudes and mindsets of these HEIs is essential "for their own intellectual growth to occur in disability inclusion" (FOTIM, 2011, pp. 83-84). Transforming values and attitudes takes extended time and requires thoroughly examining assumptions and practices. Societies must understand and accept inclusive education through advocacy (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2009).

Parchomiuk (2015) contends that people working with those with disabilities must have a positive mindset to eliminate irrational actions, and assumptions, as undesirable and stereotyped attitudes can manifest in work-

related behaviour. Commitment, appreciation of differences, meaningful friendships, flexibility, respect, patience, joy, teaching, and mentoring are important and critical skills, qualities, and attributes for people working with those with disabilities (Shippy, 2015). The leadership of HEIs has central responsibility for building and maintaining a supportive culture and philosophy of inclusion in their respective institutions (MacFarlane & Woolfson, 2013). Slee et al. (2014) argue that university leadership must demonstrate a commitment to the positive educational experience of students with disabilities. Similarly, Shaddock et al. (2009) maintain that the role of leadership is, thus, critical to implementing the inclusion agenda.

In Ghana, prevailing cultural beliefs continue to hinder the inclusion of people with disabilities in HEIs and influence the way they are treated. Conceptualisations of disability are based on history, cultural beliefs, and norms, impacting attitudes towards people with disabilities (Anthony, 2011). For example, Ghanaians generally believe that people with disabilities possess evil spirits and bring bad omens to the family and society. Scholars, for example, Agbenyega (2003), Avoke (2002), and Kuyini (2014) reported that in history, such beliefs have led to negative attitudes, acts of villainy, and/or infanticides.

Societal perceptions of what causes disability and the possibility of causing destruction have implications for educational provision and attitudes towards persons with disabilities (Kuyini, 2014) in HEIs in Ghana. As mentioned by researchers such as Agbenyega, et al. (2005), Asiedu, et al. (2018), and Avoke (2002), unacceptable attitudes and disregard are basic impediments to social and educational engagement of persons with disabilities in Ghana. Agbenyega (2007) asserts that negative attitudes and prejudice are at the heart of all educational barriers, especially for people with disabilities in Ghana. Research has established that people without disabilities within the university community are not certain of the characteristics of students with disabilities and are therefore reluctant to engage with them (Naami & Hayashi, 2012).

The philosophy of social justice is fundamental to protecting the rights of people with disabilities. This philosophy eradicates systems that support exclusionary practices and marginalisation in tertiary education (Evans et al., 2017). According to UNESCO (2014), numerous international treaties and declarations affirmed the right of everyone to education, and these rights are recognised in several legally and non-legally enforceable instruments. Similarly, the 1992 Constitution of the Republic of Ghana, and the Persons with Disability Act, Act 715, 2006, forbids discriminatory treatment of people with disabilities. Section 37 of the Persons with Disabilities Act 2006 prohibits the use of pejorative labels for persons with disabilities on account of their disabilities (Government of Ghana, 2013; Republic of Ghana, 2006). In 2015,

Ghana's Inclusive Education Policy was promulgated; this policy forms the basis for inclusive education practices and support for people with disabilities in HEIs. This policy seeks to create an educational system that is responsive to diverse learners' needs and also ensures that every learner has the best opportunity to study at any level (Ministry of Education, Republic of Ghana, 2015).

Attitudes are widely recognised as an obstruction to the inclusion of people with disabilities in HEIs. These attitudinal barriers are positively associated with their academic and social engagements. Although a few studies have been conducted by researchers such as Asiedu et al. (2018), Morley and Croft (2011), and Naami and Hayashi (2012) in HEIs in Ghana to isolate some of the unacceptable attitudes experienced by students with disabilities, no such study has been conducted in the study university. Therefore, this study explored the perspectives of students and staff regarding the attitudes that inhibit the inclusion of students with disabilities in this particular Ghanaian university.

The findings of this study may offer useful insights for leadership, faculty, and administrators in designing interventions to promote the inclusion of students with disabilities in HEIs. The findings may also help to create and maintain positive attitudes towards students with disabilities within the university community.

Method
Research Approach

This study explored the views of students and staff regarding the attitudes that limited the participation of students with disabilities in a public university in Ghana. The researcher adopted a qualitative approach to explore and understand the phenomena as they occur. The qualitative methodology allowed the researcher to engage and interact with respondents in a naturalistic environment. This environment facilitated an in-depth understanding of their perceptions, perspectives, values, and interpretations (Corbin & Strauss, 2014) regarding the university community's attitudes towards students with disabilities. The researcher adopted a case study design, which is appropriate for a study that seeks to answer the 'how and why' of phenomena (Yin, 2014).

Selection of respondents

The overarching goal of qualitative research is to understand the specific social context (Connolly, 1998). The qualitative approach allowed this researcher to choose 'information-rich' respondents to gain insights into the phenomena under study. A purposive sampling technique was used to select the participating university to obtain valuable data for this study (Bryman, 2016; Creswell, 2013). The researcher selected 13 respondents,

including seven members of staff and six students with disabilities from the participating university.

The seven staff respondents were picked using a purposive sampling technique to obtain information-rich cases (Creswell, 2013). The researcher adopted a convenience sampling technique to select six student respondents who were both available and interested in being part of the research (Etikan et al., 2016; Taherdoost, 2016). The seven staff respondents were selected from the university's leadership and management team, comprising the Pro-Vice-Chancellor, Dean of Students, Dean of Faculty, Vice-Dean of Faculty, Head of Department, Head of Disability Support Unit, and Deputy Head of Disability Support Unit. The six students who participated in the study were from various bachelor's and master's degree programmes, including four students with vision impairment and two with physical disabilities.

The anonymity of the study respondents was ensured by using identifiers (pseudonyms) to replace their names. The seven staff respondents were designated as AP1, AP2, AP3, AP4, AP5, AP6, and AP7. Similarly, the names of the six student respondents were designated as follows: APS1, APS2, APS3, APS4, APS5, and APS6. Altogether, the respondents had a rich array of insights and experiences relating to the attitudes that affect the academic experiences of students with disabilities.

Data Collection and Analysis

The respondents' voices are fundamental to this research and were elicited through face-to-face interviews (Cohen et al., 2011). Denzin and Lincoln (1994) maintain that interviews are identified as "the preferred methodological tool of the qualitative researcher" (p. 353). Interviews allowed the researcher to understand the respondents' perspectives on the investigated phenomena (Best & Kahn, 2006). Through detailed interviews, respondents shared their thoughts and experience regarding the attitudes that affect students with disabilities in HEIs. A similar set of questions was presented to each respondent via an interview guide. The literature review provided the framework for the content of the interview protocol, which focused on the attitudes of students with disabilities and aspects that prevent their full participation in the university community. The basic responses to these issues have been presented and discussed more fully in the following section.

According to Cohen, et al (2011), qualitative data analysis is about organising, reporting, and explaining data. The qualitative data analysis process involves making sense of a huge amount of data to reduce the raw information, identify key trends and build a framework to communicate the substance of the data (Patton, 2015). Thus, the process involves how data are translated into findings. The researcher followed the three steps of qualitative analysis proposed by Ary et al. (2019) to transform the interview data into

findings. These phases include 1) familiarisation and organisation 2) coding and reducing 3) interpretation and representation. Short and long quotes from study respondents were woven into the findings to provide readers with the substance of the raw data and to demonstrate the strength and credibility of the data analysis process (Braun & Clarke, 2006; Nowell et al., 2017).

As Johnson and Christensen (2014) and Lewis and Nicholls (2014) suggest this researcher accurately reported the interview data to ensure extreme rigour. Following the transcription of the interview data, member checking (participant validation) was conducted to allow respondents to confirm their transcripts and any interpretations applied to those words. Member checking facilitated a healthy balance between the views of the respondents and the representation of these views by the researcher (Lincoln & Guba, 1985). The data presented in this study form part of the data collected for the researcher's doctoral thesis (Mensah, 2020).

Ethical considerations

Yin (2014) asserts that ethical concerns are essential to any study involving human subjects. Ethical protocols were followed from the beginning of the research through to how data was collected, analysed, and reported (Creswell, 2013). Before the commencement of the study, ethical clearance was provided by the Human Research Ethics Committee of the institution where the researcher was pursuing her PhD programme. In Ghana, clearance for fieldwork was issued by the university's Ethics Committee that participated in the study. Thus, the ethical procedures established by the two universities were duly followed.

Findings

This study explored the attitudes that hinder the inclusion of people with disabilities in a Ghanaian university. The study's findings are presented under three themes emerging from the data. These themes are preconceptions and mindsets; offensive remarks and comments; and patterns of undesirable behaviours and actions.

Preconceptions and mindsets

Respondents reported the following: mindsets and prejudices, including negative perceptions, bizarre assertions, and thoughts, which are not alien to Ghanaian culture (APS2 & APS4). Respondent AP6 noted that as a human organisation, the university has people from different backgrounds; as such, the manifestation of some undesirable characteristics towards some categories of people is unavoidable. These undesirable behaviours emanate mainly from the value systems and beliefs transferred from society to the

university community. These include stigmatisation, doubts, and uncertainties regarding the potential, competencies, and abilities of people with disabilities.

A student respondent indicated that some people within the university community have no previous contact with people with visual impairments, which triggers negative perceptions. *"You know, some people... it's the first time they come into contact with visually impaired people, so sometimes they have their own stereotypes, they have their own thoughts" (APS2).* The respondent further noted that due to such misapprehensions, certain lecturers perceive students with disabilities as an extra duty to perform in the lecture halls. *"Some lecturers, when they see you in class, maybe it's the first time they see you... they have their own thinking. They think that you are just coming to be a burden to them".*

If some lecturers distribute course materials at lectures and students with vision impairment also go to pick theirs, they respond as if *"you are a nuisance and you worry them"* (APS2). Five student respondents (AP1, AP2, AP3, AP4, AP5) reported that, in their experience, the common belief is that people with disabilities are worthless and a burden on society; they do not merit any kind of support. Respondent APS4 pointed out that although society seems to be making attempts to avoid stereotyping and stigmatising people with disabilities, such attitudes are still deeply rooted, even within the university community. Five student respondents referred to this issue, as demonstrated by a quote from APS4:

> *Some of our lecturers ... think that as a disabled person you can't do what is required. ...sometimes they tend to sympathise or ignore... I think that's really very dangerous. ... And it's like the stigma or these kinds of social stereotypes that we're all trying to prevent will never stop. ... And some of them have weird assertions too. And we all know that in Ghanaian society, there is this problem with how society sees people with disabilities in general. ... Some people still think, "after all, what are you doing here [at the university]?" They don't see the need for you to be here and so they don't value you as much as they should.*

Respondents reported that students with disabilities are constantly dissatisfied with how administrative staff in the offices sometimes received them.

> *Sometimes when you have a disability and you go to an office, the impression is that you are always complaining about everything. People see us as always needing something, so when you go there, the reception is not there. ... In some offices you go in and the reception is bad.* (APS1)

Respondent AP7 corroborated this perspective by stating *"so there are petty, petty attitudes. Sometimes they'll go to this office or that office and the reception is not good".*

Offensive remarks and comments

Offensive remarks and comments describe unacceptable statements and opinions about students with disabilities within the university community. Respondents reported the following: complaints of inquisitiveness, unfounded generalisations, excessive curiosity, and lack of respect from lecturers in the way they communicate with students with disabilities.

Respondent AP4 reported derogatory remarks from some lecturers on issues relating to students with disabilities. They underestimated the abilities of students with disabilities to be successful in life. The respondent cited an incident of a derogatory remark from a fellow lecturer as follows:

> *People express, you know, sympathy instead of empathy. They make quite offensive comments about disability issues and so on. ... For example, one lecturer said that disabled people have no way of progressing in life. You see. That was a very unfortunate comment that he made.* (AP4)

APS2 noted that people, including their colleagues without disabilities, *"try to be so inquisitive by asking ... all sorts of questions - funny, funny questions"* whenever they meet students with disabilities. Many of these irrelevant and unnecessary probes are meant to undermine the abilities of students with disabilities to participate in lectures, learn, and use the facilities available on campus. Three student respondents referred to such probes, including APS3:

> *...one can be when you go to lecturers, some people will say: Ei, how can you learn? So, when the lecturer speaks, how can you listen? But, while speaking, we listen with our ears, right. ... So, they ask some questions that don't need an answer. Rhetorical questions! So, there are a lot of them. Maybe when we talk about mobility on campus: Ei, how can you go to the lecture hall, how can you go to your hostel? How can you...? A whole lot...*

APS3 added that *"...some people... I think they are inflexible. They don't want to ask around to find out more. So, they always conclude: oh, this person is visually impaired, so they can't learn with me, they can't walk with me ...".* AP2 supported the experiences shared by APS3 with an example. AP2 noted that, unlike students without disabilities, if any student with a disability acts in a specific way, this behaviour is attributed to all students with disabilities.

These views are reflected in the following example:

... This generalisation is wrong. "As for the blind, they are inquisitive". Why not say: Kwame [name of a boy born on Saturday] is inquisitive? So, if you have a sighted person who is inquisitive, do you say, "Sighted people are inquisitive"? You would not say that; you would mention the name of the person. So, they are also human beings. It is one person who has done this, so, call the name of that person and say that he is inquisitive. Don't generalise. (AP2)

AP7 reported that some lecturers are not polite in addressing people with disabilities. The respondent stated, *"...and sometimes, even some lecturers, the way they talk to them [students with disabilities]..."* (AP7). This comment depicts the inappropriate way some lecturers communicate with students with disabilities, which can be very upsetting and frustrating. It can sometimes demotivate and discourage students with disabilities from engaging in some activities (APS2).

Undesirable patterns of behaviour and actions

The third category of attitudes is manifested in unpleasant actions and/or behaviours towards students with disabilities within the university community. Respondents identified behaviours such as the following: distancing, isolation or shunning, providing coerced assistance and being physical, that is, competing (struggling) for space and seats in the lecture theatre. Further concerns highlighted included: the reluctance of administrative staff to collect Braille scripts from students with vision impairment; the unwillingness of some commercial drivers to exercise restraint in allowing students with vision impairment to use the road networks on campus; the undesirable treatment by some staff in the university halls of residence; and the weak interpersonal skills of shopkeepers and commercial drivers operating on campus. Similarly, some respondents reported that certain faculty members were impatient, insensitive, or indifferent when addressing the concerns of students with disabilities. Two staff interviewed described how students without disabilities sought to avoid students with disabilities, hence their reluctance to learn with them and/or live in hostels with them.

For instance, respondent AP2 said, *"... Some don't even want to mix with disabled people. They may not want to be in the same study group. Some people don't even want to be in the same room as these people".* Similarly, respondent AP4 stated:

> *I heard a student say, "As for me, I will not go near him. If you go near him, the disabled student will tell you to help*

> *him". Do you understand? It means that he avoids this disabled student so that he doesn't ask him to help him. And then others also try to avoid the company of such people. Some students will not like to offer help, so they will try to avoid such people.* (AP4)

Student respondent APS4 corroborated the statements and further indicated that displaying their competencies, skills, potential abilities, talents, and many others does not persuade several classmates without disabilities to socialise with them. As their peers without disabilities often assist them unwillingly, they are sometimes hurt in the process. More precisely, the respondent said:

> *As a visually impaired person, sometimes you move around and get out of the way and are not able to follow the path. Someone sees you, but ... doesn't want to come and help you, but prefers to stay away and think that someone should help you instead. And this is a big problem. Sometimes it can even happen that some people come to your aid, but because they don't like it, they can do anything and you can get hurt in the process.* (APS4)

Respondent APS1 felt that traders, taxi, and commercial bus drivers on campus have a lot of difficulties engaging with students with disabilities. *"There is a major problem in relating with these people, taxi drivers, traders when you go to the market. Some of them are mainly due to the level of illiteracy. They don't know how to relate with disabled people"* (APS1). The respondent attributed the challenges associated with interacting with students without disabilities to inadequate orientation for freshmen.

APS5 highlighted the indifferent behaviour of some lecturers concerning changing the location of lectures to places accessible to wheelchair users. The respondent recounted an incident involving a student with a physical disability who had an issue climbing the stairs to the lecture theatre. He decided to wait by the stairs for help when the lecturer who was to deliver the particular lecture was passing by. Although he explained his problem with access to the lecture theatre to the lecturer, the lecturer pointed out that the location of the class could not be changed because of his inaccessibility problem.

The insensitivity and indifference of students without disabilities are demonstrated by the way they push and/or compete with students with disabilities to get in and get seats in the lecture theatre. Respondent APS5 explained instances when she was pushed, trampled, and fought to get up on no less than three occasions. These incidences often occur when students

struggle to access the lecture theatre and get seats. Respondent APS5 recounted an example of such unwarranted behaviour as follows:

> *The hardest and most frustrating part is for those of us who have mobility challenges... In this university the learning facilities are few, particularly the lecture halls. ... We have to wait outside for those inside to close before we can enter. So when they close [end the lecture] and we're rushing in, those of us who are physically challenged, they turn to push us, and when we fall, they run over you, and go and sit down. I am a victim. Sometimes some of our friends try to get a seat for you to sit down, but the able-bodied students will decide to come and take the seat from you, and you have no choice but to either stand or those who have a seat allow you to pair up with them.*

The same student respondent, (APS5), also pointed out that the entrance of some lecture theatres is small and that, as her legs are not strong, she was sometimes jostled. And *"while struggling, your leg can also be caught by other students' legs and you fall. As it is difficult to get up, all the seats may be taken before you get up from the floor"*.

The data revealed that negative attitudes towards students with disabilities were widespread. Reported examples included preconceptions, offensive language, and unacceptable behaviour. These attitudes were found throughout the university community.

Discussions

Data analysis showed clear, consistent, and substantial evidence of negative attitudes permeating every dimension of the university experiences of students with disabilities. The discourses indicated that these attitudes were extensive and manifested in many forms and nuances influencing their learning outcomes and university experiences. These negative attitudes are found among administrators, faculty, professionals, residence workers, shopkeepers, and taxi and commercial bus drivers who ply their trade on campus. Forms of attitudes, which were prevalent, included preconceptions, offensive language, and inappropriate behaviour. Some of these negative attitudes are specific to disability. These findings suggest that attitudes within the university landscape are inconsistent with the philosophy of social justice; this philosophy probes the labels, assumptions, and policies that strengthen exclusionary practices, isolation, and stigma in educational institutions (Cochran-Smith, 2010). In Ghana, attitudes towards people with disabilities are rooted in cultural and social beliefs grounded in the medical model of disability, where disability is viewed from a deficit perspective (e.g.,

Anthony, 2011; Avoke, 2002; Naami & Hayashi, 2012), informing society's attitudes and behaviours towards people with disabilities.

These notions have been transmitted from society to HEIs, a learning environment where people are envisaged to be critically minded and knowledgeable. Researchers (e.g., Helena-Martins et al., 2018; Jameel, 2011; Rao, 2014; Zafrir, 2016) suggest that attitude is pivotal for welcoming and accommodating people with disabilities in HEIs. A change in values and attitudes takes time (UNESCO, 2009); certainly, the attitudes in HEIs cannot change overnight (UNESCO, 1999). However, an appreciation that disability is a matter of empowerment and rights, not pity and charity, is fundamental to a profound transformation of attitudes towards disability (Bruno & Fangnwi, 2019). An absolute prerequisite for successful inclusion is, thus, a transformation in people's values and attitudes.

Conclusion

The study highlighted that attitudes across all sections of the university landscape are essential to the inclusion of people with disabilities in HEIs. Where attitudes towards students with disabilities and what they value are fundamentally negative, access, engagement, and participation are likely to be minimal, no matter how well their academic, financial and physical access needs are addressed. Negative attitudes have a strong tendency to erase any gains made by HEIs in increasing access and promoting the engagement of students with disabilities. Adopting a positive attitude towards students with disabilities in HEIs requires a multifaceted and long-term approach. Implementing programmes, policies, and practices that can bring about major attitudinal change are crucial to the acceptance of people with disabilities in universities. As attitudes are fluid rather than static, they can be changed (Thompson et al., 2012). Therefore, unfavourable attitudes of the university community and society towards people with disabilities can be reshaped through comprehensive awareness-raising.

Recommendations

This study has shown that attitudes towards students with disabilities in universities are largely negative. The university community's beliefs and values influence how they treat and respond to students with disabilities. To engender and sustain supportive attitudes towards students with disabilities in HEIs, the following recommendations were made:

1. Through regular and comprehensive awareness-raising activities, people without disabilities will understand, welcome, and accept people with disabilities. Avenues such as workshops, seminars, university forums, various student gatherings, and radio broadcasts are

ways to educate and disseminate information about disability within the university community.

2. Celebrating students with disabilities will help to develop positive attitudes towards them. Universities may draw up a policy or programme to introduce a 'disability day' where students with disabilities come and showcase their abilities, talents, skills, potential, competencies, and capabilities. Regular contact, participation, and involvement in programmes may reduce or eliminate negative notions associated with disability.

3. Disability awareness can be improved by borrowing lessons from a university in Ghana where Special Education is a compulsory subject for all students during one semester of their study programme.

4. Attitudes and beliefs should be an essential component of professional training and continuous development programmes to engender acceptable attitudes that will create welcoming spaces for the effective and meaningful participation of people with disabilities in HEIs.

References:

1. Agbenyega, J. (2003). The power of labeling discourse in the construction of disability in Ghana. A paper presented at the Australian Association for Research in Education Conference, Newcastle. Association of Active Educational Researchers (AARE), Citeseer.

2. Agbenyega, J. S., Deppeler, J., Harvey, D. (2005). Attitudes towards inclusive education in Africa scale (ATIAS): An instrument to measure teachers' attitudes towards inclusive education for students with disabilities. *Journal of Research and Development in Education, 5, 1-15.*

3. Agbenyega, J. S. (2007). Examining teachers' concerns and attitudes to inclusive education in Ghana. *International Journal of whole schooling, 3*(1), 41-56.

4. Amanze, J. N. (2019). The mission of the church to people with disabilities in Southern and Central Africa: An appraisal. *International Review of Mission, 108*(1), 124-135. https://doi.org/10.1111/irom.12267

5. Anthony, J. (2011). Conceptualising disability in Ghana: Implications for EFA and inclusive education. *International Journal of Inclusive Education, 15(10),* 1073-1086. https://doi.org/10.1080/13603116.2011.555062

6. Ary, D., Jacobs, L. C., Razavieh, A., & Sorensen, C. K. (2005). *Introduction to research in education*. Wadsworth Publishing.

7. Asiedu, A. M., Hadjah, T. M., & Tei-Doe, I. O. (2018). Tertiary education for persons with disability: The role of office of students

with special needs at the University of Ghana. *Lancaster University Ghana Journal on Disability, 1*, 85 - 103.

8. Avoke, M., & Avoke, S. K. (2004). *Inclusion, rehabilitation, and transition services in special education*. University of Education Winneba, Ghana: Department of Special Education

9. Bandura, A. (1977). *Social learning theory*. Prentice-Hall, Inc

10. Bandura, A. (1986). *Social foundations of thought and action*. Prentice-Hall.

11. Best, J. W., & Kahn, J. V. (2006). *Research in education* (10th ed.). Allyn and Bacon.

12. Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology, 3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

13. Bruno, B., & Fangnwi, M. L. (2019). Effect of peer attitude on personality and psychological well-being of persons with physical disabilities in Buea municipality. *Greener Journal of Psychology and Counselling, 3(1)*, 09 -19. https://doi.org/10.15580/GJPC.2019.1.010919008

14. Bryman, A. (2016). *Social research methods* (5th ed.). Oxford University Press.

15. Budu, J. (2016). Making commitment concrete: Policy and practice in access to higher education in Ghana. In G. Atherton (Ed.), *Access to higher education: Understanding global inequalities* (pp. 151-163). Palgrave. https://doi.org/10.1057/978-1-137-41190-7_12

16. Cochran-Smith, M. (2010). Toward a theory of teacher education for social justice. In *Second international handbook of educational change* (pp. 445-467). Springer.

17. Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education* (7th ed.). Routledge.

18. Connolly, P. (1998). Dancing to the wrong tune: Ethnography generalization and research on racism in schools. In P. Connolly & B. Troyna (Eds.), *Researching racism in education: Politics, theory, and practice* (pp. 122 -139). Open University Press.

19. Corbin, J., & Strauss, A. (2014). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Sage publications.

20. Costea-Bărluţiu, C., & Rusu, A. S. (2015). A preliminary investigation of Romanian university teachers' attitudes towards disabilities–A premise for inclusive interaction with students with disabilities. *Procedia-Social and Behavioral Sciences, 209*, 572-579. https://doi.org/10.1016/j.sbspro.2015.11.289

21. Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Sage.

22. Cypress, B. S. (2017). Rigor or reliability and validity in qualitative research: Perspectives, strategies, reconceptualization, and recommendations. *Dimensions of Critical Care Nursing, 36*(4), 253-263. https://doi.org/10.1097/DCC.0000000000000253

23. Denzin, N. K., & Lincoln, Y. S. (1994). *Strategies of qualitative inquiry*. Sage.

24. Dowrick, P. W., Anderson, J., Heyer, K., & Acosta, J. (2005). Postsecondary education across the USA: Experiences of adults with disabilities. *Journal of Vocational Rehabilitation, 22*(1), 41-47.

25. Ebersold, S., & Evans, P. (2003). *Disability in higher education*. OECD.

26. Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American journal of theoretical and applied statistics, 5*(1), 1-4. https://doi.org/10.11648/j.ajtas.20160501.11

27. Evans, N. J., Broido, E. M., Brown, K. R., & Wilke, A. K. (2017). *Disability in higher education: A social justice approach*. John Wiley & Sons.

28. FOTIM. (2011). *Disability in higher education project report*. FOTIM. http://www.students.uct.ac.za/usr/disability/reports/annual_report_10_11.pdf

29. Gillies, J., & Dupuis, S. L. (2013). A framework for creating a campus culture of inclusion: A participatory action research approach. *Annals of Leisure Research, 16*(3), 193-211. https://doi.org/10.1080/11745398.2013.832646

30. Gilson, C. B., Gushanas, C. M., Li, Y., & Foster, K. (2020). Defining inclusion: Faculty and student attitudes regarding postsecondary education for students with intellectual and developmental disabilities. *Intellectual and Developmental Disabilities, 58*(1), 65-81. https://doi.org/10.1352/1934-9556-58.1.65

31. Government of Ghana. 2013. *Ghana's Constitution of 1992 with Amendments through 1996*. Government of Ghana, Comparative Constitutions Project. http://extwprlegs1.fao.org/docs/pdf/gha129754.pdf

32. Hayashi, R., & May, G. E. (2011). The effect of exposure to a professor with a visible disability on students' attitudes toward disabilities. *Journal of social work in disability & rehabilitation, 10*(1), 36-48. https://doi.org/10.1080/1536710X.2011.546300

33. Helena-Martins, M., Borges, M. L., & Gonçalves, T. (2018). Attitudes towards inclusion in higher education in a Portuguese university. *International Journal of Inclusive Education, 22*(5), 527-542. https://doi.org/10.1080/13603116.2017.1377299

34. Jameel, S. S. (2011). Disability in the context of higher education: Issues and concerns in India. *Electronic Journal for Inclusive Education, 2*(7), 3.

35. Johnson, B. R., & Christensen, L. (2014). *Educational research: Quantitative, qualitative, and mixed approaches* (5th ed.). Sage.

36. Jones, R. L., & Guskin, S. (1984). Attitudes and attitude change in special education. In R. L. Jones (Ed.), *Attitudes and Attitude Change in Special Education: Theory and Practice.* (pp. 1 - 20). The Council for Exceptional Children.

37. Kuyini, A. B. (2014). Special education today in Ghana. *Special Education International Perspectives: Practices Across the Globe, 28*, pp. 431-469. https://doi.org/10.1108/S0270-4013_2014_0000028021

38. Lewis, J., & Nicholls, M. C. (2014). Design issues. In J. Ritchie, J. Lewis, M. C. Nicholls, & R. Ormston (Eds.), *Qualitative research practice: A guide for social science students & researchers*. Sage.

39. Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Sage. https://doi.org/10.1016/0147-1767(85)90062-8

40. MacFarlane, K., & Woolfson, L. M. (2013). Teacher attitudes and behavior toward the inclusion of children with social, emotional and behavioral difficulties in mainstream schools: An application of the theory of planned behavior. *Teaching and Teacher Education, 29*, 46-52. https://doi.org/10.1016/j.tate.2012.08.006

41. McGregor, S. J. R. (2003). *Attitude of students towards peers with disabilities: The effect of including students from an education support centre in an inclusive middle school setting.* [Honours Thesis, Edith Cowan University]. https://ro.ecu.edu.au/cgi/viewcontent.cgi?article=1355&context=theses_hons

42. Mensah, M. A. (2020). *Higher education access and participation for persons with disability in Ghanaian public universities*. [Doctoral Thesis, Edith Cowan University, Australia]. https://ro.ecu.edu.au/theses/2364

43. Ministry of Education, Ghana. 2015. *Inclusive Education Policy*. Accra, Ghana: Ministry of Education. https://sapghana.com/data/documents/Inclusive-Education-Policy-official-document.pdf

44. Morley, L., & Croft, A. (2011). Agency and advocacy: Students with disabilities in higher education in Ghana and Tanzania. *Research in*

Comparative and International Education, 6(4), 383-399.
https://doi.org/10.2304/rcie.2011.6.4.383

45. Naami, A., & Hayashi, R. (2012). Perceptions about disability among
Ghanaian university students. *Journal of social work in disability &
rehabilitation, 11*(2), 100-111.
https://doi.org/10.1080/1536710X.2012.677616

46. Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017).
Thematic analysis: Striving to meet the trustworthiness criteria.
International Journal of Qualitative Methods, 16(1),
1609406917733847. https://doi.org/10.1177/1609406917733847

47. Parchomiuk, M. (2015). Value preferences of teachers and their
attitudes towards individuals with disabilities. *International Journal of
Disability, Development and Education, 62*(3), 276-287.
https://doi.org/10.1080/1034912X.2015.1020919

48. Patton, M. Q. (2015). *Qualitative research and methods: Integrating
theory and practice*. Sage Publications.

49. Rao, S. (2004). Faculty attitudes and students with disabilities in
higher education: A literature review. *College Student Journal, 38*(2),
191-199.

50. Republic of Ghana. (2006). *Persons with Disability Act 2006, Act 715*.
http://www.gfdgh.org/GHANA%20DISABILITY%20ACT.pdf

51. Shaddock, A., MacDonald, N., Hook, J., Giorcelli, L., & Arthur-Kelly,
M. (2009). *Disability, diversity and tides that lift all boats: Review of
special education in the ACT*. Chiswick, NSW: Services Initiatives.
https://trove.nla.gov.au/version/180397523

52. Shannon, C. D., Schoen, B., & Tansey, T. N. (2009). The effect of
contact, context, and social power on undergraduate attitudes toward
persons with disabilities. *Journal of Rehabilitation, 75*(4).

53. Shippy, R. (2015). *Peer support and Inclusion for Individuals with
disabilities: Benefits for everyone.* [Grand Valley State University.
Allendale, Michigan].
https://scholarworks.gvsu.edu/cgi/viewcontent.cgi?article=1517&con
text=honorsprojects

54. Slee, R., Hughes, K., & Fuscaldo, G. (2014). *Experiences of students
with disabilities and long term illnesses at VU: What helps? What
hinders?* The Victoria Institute.
http://vuir.vu.edu.au/31372/1/Experiences%2520of%2520students%2
520with%2520disabilities%2520%2526%2520long%2520term%252
0illnesses%2520at%2520VU%2528Web7%2529.pdf

55. Taherdoost, H. (2016). Sampling methods in research methodology:
How to choose a sampling technique for research. *International*

Journal of Academic Research in Management (IJARM), 5(2), 18 - 27. https://doi.org/10.2139/ssrn.3205035

56. Thompson, D., Fisher, K. R., Purcal, C., Deeming, C., & Sawrikar, P. (2012). Community attitudes to people with disability: scoping project. [SSRN 2014423]. https://ssrn.com/abstract=2014423 or https://doi.org/10.2139/ssrn.2014423

57. Triandis, H., Adamopoulos, J., & Brinberg, D. (1984). Perspectives and issues in the study of attitudes. In R. L. Jones (Ed.), *Attitudes and attitude change in special education: Theory and practice* (pp. 21-40). The Council for Exceptional Children.

58. UNESCO. (1999). *Provisions for students with disability in higher education*. UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000128761

59. UNESCO. (2009). *Policy Guidelines on inclusion in education*. UNESCO. http://unesdoc.unesco.org/images/0017/001778/177849e.pdf

60. UNICEF. (2014). *Legislation and policies for inclusive education: Webinar 3, Companion Technical Booklet.* UNICEF. https://www.medbox.org/legislation-and-policies-for-inclusive-education-webinar-3-companion-technical-booklet/preview

61. Yin, R. K. (2014). *Case study research design and methods* (5th ed.). Sage.

62. Yuker, H. E. (1988). *Attitudes toward persons with disabilities*. Springer Publishing Co.

63. Zafrir, E. (2016). *Attitudes towards Students with disabilities in higher education, is there any change?* European Proceedings of Social & Behavioural Sciences [EpSBS] (4th ed), (pp. 640 – 647). UK Future Academy. http://dx.doi.org/10.15405/epsbs.2016.12.79.

Estimating the Economic Burden of Diabetes Mellitus in Kenya: a Cost of Illness Study

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Abstract
Diabetes mellitus is one of the non-communicable diseases that depletes the wealth of any individual directly and indirectly due to the cost associated with treating the illness and its complications. The study aims to estimate the economic burden of Diabetes mellitus in Kenya from a societal perspective using a cost-of-illness approach. The study's results and findings for the economic burden of diabetes mellitus in Kenya relied on the cost of illness approach. The approach identifies and measures all the costs of Diabetes mellitus, including direct and indirect costs. The 552,400 adult cases reported in 2019 resulted in a total economic cost of USD 372,184,585, equivalent to USD 674 per diabetes mellitus patient. The total direct costs accounted for the highest proportion of the overall costs at 61% (USD 227,980,126), whereas indirect costs accounted for 39% of the total economic costs (USD 144,204,459). Costs of medicines accounted for the highest costs over the total economic costs at about 29%, followed by the income lost while seeking care at 19.7%. Other costs that accounted for more than 10% of the total costs include productivity losses (19%), diagnostic tests (13%), and travel (12%). The rest of the cost categories accounted for less than 5%. Efforts should be made to reduce the costs of these medicines to enhance care. The high indirect costs reported, majorly in income lost by patients while seeking medical care, are 19%. Access to affordable health services such as diabetes mellitus education, regular blood glucose screening initiatives, and increasing

local manufacturing of medicines can reduce the economic burden of diabetes mellitus and increase the health outcomes of the population and their contributions to society.

Keywords: Economic evaluation, income, health spending, inpatient

Introduction

Diabetes mellitus (DM) is a chronic illness characterised by high blood glucose levels due to the body's inability to produce enough energy and insulin. A hormone is involved in the metabolism from the entry of glucose (Saeedi et al., 2019). However, the prolonged presence of elevated blood sugar (hyperglycaemia) causes multi-organ damage leading to life-threatening conditions (i.e. cardiovascular disease, nerve damage (neuropathy), eye disease (retinopathy), kidney injury (nephropathy), among other complications) (Preis et al., 2009). Furthermore, despite the persistent hyperglycemia associated with complications of the illness, the demand for healthcare and control and monitor DM dynamism thus increases the cost of care to patients and burdens individuals with limited income, and depletes the household income.

The global projection estimated 463 million in 2019 to 624 million cases by 2040; about two-thirds of all people living with Diabetes came from low- and middle-income countries in 2013 (WHO, 2016).In Africa, the estimated prevalence goes around 4.7%, with high rates of underdiagnosis around 59.7%(WHO, 2016; 2020). Hence, the literature characterises that increased urbanisation, diet changes, and sedentary lifestyles fueled and increased the incidence of DM in Low and Low Middle-Income Countries (LMICs)(Atun et al., 2017). From a societal perspective, USD 760 billion in 2019 marked the global expenses as "*direct costs of diabetes*", and the estimates might increase by 8.6% to reach USD 825 billion over the next ten years (WHO, 2020).

In Africa, in 2019, healthcare providers estimated USD 9.6 billion was spent on DM healthcare-seekers, among other non-communicable diseases (NCDs). Therefore, there is a high likelihood of exponentially increased health expenditure on the same chronic disease in the years to come. Unfortunately, in East Africa, the incidence of DM remains under-reported and reduces the facts during the awareness and campaigns to prevent DM. For example, in Kenya, awareness relied on the national DM incidence published in 2015. However, the Ministry of Health dubbed the Kenya STEPwise Survey (latest survey) for Noncommunicable Disease Risk estimated the prevalence of Diabetes at 2.4% in Kenya. Hence, the recent reports motivated the study. As of April 2020, the country had about 552,400 diabetes mellitus adult cases out of an adult population of 25,587,600. The government reported around USD

78.6 as the total health expenditure per capita, with health expenditures accounting for about 4.5% of total government spending(World Bank, 2018).

However, DM patients risk carrying high economic burdens resulting from catastrophic spending and financial depletion. Such burdens resulted from three conditions that predict a financial disaster (*i.e*. out-of-pocket health care costs, the inability of individuals to pay and the lack of subscription mechanisms to pool financial risks prevail)(Ahmed & Almulla, 2020; Kirigia et al., 2009a).In addition, the chronic nature of DM and its numerous complications make it a costly disease. Thus, the study aims to shade the costs of illness from a DM perspective in Kenya, where 1 in 3 Kenyans, i.e.,15.9 million people, live under the poverty line(Barasa et al., 2017; Chuma & Maina, 2012; Mohajan, 2013). The current adult equivalent consumption estimate is below Ksh 3,252 in rural areas and Ksh 5,995 in urban areas (KNBS, 2020).

The economic burden of Diabetes poses a significant public health challenge for health insurers to identify ways to improve diabetes monitoring and control the dynamics of diabetes-related spending(de Lagasnerie et al., 2018). Hence, from the methodological perspective, the estimation of the overall economic burden of DM includes the direct costs of treating the disease and the costs of treating the complications of DM, the costs of productivity and its complications, and the costs of social benefits due to DM-related disability(Peters et al., 2017). Therefore, looking at the current overall economic burden of DM and its complications is crucial for decision-makers and payers, especially at this time of rising health care spending, pressure on payers, and cost reduction initiatives.

Literature shows that cost-of-illness studies rely more frequently on descriptive studies and use the value of the costs of a particular health problem in currency terms, which allows the estimation of the economic burden of the problem (Ahmed & Almulla, 2020; Kirigia et al., 2009a). Moreover, the cost of illness studies traditionally divides costs into three categories: direct, indirect, and intangible(Atun et al., 2017; Bahia, da Rosa, et al., 2019; Mapa-Tassou et al., 2019). Diabetes care incurs substantial costs to patients, families, and society, not only for direct costs of medical care for Diabetes but also indirect and intangible costs.

Methods
Data source
Prevalence, frequency, and cost data were mainly collected from published studies and official reports, and where none was found, grey literature was used.

Costing approach

The full economic cost of DM illness was estimated for 2019 and served as a reference year. A societal perspective was employed to include costs incurred by the country's Ministry of Health, DM patients, and family members. The bottom-up costing approach was used where each resource was identified and then multiplied by the quantity (Q) consumed with its respective price (P). The quantities consumed were majorly imputed using the number of DM patients, while the prices were identified from various published studies and in some cases, from the grey literature. Additionally, prices were inflated from their reported year to the base year of 2019 using the Kenya GDP deflator.

Capital costs identified were few and annualised accordingly; we used their estimated useful life and a discount rate of 3%. Future earnings were also discounted at 3% to calculate their present value. In Kenya, 2019 was used to estimate the lost income per annual gross national income (GNI) per capita while patients sought care or premature deaths (hereunder defined as indirect costs). Other assumptions used are presented as analytical assumptions in the text. All costs are reported in 2019 USD. The Kenya shillings/US dollar exchange rates used were derived from the OANDA currency converter.

Cost Typology

The study's results and findings on the economic burden of Diabetes mellitus in Kenya relied on the cost of illness approach(Athanasakis et al., 2015; Krensel et al., 2019; Mapa-Tassou et al., 2019; Zhu et al., 2019). The approach identifies and measures all the costs of Diabetes mellitus, including direct and indirect costs. Direct costs comprise direct medical and non-medical costs. Direct medical costs are costs of transactions for medical services, including diagnostic tests, medicines, outpatient, hospitalisation, and cost of complications. On the other hand, direct non-medical costs are additional costs in accessing treatment, such as travel costs. Indirect costs include the opportunity cost of time lost while seeking care (morbidity) and productivity losses due to premature deaths (mortality).

Analytical approach

The analytical approach to estimate Total cost (TC) from the public health spending, marginal cost per diabetes mellitus patient, and experienced cost as per family member. This cost can be summarised as follows: TC=TDC+TIC, TDC-Total Direct Costs, and TIC-Total Indirect costs.

Estimating direct costs

The total direct costs of DM were calculated as
TDC=TCdt+TCopd+TCm+TChp+TCcomp+TCtrav

Where: TDC-Total Direct Costs, TCdt-Total costs of diagnostic tests, TCopd-Total costs of outpatient visits, TCm-Total costs of medication, TChp-Total costs of hospitalisation, TCcomp-Total costs of complications and TCtrav-Total costs of travel.

Estimating indirect costs

Productivity losses due to lost income while seeking medical care: the annual costs of productivity losses due to lost income while seeking care were calculated by multiplying the proportion of patients who reported having lost time while seeking care by the annual GNI per capita.

Productivity losses due to premature deaths

A total number of 1,141,543 died from DM in Kenya. The distribution of these deaths across age groups (0-4, 4-14, 15-44, 45-59, 60+) was obtained by multiplying the total number of diabetes deaths by the probability of diabetic patients dying across these age groups(Murray & Lopez, 1996). Their study provides the average age of onset and the average duration of life lived with Diabetes for these age groups(Kirigia et al., 2009a). The productive life years lost (PLYL) for 15–44, 45–59 and 60+ years age brackets were obtained by subtracting the average age of onset and average duration of life lived with Diabetes from the maximum life expectancy in the African Region(Kirigia et al., 2009a).

The future PLYL for 0–4 and 5–14 years age brackets were obtained by subtracting the average age of onset, the average duration of life lived with Diabetes, and 14 years from the maximum life expectancy of Kenya, respectively. The cost of premature diabetes-related mortality among persons of a specific age group is the product of the number of deaths, total number of productive discounted life years lost (i.e. years above 14 years of age), and gross national income per capita per year. The discount used to calculate the present value of future costs for age groups 0-4, and 5 – 14 years is 3% (Drummond et al., 2015) and Kenya's life expectancy = 66 years (World Bank, 2018).

Table 1: Distribution and epidemiology of DM cases across different age groups

Age group	DM prevalence (%)	Av. Age at onset	Av. duration of morbidity	Deaths (%)	PLYL
0 - 4	581 (0.05%)	2.4	0.61	46	49
5 - 14	581 (0.05%)	10	2.97	46	39
15 – 44	176,315 (15%)	29.45	30.1	7,053	6
45 - 59	390,971 (34%)	52.15	16.025	62,555	(2)
60+	573,095 (50%)	69.2	7.175	343,857	(10)

Source - (Murray & Lopez, 1996)

Table 2: Cost component and assumptions

Costs	Ingredients	Estimation	Assumptions
Diagnostic tests	Glucometers	The annual cost of glucometers was calculated as follows: $TCg=(RCg \times Qg)/A(r,n)$ Where TCg is the total cost pf glucometers, RCg is the replacement cost of one glucometer, Qg is the quantity of glucometers used in a year and A(r,n) is the annuitization factor assuming a discount rate of 3% and a useful life of 5 years.	▪ Replacement cost of one glucometer = USD 20 (Brown et al., 2015) (inflated to 2019 USD = USD 25) ▪ Discount rate (r) = 3% (Drummond et al., 1998) ▪ Useful life of glucometers (n) = 5 years ▪ Quantity of glucometers needed is equal to the number of patients on insulin ▪ Proportion of patients on insulin is 32% (Subramanian et al., 2018a) of all 552,400 DM patients (32%×552,400=176,768)
	Reagent strips	The annual costs of reagent strips needed was obtained as follows: $TCrs=Nrs \times ACrsl$ Where Nrs is the number of DM using reagent strips, ACrsl is the average costs reagent strips and lancets per year.	▪ Number of DM patients using reagents strips = number of DM patients on insulin. ▪ Proportion of patients on insulin is 32% (Subramanian et al., 2018a) of all 552,400 DM patients (32%×552,400=176,768) ▪ Annual average costs of reagent strips and lancets = USD 165.50 (Oyando et al., 2020a)(inflated to 2019 USD = USD 176.22)
	Random blood sugar test	The annual cost of random blood sugar test was calculated as follows: $TCrbst=NDMp \times ACrbst \times NTrbst$ where nDMp is the number of diabetes mellitus patients, ACrbst is the average cost of a random blood sugar test, and NTrbst is the number of times a random blood sugar test is done in a year.	▪ Number of DM patients in y2020 = 552,400 ▪ Cost of one random blood sugar test in a public facility = USD 4.95 (adjusted for inflation USD. 5.27) (Subramanian et al., 2018a) ▪ Number of times the random sugar test is done in a year = 4
	HBA1c test	The annual cost of HBA1c test is calculated as follows $TcHBA1c=pHBA1c \times nDMp \times ACHBA1c \times nHBA1c,$ where pHBA1c is the proportion of patients that undertake as least one HBA1c per year, ACHBA1c is the average cost of a HBA1c test in a public facility,	▪ Proportion of patients that undertake as least one HBA1c per year = 20.8% (Matheka et al., 2013) ▪ Number of DM patients = 552,400 ▪ Average cost of a HBA1c test in a public facility = USD 10 (Park & Pastakia, 2018) (adjusted to 2019 USD = USD 17.05)

		and nHBA1c is the number of times HBA1c tests are done in a year.	▪ Number of times, HBA1c test done in a year = 2 to 4 times (Matheka et al., 2013), average = 3 times
Outpatient (OPD) visits		The annual costs DM patients OPD visit in a was calculated a s follows: $$TCopd = nOPD \times nDM \times cOPD$$	▪ Number of DM patients = 552,400 ▪ Number of OPD visits by DM patients in a year = 4 (based on expert opinion) ▪ Cost per OPD visit = USD 4.09 (Stenberg et al., 2018) (adjusted for inflation cost – USD 8.79)
Medicines	Insulin	The annual cost of insulin is calculated as follows $$TCins = pDMins \times nDM \times aCINS$$ Where pDMins is the proportion of DM patients on insulin in public facilities, nDM is the number of DM patients, aCINS is the annual cost of insulin for patients in a public facility	▪ Proportion of patients on insulin only in public facilities = 32% (Subramanian et al., 2018a) ▪ Number of DM patients = 552,400 ▪ Annual cost of insulin for patients in a public health facility = USD 186 (adjusted for inflation USD 199) (Subramanian et al., 2018a)
	Oral medication	The annual cost of oral medication is calculated as follows $$TCins = pDMom \times nDM \times aCOM,$$ Where: pDMins is the proportion of DM patients on oral medication in public facilities, nDM is the number of DM patients, aCINS is the annual cost of oral medication for patients in a public facility.	▪ Proportion of patients on oral medication in public facilities = 25% (Subramanian et al., 2018a) ▪ Number of DM patients = 552,400 ▪ Annual cost of oral medication for patients in a public health facility = USD 89 (adjusted for inflation USD 94) (Subramanian et al., 2018a)
	Both insulin and oral medication	The annual cost of both insulin and oral medication is calculated as follows $$TCins = pDMinsom \times nDM \times aCINSOM,$$ where pDMinsom is the proportion of DM patients on both insulin and oral medication in public facilities, nDM is the number of DM patients, aCINSOM is the annual cost of both insulin and oral medication for patients in a public facility	▪ Proportion of patients on both insulin and oral medication in public facilities = 43% (Subramanian et al., 2018a) ▪ Number of DM patients = 552,400 ▪ Annual cost of both insulin and oral medication for patients in a public health facility = USD 234 (adjusted for inflation USD 250) (Subramanian et al., 2018a)
Hospitalisation		The annual costs of hospitalisation of DM patients was calculated as follows: $$TCip = nIPp \times LoS \times cIPpd$$	▪ Proportion of patients that require hospitalisation (both Type 1 and Type 2 DM patients) o All Type 1 diabetes – 5% of the total diabetics

		Where nIPp is the number of DM patients that require hospitalisation, LoS is the length of stay in hospital for DM patients, and cIPpd is the inpatient cost per day.	○ 5% of the Type 2 diabetes (Barceló et al., 2003) ▪ Number of DM patients = 552,400 ▪ Average length of stay for DM patients = 8.2 days(Comino et al., 2015) ▪ Inpatient cost per day = USD 11.20 (adjusted for inflation – USD 24,12) (Stenberg et al., 2018)
Complication	Diabetic foot	The annual costs of DM patients with diabetic foot was calculated as TCdf=pDMdf×nDM×cDMdf, Where pDMdf if the proposition of DM patients with diabetic foot, nDM is the number of Dm patients, and cDMdf is the annual costs of DM with diabetic foot.	▪ Proportion of DM patients with diabetic foot – 12% ▪ Number of DM patients = 552,400 ▪ Annual cost of patients with diabetic foot in a public facility = USD 70 (adjusted for inflation – USD 75) (Subramanian et al., 2018a)
	Diabetic retinopathy	The annual costs of DM patients with diabetic foot was calculated as TCdr=pDMdr×nDM×cDMdr, Where pDMdf if the proposition of DM patient s with diabetic retinopathy, nDM is the number of Dm patients, and cDMdr is the annual costs of DM with diabetic retinopathy	▪ Proportion of DM patients with diabetic retinopathy – 12% (Abdissa et al., 2020) ▪ Number of DM patients = 552,400 ▪ Annual cost of patients with diabetic retinopathy in a public facility = USD 70 (adjusted for inflation – USD 75) (Subramanian et al., 2018a)
Transport		Transport costs=share of transport costs over the total direct costs×Total direct costs	Share of transport costs over the total direct costs – 23.2% (Oyando et al., 2020a)

Results

Table 3 presents the distribution of DM's direct and indirect economic costs. The total economic burden of DM for an adult population of 552,400 is USD 372,184,585, equivalent to USD 674 per DM patient. The total direct costs accounted for the highest proportion of the overall costs at 61% (USD 227,980,126). On the other hand, the indirect costs accounted for 39% of the total economic costs. Examining the overall costs by cost categories, costs of medicines took up the largest share at 29%, followed by the income lost due to lost due time while seeking care at 19.7%. Other costs that consumed a considerable share of costs include productivity losses due to premature deaths (19%), diagnostic tests (13%), and travel (12%).

Table 3: Cost estimation of the diabetes cases and related costs

Type of cost	Costs (2019 USD)	% of the total sub categories (A and B)	% of the total
Direct costs			
Diagnostic tests	49,638,168	22%	13%
Glucometer	962,545	0.4%	0.3%
Reagent strips	31,150,745	14%	8%
Random blood sugar test	11,646,238	5%	3%
HBA1c	5,878,640	3%	2%
OPD costs	4,853,619	2%	1%
Medicines Costs			
Cost of medication	107,409,897	47%	29%
Insulin	35,084,585	15%	9%
Oral medication	13,029,964	6%	4%
Both	59,295,349	26%	16%
Hospitalization costs	10,652,265	5%	3%
Complication costs	12,494,854	5%	3%
Diabetic foot	4,772,722	2%	1%
Diabetic retino-therapy	7,722,132	3%	2%
Travel costs	42,931,323	19%	12%
Total direct costs (A)	227,980,126		61%
Indirect costs			
Income lost while seeking medical acre	USD 73,416,230	51%	19.7%
Productivity losses due to premature deaths	USD 70,788,229	49%	19%
Total indirect losses (B)	USD 144,204,459		39%
Economic burden (A + B)	USD 372,184,585		100%

The total direct costs of DM were USD 227,980,126, equivalent to unit costs of USD 413 per DM patient. Of these costs of medicines accounted for the largest share at about 47% (USD 107,409,897), followed by costs pf diagnostic tests at 22% (USD 49,638,168), and travels at 19% (USD 42,931,323). Other cost centres, each accounted for 5% and below. The distribution of these costs is shown in Figure 2. The total indirect costs of DM

were USD 144,204,459, equivalent to the unit cost of USD 216 per DM patient. Income lost by DM patients while seeking medical care accounted for the largest share of the indirect costs at 51% (USD 73,416,230). The productivity losses due to premature deaths accounted for 49% (USD 70,788,229). Figure 3 illustrates the distribution of the indirect costs.

Direct costs accounted for the largest share of the total economic costs at 61% compared to indirect costs at 39% (Table 2). Costs of medicines accounted for the largest costs over the total economic costs at about 29%, followed by the income lost while seeking care at 19.7%. Other costs that accounted for more than 10% of the total costs include productivity losses (19%), diagnostic tests (13%), and travel (12%). The rest of the cost categories accounted for less than 5%.

Discussion

The total economic costs were estimated at USD 372,184,585, equivalent to 10% of Kenya's total expenditure on health (THE) or 0.4% of the country's GDP. This represents a substantial proportion of overall health expenditures in a country that is still grappling with both communicable and non-communicable diseases. However, the study did not investigate how these expenditures are financed, an activity that would help to identify areas where financial protection efforts should be channeled. The study conducted in Kenya reported that patients incur catastrophic costs while seeking DM care, making it unaffordable (Oyando et al., 2020b). The unit costs reported in this study of USD 413 indirect costs per DM patient, and USD 213 indirect costs are also reported closely elsewhere (Oyando et al., 2020b).

From this study, the main drivers of the overall cost are the costs of medicines at 29%, a finding that has been reported elsewhere (Kirigia et al., 2009b; Oyando et al., 2020b; Subramanian et al., 2018b). Efforts should be made to reduce the costs of these medicines to enhance care. The high indirect costs reported, majorly in income lost by patients while seeking medical care is noteworthy at 39%. This is primarily because DM presents in the working-age population who often are at their prime from a career perspective. A study conducted in Brazil reported that indirect consumed 32.4% of the total costs(Bahia, Da Rosa, et al., 2019).

The decision to employ a cost-of-illness approach was important to enhance the robustness of our findings. Disintegrating and reporting both direct and indirect costs separately would aid the decision-makers in prioritising and targeting interventions to protect the population(Jo, 2014). Additionally, it is evident that DM impacts several actors in a health system. Adopting a societal perspective to encompass both the Ministry of health, patients, and caregivers enables this study to identify and estimate all the costs borne by the health system due to DM.

Conclusion

The scarcity of health financial data in Kenya and generally within Sub-Saharan Africa was made even more evident during the literature search exercise for this study. However, DM is a rising threat globally and especially in Africa due to the changing lifestyle patterns. The 552,400 adult cases reported in 2019 resulted in a total economic cost of USD 372,184,585, equivalent to USD 674 per diabetes mellitus patient. The total direct costs accounted for the highest proportion of the overall costs at 61% (USD 227,980,126), whereas indirect costs accounted for 39% of the total economic costs (USD 144,204,459).

Costs of medicines accounted for the highest costs over the total economic costs at about 29%, followed by the income lost while seeking care at 19.7%. Other costs that accounted for more than 10% of the total costs include productivity losses (19%), diagnostic tests (13%), travel (12%). The rest of the cost categories accounted for less than 5%. Efforts should be made to reduce the costs of these medicines to enhance care. The high indirect costs reported, majorly in income lost by patients while seeking medical care, are 19%.

This study emphasised its implications and expect to become a tool to support policymakers and stakeholders to increase knowledge, and awareness of preventive measures around non-communicable diseases including DM through lifestyle changes, adequate screening to detect the disease early, and robust measures to maintain adherence to treatment and timely management of complications.

In addition, According to 2018 figures, health spending as a percentage of GDP in Kenya stood at 5.17%, low compared to the Abuja declaration stated to allocate 15% of the national budget each year. In the same period, the average global allocation was 6.53% and from a list of 183 countries, Kenya's position was 122 as one of the countries with low healthcare allocation. There's a need to be sustained funding in the health system and overall improve the health and longevity of its population.

Capacity building on leadership principles, accountability, reporting structures, and healthcare management in partnership with public and private entities could go a long way in optimizing the various other healthcare resources for better patient management.

Conflicts of Interests:
The authors declare that they have no competing interests.

References:
1. Abdissa, D., Adugna, T., Gerema, U., & Dereje, D. (2020). Prevalence of Diabetic Foot Ulcer and Associated Factors among Adult Diabetic

Patients on Follow-Up Clinic at Jimma Medical Center, Southwest Ethiopia, 2019: An Institutional-Based Cross-Sectional Study. *Journal of Diabetes Research*, *2020*. https://doi.org/10.1155/2020/4106383

2. Ahmed, A. A., & Almulla, N. N. (2020). Economic burden of diabetes care: The economic burden on health systems of low and middle-income African countries. *WORLD FAMILY MEDICINE*, *18*(12).

3. Athanasakis, K., Kyriopoulos, I. I., Sideris, M., Rentzos, M., Evdokimidis, J., & Kyriopoulos, J. (2015). Investigating the economic burden of ALS in Greece: A cost-of-illness approach. *Amyotrophic Lateral Sclerosis and Frontotemporal Degeneration*, *16*(1–2). https://doi.org/10.3109/21678421.2014.932384

4. Atun, R., Davies, J. I., Gale, E. A. M., Bärnighausen, T., Beran, D., Kengne, A. P., Levitt, N. S., Mangugu, F. W., Nyirenda, M. J., Ogle, G. D., Ramaiya, K., Sewankambo, N. K., Sobngwi, E., Tesfaye, S., Yudkin, J. S., Basu, S., Bommer, C., Heesemann, E., Manne-Goehler, J., … Werfalli, M. (2017). Diabetes in sub-Saharan Africa: from clinical care to health policy. In *The Lancet Diabetes and Endocrinology* (Vol. 5, Issue 8). https://doi.org/10.1016/S2213-8587(17)30181-X

5. Bahia, L. R., da Rosa, M. Q. M., Araujo, D. V., Correia, M. G., dos Rosa, R. D. S., Duncan, B. B., & Toscano, C. M. (2019). Economic burden of diabetes in Brazil in 2014. *Diabetology and Metabolic Syndrome*, *11*(1). https://doi.org/10.1186/s13098-019-0448-4

6. Bahia, L. R., Da Rosa, M. Q. M., Araujo, D. V., Correia, M. G., Dos Rosa, R. D. S., Duncan, B. B., & Toscano, C. M. (2019). Economic burden of diabetes in Brazil in 2014. *Diabetology and Metabolic Syndrome*, *11*(1), 54. https://doi.org/10.1186/s13098-019-0448-4

7. Barasa, E. W., Maina, T., & Ravishankar, N. (2017). Assessing the impoverishing effects, and factors associated with the incidence of catastrophic health care payments in Kenya. *International Journal for Equity in Health*, *16*(1). https://doi.org/10.1186/s12939-017-0526-x

8. Barceló, A., Aedo, C., Rajpathak, S., & Robles, S. (2003). The cost of diabetes in Latin America and the Caribbean. *Bulletin of the World Health Organization*, *81*(1).

9. Brown, E., Natoli, N., McLaughlin, R., & Mehta, K. (2015). Pathways and Barriers to Diabetes Screening: Observations from Rural Kenya. *Procedia Engineering*, *107*. https://doi.org/10.1016/j.proeng.2015.06.096

10. Chuma, J., & Maina, T. (2012). Catastrophic health care spending and impoverishment in Kenya. *BMC Health Services Research*, *12*. https://doi.org/10.1186/1472-6963-12-413

11. Comino, E. J., Harris, M. F., Islam, M. D. F., Tran, D. T., Jalaludin, B., Jorm, L., Flack, J., & Haas, M. (2015). Impact of diabetes on hospital admission and length of stay among a general population aged 45 year or more: A record linkage study. *BMC Health Services Research*, *15*(1). https://doi.org/10.1186/s12913-014-0666-2

12. De Lagasnerie, G., Aguadé, A. S., Denis, P., Fagot-Campagna, A., & Gastaldi-Menager, C. (2018). The economic burden of diabetes to French national health insurance: a new cost-of-illness method based on a combined medicalized and incremental approach. *European Journal of Health Economics*, *19*(2). https://doi.org/10.1007/s10198-017-0873-y

13. Drummond, M. F., O'Brien, B., Stoddart, G. L., & Torrance, G. W. (1998). Methods for the Economic Evaluation of Health Care Programmes, Second Edition. In *American Journal of Preventive Medicine* (Vol. 14, Issue 3). https://doi.org/10.1016/S0749-3797(97)00069-X

14. Jo, C. (2014). Cost-of-illness studies: concepts, scopes, and methods. In *Clinical and molecular hepatology* (Vol. 20, Issue 4, pp. 327–337). Korean Association for the Study of the Liver. https://doi.org/10.3350/cmh.2014.20.4.327

15. Kirigia, J. M., Sambo, H. B., Sambo, L. G., & Barry, S. P. (2009a). Economic burden of diabetes mellitus in the WHO African region. *BMC International Health and Human Rights*, *9*(1). https://doi.org/10.1186/1472-698X-9-6

16. Kirigia, J. M., Sambo, H. B., Sambo, L. G., & Barry, S. P. (2009b). Economic burden of diabetes mellitus in the WHO African region. *BMC International Health and Human Rights*, *9*(1), 1–12. https://doi.org/10.1186/1472-698X-9-6

17. KNBS. (2020). Economic Survey 2020. In *Economic Survey 2020*.

18. Krensel, M., Schäfer, I., & Augustin, M. (2019). Cost-of-illness of melanoma in Europe – a modelling approach. *Journal of the European Academy of Dermatology and Venereology*, *33*. https://doi.org/10.1111/jdv.15308

19. Mapa-Tassou, C., Katte, J. C., Mba Maadjhou, C., & Mbanya, J. C. (2019). Economic Impact of Diabetes in Africa. In *Current Diabetes Reports* (Vol. 19, Issue 2). https://doi.org/10.1007/s11892-019-1124-7

20. Matheka, D. M., Kilonzo, J. M., Munguti, C. M., & Mwangi, P. W. (2013). Pattern, knowledge and practices of HbA1C testing among diabetic patients in a Kenyan tertiary referral hospital. *Globalization and Health*, *9*(1). https://doi.org/10.1186/1744-8603-9-55

21. Michael F. Drummond, Mark J. Sculpher, Karl Claxton, Greg L. Stoddart, G. W. T. (2015). *Methods for the Economic Evaluation of Health Care Programmes*. https://global.oup.com/academic/product/methods-for-the-economic-evaluation-of-health-care-programmes-9780199665884?cc=ke&lang=en&

22. Mohajan, H. (2013). Poverty and economic development of Kenya. *International Journal of Information Technology and Business Management*, *18*(1).

23. Murray, C. J. L., & Lopez, Alan D, . (1996). The Global burden of disease : a comprehensive assessment of mortality and disability from diseases, injuries, and risk factors in 1990 and projected to 2020,. In *Harvard School of Public Health,*.

24. Oyando, R., Njoroge, M., Nguhiu, P., Sigilai, A., Kirui, F., Mbui, J., Bukania, Z., Obala, A., Munge, K., Etyang, A., & Barasa, E. (2020a). Patient costs of diabetes mellitus care in public health care facilities in Kenya. *International Journal of Health Planning and Management*, *35*(1). https://doi.org/10.1002/hpm.2905

25. Oyando, R., Njoroge, M., Nguhiu, P., Sigilai, A., Kirui, F., Mbui, J., Bukania, Z., Obala, A., Munge, K., Etyang, A., & Barasa, E. (2020b). Patient costs of diabetes mellitus care in public health care facilities in Kenya. *International Journal of Health Planning and Management*, *35*(1), 290–308. https://doi.org/10.1002/hpm.2905

26. Park, P. H., & Pastakia, S. D. (2018). Access to Hemoglobin A1c in Rural Africa: A Difficult Reality with Severe Consequences. In *Journal of Diabetes Research* (Vol. 2018). https://doi.org/10.1155/2018/6093595

27. Peters, M. L., Huisman, E. L., Schoonen, M., & Wolffenbuttel, B. H. R. (2017). The current total economic burden of diabetes mellitus in the Netherlands. *Netherlands Journal of Medicine*, *75*(7).

28. Preis, S. R., Hwang, S. J., Coady, S., Pencina, M. J., D'Agostino, R. B., Savage, P. J., Levy, D., & Fox, C. S. (2009). Trends in all-cause and cardiovascular disease mortality among women and men with and without diabetes mellitus in the framingham heart study, 1950 to 2005. *Circulation*, *119*(13). https://doi.org/10.1161/CIRCULATIONAHA.108.829176

29. Saeedi, P., Petersohn, I., Salpea, P., Malanda, B., Karuranga, S., Unwin, N., Colagiuri, S., Guariguata, L., Motala, A. A., Ogurtsova, K., Shaw, J. E., Bright, D., & Williams, R. (2019). Global and regional diabetes prevalence estimates for 2019 and projections for 2030 and 2045: Results from the International Diabetes Federation Diabetes

Atlas, 9th edition. *Diabetes Research and Clinical Practice*, *157*. https://doi.org/10.1016/j.diabres.2019.107843

30. Stenberg, K., Lauer, J. A., Gkountouras, G., Fitzpatrick, C., & Stanciole, A. (2018). Econometric estimation of WHO-CHOICE country-specific costs for inpatient and outpatient health service delivery. *Cost Effectiveness and Resource Allocation*, *16*(1). https://doi.org/10.1186/s12962-018-0095-x

31. Subramanian, S., Gakunga, R., Kibachio, J., Gathecha, G., Edwards, P., Ogola, E., Yonga, G., Busakhala, N., Munyoro, E., Chakaya, J., Ngugi, N., Mwangi, N., Rege, D. von, Wangari, L. M., Wata, D., Makori, R., Mwangi, J., & Mwanda, W. (2018a). Cost and affordability of non-communicable disease screening, diagnosis and treatment in Kenya: Patient payments in the private and public sectors. *PLoS ONE*, *13*(1). https://doi.org/10.1371/journal.pone.0190113

32. Subramanian, S., Gakunga, R., Kibachio, J., Gathecha, G., Edwards, P., Ogola, E., Yonga, G., Busakhala, N., Munyoro, E., Chakaya, J., Ngugi, N., Mwangi, N., Rege, D. Von, Wangari, L. M., Wata, D., Makori, R., Mwangi, J., & Mwanda, W. (2018b). Cost and affordability of non-communicable disease screening, diagnosis and treatment in Kenya: Patient payments in the private and public sectors. *PLoS ONE*, *13*(1), 1–16. https://doi.org/10.1371/journal.pone.0190113

33. WHO. (2016). World Health Organization (WHO). World health statistics 2019: monitoring health for the SDGs, sustainable development goals. *World Health Organization*, *8*(5).

34. WorldBank. (2018). *Life expectancy at birth, total (years) - Kenya | Data*. https://data.worldbank.org/indicator/SP.DYN.LE00.IN?locations=KE

35. World Bank. (2018). *United Nations Population Division. World Population Prospects: 2019 Revision*. World Development Indicators.

36. World Health Organization. (2016). World Health Statistics: monitoring health for the SDGs, sustainable development goals. Geneva, Switzerland. In *World Health Statistics: monitoring health for the SDGs, sustainable development goals. Geneva, Switzerland*.

37. World Health Organization 2020. (2020). World health statistics 2020: monitoring health for the SDGs, sustainable development goals. In *World Health Organization 2020* (Vol. 43, Issue 1).

38. Zhu, B., Pang, R., Chevallier, J., Wei, Y. M., & Vo, D. T. (2019). Including intangible costs into the cost-of-illness approach: a method refinement illustrated based on the PM2.5 economic burden in China. *European Journal of Health Economics*, *20*(4). https://doi.org/10.1007/s10198-018-1012-0

Coverage of Science, Technology, and Innovation by Major Broadcast Networks in Nigeria: an Exploratory Survey

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Abstract

This investigates the nature of reportage accorded Science, Technology, and Innovation (STI) matters by the African Independent Television (AIT), Federal Radio Corporation of Nigeria (FRCN) and Nigerian Television Authority (NTA). Science communication research is only beginning to feature in Nigeria as a key aspect of academic inquiry. However, science and technology broadcast has been going on for decades. The study aims at knowing the feedback those broadcast media houses have been receiving from the public about the dissemination of emerging science, technology, and innovation matters as well as the perception by the select broadcast houses of the contributions of Nigeria's science community to specific areas of national development. The study adopts interviews as the instrument of data collection from senior correspondents directly involved with the selected broadcast houses' coverage and reportage of science, technology, and innovation. The major findings of the research are that not all the broadcast houses have science desks and science correspondents, although all the media houses under study cover STI matters; though in varying degrees and only the NTA has a science correspondent who is a science graduate. Also, the FRCN and NTA provide extensive coverage of STI matters with dedicated programs and segments for STI on their stations and correspondents covering

major STI Agencies and the Ministry of Science and Technology Headquarters. It is recommended that broadcast media in the country should show greater commitment to the coverage of STI matters since the majority of audience members depend on the broadcast media for information on all aspects of life. Moreover, a content analysis of news bulletins of the selected broadcast houses and other news media should be conducted to have more data on the coverage of STI matter.

Introduction

Science, technology, and innovation drive a sustainable economy. It is the products of science, technology, and innovation that make industrialization possible which in turn promotes science, technology, and innovation. However, society benefits less if the end-users and beneficiaries of STIs are not aware of their products. The mass media, particularly the broadcast media play a crucial role in the diffusion of the innovations made possible by STIs. This study, therefore, examined the extent to which the Nigerian Television Authority (NTA), African Independent Television (AIT), and Federal Radio Corporation of Nigeria (FRCN) covered science, technology, and innovation issues.

Nigeria, a major geopolitical entity in the West African sub-region has a landmass of 923,768 km^2 and a population of about 200 million people making it the 7th most populated country in the world (naionsonline.org, 2022). Though Nigeria gained political independence in 1960, its media history dates back to 1859 – an industry that has grown near 8.1 bn in 2019. There are over 700 television and radio stations, and well over 100 national and local newspapers with more than 180 million audience members (Oxford Business, February 2011). The significance of the media landscape especially the broadcast media is the huge opportunity for science, technology and innovation communication. The import of this for national development provides a rationale for this study.

Science, Technology, and Innovation are catalysts of development in modern societies. Products or results of emerging Science, Technology and Innovation (STI) are what give a country a competitive edge over others. However, without the dissemination of the results or products of emerging science, technology and innovation, little or no benefits would be derived from such efforts, especially if those who are in the position to commercialise or adopt such innovations are not in the know. It is therefore in this situation that the broadcast media play an important role in communicating STI to relevant stakeholders and the public. The problem has however been that, since science

communication is an emerging field itself in Nigeria, observation has shown that there is an acute deficit of research output in the area. Therefore, the key questions that this enquiry poses are several. To what extent have the broadcast media been communicating efforts and products of science, technology, and innovation in Nigeria? Have the relevant stakeholders in the Nigerian science community been engaging the broadcast media to inform the public of their activities and strides? Have the broadcast firms been cooperating with the science community in this regard? These constitute the concerns of this study.

The objectives of this study are to:

i. examine the extent to which major networks in Nigeria broadcast communicate STI efforts with the public;
ii. find out the extent to which select broadcast media have been cooperating with the science community to disseminate efforts in the area of science, technology and innovation;
iii. ascertain the extent of commitment by the select broadcast media to integrate science, technology and innovation contents into programming;
iv. determine the sorts of feedback the broadcast media have been receiving from the public about the dissemination of STI matters; and,
v. evaluate the perception by the select broadcast media of the contributions of Nigeria's science community to specific areas of national development.

a. Five research questions are posed for this study.

vi. To what extent have major Nigerian broadcast networks communicated STI efforts to the public?
vii. In what ways have the select broadcast media been cooperating with the science community to disseminate STI in Nigeria?
viii. To what extent have the select broadcast media demonstrated commitment to integrate science, technology, and innovation contents of their programming?
ix. What sorts of feedback have the select broadcast media been receiving from the public about the dissemination of STI maters?
x. What is the perception by the select broadcast media of the contribution of STI efforts in Nigeria to specific areas of national development?

This study explores three broadcast stations, namely: African Independent Television (AIT), Nigerian Television Authority (NTA) and Federal Radio Corporation of Nigeria (FRCN) on how they cover issues about STI and the extent members of the science community engage them in the dissemination of STI. The structured interview was adopted to gather

information from science correspondents and heads of science desks in those stations.

Limitations of the Study

Considering the fact that this study was an exploratory one and it adopted by the structured interview as its research instrument, data so generated may not be sufficient to address all aspects of the subject matter. Moreover, researchers in this did not enjoy cooperation from appropriate personnel in the Channels TV which we originally included in the study. Moreover, the interviewees spoke generally about science, technology and innovations without specific reference to any aspect of STI as defined in the study. However, the result from this study would be useful in giving the various stakeholders a general idea about the extent of coverage and content of science, technology and innovation in the broadcasts of these stations.

Definition of Concepts

i. Communication: Communication as a social phenomenon is a fundamental human activity and behaviour that involves the sharing of ideas, facts, symbols, images and other meanings between sources or senders of messages and receivers or destination of those messages. Communication often involves sharing of meaningful messages with oneself (intrapersonal); with others (interpersonal); with groups/organisations (group/organisational); with large, assembled audiences (public), through mechanical or electronic channels with large, heterogeneous, and scattered audiences simultaneously (mass communication); through mediated/ digital/virtual means (new media) or through ethnic/oral/limited means (traditional communication) (Wilson, 2006). This study investigated the broadcast media employed in the sharing of messages related to emerging science, technology, and innovation between the sources and receivers of those messages.

ii. Emerging Science, Technology, and Innovation: Emerging STIs are newly developed, highly sophisticated, advanced and refined, as well as ultra-innovative fields of science and technology meant to propel human developments in education, health, ecology, trade and industry, agriculture, transportation, security, etc. Examples of emerging science and technology slated for exploration are synthetic biology, proteotronics, nutrigenomics, gastrophysics, agrobiotechnology and nanotechnology. Others are artificial intelligence/robotics, epigenomics, highspeed land transportation, agrodrones, and neuroparasitology (Dvorsky, 2013). This list is not exhaustive. However, this study concentrated on areas that bear relevance for Nigeria's national development.

iii. National development: Development is appropriately conceptualised as those indices of human efforts that promote health, safety, education, clean environment, gainful employment, reduction of poverty, human suffering, and insecurity, and comfortable and affordable standards of living (Soola, 2002). In other words, national development in the context of this study consists of all the efforts in the area of emerging STI geared toward improving the livelihood of Nigerians. How, for instance, is the emerging agrobiotechnology championed by Nigeria's biotechnology agency being deployed to address Nigeria's food security aspiration? How is Nigeria's Institute involved in advanced engineering and materials research using nanoscience and nanotechnology to solve access to clean water or health problems? To what extent are these STI development efforts promoted by the broadcast media in Nigeria? This research was earmarked to provide answers to these questions.

iv. Coverage: This refers to the general reportage of all matters or issues relating to emerging science, technology and innovation. This includes, but not limited to synthetic biology, proteotronics, nutrigenomics, gastrophysics, agrobiotechnology and nanotechnology. Others are artificial intelligence, robotics, diodynamics, epigenomics, high speed land transportation, agrodrones and neuroparasitology, among others.

Every society craves for development in all ramifications. One of the indices of any society's development is how it ranks in emerging science, technology and innovation. This study becomes important because its findings would provide the basis for assessing the extent of the progress Nigeria is making in the STI sectors. The findings might become useful in the creation, adoption, or modification of appropriate science, technology and innovations policy for Nigeria. It would also provide additional impetus for further or new research in this direction.

The study derives its foundation in the diffusion of innovation, agenda setting, and framing theories of communication.

Diffusion of Innovation Theory: Baran and Davis (2009: p. 271) recall that Everett Rogers "assembled data from numerous empirical studies to show that when new technological innovations are introduced, they pass through a series of stages before being widely adopted. First, most people become aware of them, often through information from the mass media. Second, the innovations will be adopted by a very small group of innovators, or early adopters. Third, opinion leaders learn from the early adopters and try the innovation themselves. Fourth, if opinion leaders find the innovation useful, they encourage their friends – the opinion followers. Finally, after most people

have adopted the innovation, a group of laggards, or late adopters, makes the change." This process was not only found applicable to agricultural innovations, but it holds a promise for emerging science, technology and innovations both in developed and developing societies. The broadcast media play a very important role in creating awareness about and motivating the citizenry to adopt innovations.

Agenda setting theory: Bernard Cohen is generally credited with the theory of agenda-setting. According to him, "the press is significantly more than a purveyor of information and opinion. It may not be successful much of the time in telling people what to think, but it is stunningly successful in telling its readers what to think about" (Baran and Davis, 2006, p. 316). Through coverage of emerging science, technology and innovations, the broadcast media to a great extent assist their audience members to understand, appreciate, and perhaps adopt new ideas and discoveries presented in the programmes.

Literature Review
From the Laboratory to the Society: Science in Broadcast Messages and Development

Science, technology, and innovation (STI) play an indispensable role in the socio-economic transformation of any modern society, they further enable the creation of new knowledge technologies which engender wealth creation, social welfare, and all-round competitiveness. "At the economic front, science, technology, and innovation play a critical role in ensuring that productivity growth occurs, and that the economy is progressively transformed into a knowledge-based economy" (Wycliffe and Ayuya, 2013, p. 458). They argue that economic development of nations depends largely on how these nations conduct and apply science and technology in their societies and that scientific and technological developments offer tremendous opportunities for economic growth, poverty reduction, and human development. In related researches particularly affecting Nigeria, Batta, Ashong, and Obot (2014) content analysed Nigeria's elite and popular press with a focus on framing and sociopolitical involvement as they relate to science, nano-science and nanotechnology. The results showed that there was a near absence of nano-science content in the papers whereas other science subjects were common. It would be interesting to note if the situation is different with the electronic media. In another similar enquiry on interest, awareness, and involvement of Nigerian university academics in science communication with particular reference to the utilization of the broadcast media, Batta, Ali, Ekeanyanwu, Obot, & Batta (2021) found out that a dismal 5.6% of science/technology academics along with communication and media scholars neither presented nor participated in science broadcast on radio and in television. The

importance of communicating science, technology, and innovation in a developing country such as Nigeria has been loudly canvassed by Falade, Batta, and Onifade (2020) when they state that, "science communication… has an important role to play in overcoming the many development challenges facing the Nigerian State in agriculture, health, industry and environment" (p. 632.

Were it not for the mass media, most people would either be unaware of or/lack understanding of the developments made or products from science, technology and innovation. Even to many people in the media, providing information about the latest discoveries about science, technology, engineering and mathematics (STEM) is a challenging endeavour. Therefore, science journalists should be a little bit of 'scientists' by themselves to be able to understand what is happening in the science arena. Even if the journalists did not study any of the life sciences: physics, technology, medicine or engineering, they should think and ask questions from a layperson's perspective.

The way the media report on emerging science, technology and innovations influences public reaction to those issues. According to Ancilloti, Holmberg, Lindfelt, and Eriksson (2015) the media can influence public attitudes and therefore an important object of study. Moreover, how a new technology is perceived by the public influences the manner in which its products and applications would be received. In Shipman's (2015) opinion, if news stories point to controversies in the science domain on an emerging technology, the audience who respect the credibility of scientists on scientific objects are predisposed to seeing the emerging technology as risky.

Similarly, Liang, Yi-Fan Su, Yeo; Scheufele, Xenos, Nealey, and Corley (2014) acknowledge that public communication about science is up against several new challenges, including the heightened intricacies of research areas and the fading of conventional journalistic infrastructures. In view of the important role the science journalist and the mass media as a whole play in science communication, they must understand efficiently the promise and challenge that emerging science, technology and innovation present to the society. It is in this regard that Cacciatorre, Anderson, Choi, Brossard, Schedufele, Liang, Ladwig and Xenos (2012, p. 3) state that, "for lay publics attempting to make sense of scientific issues, the mass media are often the most accessible source for information and opinions. The media act as cues for how lay audiences think about emerging scientific issues". The cues that the general public receives are most likely based on the types of frames employed around a particular issue. Quoting Scheufele and Tewksbury (2007), Cacciatore, Anderson, Choi, Brossard *et al.* (2012, p. 3) state that framing refers to, "modes of presentation that journalists and other

communicators use to present information in a way that resonates with existing underlying schema among their audience".

According to Groboljsek and Mali (2012, p. 31), "media coverage of and public attitudes to new emerging technologies focus on three outcome variables: the dominant frame, general support for the emerging technology, and the perception of the risks versus benefits." These approaches to science communication is obviously a complete perspective on emerging science, technology and innovations. The volume and nature of science coverage to a great extent determine or influence public attitude to STI. Public acceptance of any aspect of technology largely depends on what is presented about that technology. Buttressing this, Groboljsek and Mali (2012, p. 38) agrees that, "the impact of the new media has tended to be crucial to shaping public discourse about nanotechnology when framing the debate on the benefits and risks. These processes may also be referred to as agenda-setting or priming powers of the media.

In covering or reporting emerging science, technology and innovations, key sources or actors are usually identified. These actors include scientists, journalists themselves, policy makers and civil society organisations. Scientists are central to any reportage on STI. They provide most of the information through their researches or discoveries on any area of science. Through their discreet investigations, journalists themselves can become key actors or sources of information on science-related matters. In the 1980s, for example, it was a journalist who broke the news of the dumping of toxic wastes in the village of Koko in the defunct Bendel State, now in Edo State, Nigeria and the health hazards people in the community were experiencing. Many cases abound where journalists are attributable sources of STI information (Ogbodo, 2009).

Political actors, in and out of government, play a crucial role in the chain of science communication. Often they do this as policy makers or law makers as it affects science, technology and innovation. In any case, they provide inputs for or perspectives to science coverage. Also, civil society organisations such as environment or consumer protection organisations tend to adopt a critical approach, and that for good reasons, to controversial, or almost all, scientific/technological developments.

Some challenges have been identified in communicating science, technology and innovations. These include knowledge, interest and engagement deficits. In Boholm and Larsson's (2019) opinion, lack of knowledge and engagement among the public makes information difficult for the public to comprehend and create a disinterest among the citizenry towards emerging science, technology and innovation. Others are the fact that the public is heterogeneous with different values and emotions and these impact

greatly and variously on their researches towards products of science. This calls for building of trust with and transparency towards the public.

Moreover, many members of the science community live or appear to live and conduct their business in isolation. They may not often interact with journalists during the process of their research and development. Even after their researches had been concluded, many scientists do not engage the mass media in disseminating their efforts. It is in view of this that Aiswarya, Sanju, and Babu (2018) state that for people to know about science, the media should play a great role. It is the responsibility, nay obligation of the media to report the complicated scientific researches and deliver the same to the public in a simple manner to enable them understand. The mass media create awareness about new scientific findings and help them understand and appreciate such findings. The media serve as a link for the scientists, the public and the government.

Extending the discourse and quoting Zhao (2014); Aiswarya, Sanju and Babu (2018) identify some of the challenges of science communication among African media to include: complexities surrounding scientific matters, lack of capacity among most journalists to report STI issues, lack of investment in capacity building of journalists, fear of being misquoted or quoted out of perspective, and lack of trust between scientists and journalists. Others are conflict of interest, commercialisation, sensationalism, and negativity.

Coverage of science, technology and innovation in a few countries can provide an insight into some patterns of such reportage. In their study, Ramalho, Polino, and Massarani (2012) found out that medical science and health were the ones which received the greatest attention in the main Brazilian TV newscast (44.1%). This was followed by "Exact Sciences and Earth Sciences" – 12.9%; engineering, technology, and biological sciences (11.7%); environmental sciences – 10.4%. Focusing on 'Synthetic Biology: Friend and Foe?', Jewett and Caplan (2021) noted that scientists have merged biology, chemistry, genetics and other sciences to create new, synthetic organisms.'

On a survey entitled, "Public Accepts Nano risks if benefits are high," Anna Salleh of the ABC (2006) found that people perceived nanotechnology as less risky and more beneficial than a number of other technologies such as genetically modified organisms, pesticides, chemical disinfectants and human genetic engineering. Technology has also increasingly impacted positively on the broadcast industry in a unique way. An example is the 'use of Drones in Broadcasting.' According to Ayranci (2017), drones offer broadcasters and journalists many benefits that traditional news-gathering techniques cannot, by allowing the journalists to get much closer to the subject than regular cameramen. The cameras attached to the unmanned aerial systems (UAS)

capture incredible videography and photography from such vantage points, which were previously possible, if at all, by helicopters and zeppelins, at a dramatically higher operation cost compared to drones.

In a "comparative analysis of the news coverage and content of science and technology in two English Dailies in India, Verghese (2016) discovered that the two dailies gave the highest percentage of coverage to environment category (environment, nature, ecology and evolution) with 29.74%, followed by medicine and health with 20.49% and astronomy and astrophysics (14.1%) and the least coverage was given to physical sciences (1.40%). Also, in another study on, "Coverage of Science News in the Three National Dailies in India, Aiswarya, Sanju and Babu (2018) discovered that issues bordering on behaviour received the highest coverage by the three national dailies (42.4%), followed by health with 40.4% reportage and technology coming third with 35.2% coverage, while the fourth position was occupied by environment with 38.7% coverage.

It could be said that the goal of emerging science, technology and innovation is to bring about the improvement in the standard of living, solve problems confronting humanity and enhance the wellbeing of people. Without the mass media, the potential beneficiaries will not get to know about the products of STIs. Therefore, the mass media play a vital role in STI diffusion.

Method

The interview schedule was the instrument of data collection, and was utilised to analyse the data. An-eight item schedule was used to gather information from senior correspondents directly involved with the coverage and reportage of science, technology and innovation by the affected broadcast houses. The following were the interviewees: Mr Chukwuma Agbanisi - Defense Correspondent/Editor- FRCN and Rabi Momoh – Science Correspondent – FRCN; Mr. Mohammed Ali – Assistant Director, News – NTA Headquarters, Abuja; Roluke Ogundele – ICT Correspondent – AIT and Sola Jayesimi – News Editor, AIT. The interviews which were conducted between May and December 2021, were recorded and transcribed for analysis.

The interviews had as their subject matters the existence of a science, technology and innovation desk in those broadcast media houses, if their editor/science correspondent were science journalists, the extent the media firm cover or report STI matters in terms of newshole, airtime/programme schedule and the proportion of their general news coverage that deals with emerging STI matters.

Others were the extent to which STI agencies seek coverage/reportage of emerging STI matters, extent the broadcast media houses source reports on STI from the relevant agencies in Nigeria, extent to which universities and STI centres receive coverage/reportage of their activities from those media firms,

the sorts of feedback the broadcast media houses receive from the public about their dissemination of STI matters and media perception of the contributions of STI agencies to specific sectors of national development.

Brief Profiles of the Selected Broadcast Stations
African Independent Television (AIT)

African Independent Television (AIT), also known by its acronym AIT, is a privately owned Television broadcaster in Nigeria. It operates free to air in Nigeria as the largest privately operated terrestrial television network with stations in twenty-four out of thirty-six States in Nigeria. It was founded in 1996 with Headquarters in Abuja and its parent-organisation is Daar Communications (AIT, 2022).

Nigerian Television Authority (NTA)

The Nigerian Television Authority (NTA) is a Nigerian government-owned and partly commercial broadcaster established in May 1977 with headquarters in Abuja. It broadcasts nationwide with stations in all the thirty-six States of the Federation and Abuja, the Federal Capital. It is the legal successor of all previous regional and state governments-owned television stations in Nigeria. These included the Western Nigerian Government Broadcasting Corporation (WNTV) established in October 31, 1959, Radio – Kaduna Television (RKTV), the Nigerian Broadcasting Corporation (NBC) established by the Federal Government in 1962, the Midwest TV established in 1972 and the Benue-Plateau Television Corporation (BPTV) established in 1974. It became the first television station to launch regular/permanent colour broadcast in Africa. The colour test transmission began on October 1, 1975. BPTV was later rebranded as NTV- Jos. (NTA, 2022).

Federal Radio Corporation of Nigeria (FRCN)

The Radio station known as Federal Radio Corporation of Nigeria (FRCN) was founded in 1933 by the British Colonial Government. Named the Radio Diffusion Service (RDS), it allowed the public to hear the British Broadcasting Corporation's Foreign Radio Service broadcasts in certain public locations over loud speakers.

In April 1950, the "Radio Station" became the Nigerian Broadcasting Service and introduced radio stations in Lagos, Kaduna, Enugu, Ibadan and Kano. This service was reorganised into the Nigerian Broadcasting Corporation (NBC) on April 1, 1957 by act of parliament. Its mission was to "provide public service." In 1978, during the General Olusegun Obasanjo's regime, the Federal Corporation of Nigeria Decree No. 8 of April, 1978 was promulgated. By that Decree, the NBC had its name changed to Federal Radio Corporation of Nigeria (FRCN). The Decree also stipulated that NBC stations in each of the then nineteen States of the Federation be handed over to the

respective governments of the States in which they were located, as their bonafide property (FRCN, 2022).

The AIT, FRCN and NTA were selected for the study because of the network of coverage.

Data Presentation

Table 1: Responses by Broadcast Stations on Reportage/ Coverage of Science, Technology and Innovation

0	Existence of a Science Desk	Existence of a Science Correspondent	Extent of STI Coverage	Proportion of Coverage of Emerging STIs	Proportion of General Coverage dealing with STIs	Extent to which STI Agencies seek Coverage of STI Matters	Extent Broadcast Stations Source their STI reports from Relevant Agencies	Coverage of Universities and STI Centres by Broadcast Station	Feedback on Stations' Coverage of STI Matters
AIT	NO	NO	Unable to ascertain	As often as invited	Routine and general	As often as the need arises	Often	Whenever invited	Not often as it should be. Not encouraging
FRCN	Yes	Yes	Extensive	Integral to general news coverage	STIs occupy a significant proportion of our general news coverage. STI feature daily in all our bulletins	We receive frequent invitation and do oblige them; in addition to the unsolicited coverage we give them. We service all the 17 STI-related Agencies including the Ministry of Science and Technology Headquarters	We frequently and routinely do so. We do not wait for their invitation. We also do special reports on trending STI issues	We offer coverage to all strata of the society. We do realise the role played by Universities and STI centres. We frequently invite them to serve as resource persons on our programmes, especially on STI matters.	Frequently and especially after we carried reports about innovations. For example, after we aired a report about remedy for epilepsy. We frequently get emails, phone calls, etc.
NTA	YES	YES. B.Sc. in Microbiology	Significantly. There is a dedicated science and Technology programme called "TECHHUB".	Very significant. There is a science reporter assigned to the Federal Ministry of Science, Technology, and Innovation	Significant. 5 Minutes of all the general news of the station is dedicated to news and issues from the Ministry of STI and STI related issues	Most STI agencies do seek and get coverage for STI matters	This is routinely done, given that we have a science desk, and dedicated science reporters to cover STI beats.	As much as possible, provided that such information is meant to be put in the public domain.	Basically commendation for creating awareness about STI matters.

Table 2: Responses on Ways STI Agencies have Contributed to National Development in various Sectors of the Polity

Station	Literacy and Education	Health and Wellbeing	Food Security and Agriculture	Environmental Protection	Water and Sanitation	Communication and Information Technology	Economic Empowerment/ Poverty Alleviation	National Security
AIT	The impact of STO is to some extent	STIs have contributed significantly	STIs have done a lot in this regard	STIs have contributed significantly	This is another area STIs have made positive impact	STIs have scored high in this sector	STIs have gained a lot of mileage in this sector	STIs have not done much in this sector. They don't open up.
FRCN	Ministry of S & T has done a lot to promote the study of Science and Technology, e.g. through sponsorship of "Young Presidential Award" science competition. The ST infrastructure have aided online learning.	Researches in this area are hampered by inadequate funding	STI innovations have led to improved agricultural inputs and productivity. 'Open forum on biotechnology' sponsored a programme on FRCN.	A lot of information has been disseminated on safe environmental practices, climate change issues, among others	A lot of progress has been made in the areas of safe and accessible potable water supply	STI agencies have made a lot of progress in this sector. The Galaxy backbone which has improved communication in the country is a product of STIs	STIs have contributed to economic empowerment and poverty alleviation through creation of opportunities for entrepreneurship, startups, small and medium scale enterprises in the telecom and POS financial services.	STIs have led to repairs and upgrading of grounded fighter aircraft. We now have locally made and purpose-built military vehicles used in the fight against terrorism `
NTA	Development of education-related software has helped in the area of acquisition of knowledge and learning	There has been improvement in healthcare delivery due to several health technologies, and innovations in drug manufacturing	New farm implements and improved seedlings have been made available to boost food security and agriculture	Improvement in safer means of preserving the ecosystem have been developed	STIs have made safer water available	STIs have made the world a smaller global village. More and cheaper access to internet services have been made possible.	Economic opportunities have been expanded courtesy of STI	National security and fight against terrorism have been improved through local advances in STIs through drones, satellite, information and communication technology and artificial intelligence.

Discussion of Findings

Data gathered through the structured interviewed with select correspondents with the three broadcast stations are used here to answer the following research questions of this study.

To what extent have the Nigerian science community been engaging the select broadcast media to communicate the STI efforts to the public?

All the respondents confirmed that they frequently receive requests from STIs agencies for coverage of their activities as well as invitations to events that border on STIs. The Federal Radio Corporation of Nigeria (FRCN) for instance stated that it services all the 17 – STI related agencies spread all over Nigeria. On its part, the African Independent Television (AIT) stated that the STI agencies seek coverage as often as the need arises, while the Nigerian Television Authority (NTA) also affirmed that most of the STI agencies do seek and receive coverage of emerging STI matters. This is a departure from the general tendency for members of the science community to live in isolation and removed from the media. This indicates the fact that the volume and nature of science coverage to a great extent determine or influence public attitude to STI. Moreover, public acceptance of any aspect of technology largely depends on what is presented about that technology.

This vindicates the fact that but for the mass media, most people would either not be aware of or understand the developments made or products from science, technology and innovations. This has been emphasised by Analloti, Holmberg, Lindfelt and Erikson (2015) that the media can influence public attitudes toward emerging science, technology and innovations. This also buttresses the relevance of the theory of diffusion of innovation.

In what ways have the select broadcast media been cooperating with the science community to disseminate emerging science, technology, and innovations?

The findings show readiness and commitment of the select broadcast media to cooperate with the science community to promote emerging science, technology and innovation. This is confirmed by the fact that most of the broadcast stations - FRCN and NTA for example have science desks and science correspondents. Of particular interest is the fact that the science correspondent at the NTA holds a B.Sc. degree in Microbiology. This strengthens the capacity of the correspondent to achieve greater efficiency and productivity in science communication. With this, NTA has not only justified its agenda setting role of ensuring that through its coverage of emerging science, technology and innovations, its audience members get to understand, appreciate, and adopt new ideas and discoveries presented in the broadcasts. Moreover, the broadcast stations confirmed that they frequently receive

invitations from the STI agencies for coverage, to which they have been obliging. This also buttresses the fact that were it not for the mass media, most people would either be unaware of or lack understanding of the developments made or products from STI. This has underscored the diffusion of innovation theory which holds that, when new technological innovations are introduced, they pass through a series of stages before being widely adopted. First, most people become aware of them through information from the mass media… (Baran and Davis, 2009: 271).

To what extent have the select broadcast stations demonstrated commitment to disseminate science, technology, and innovation contents of their programming?

There was a unanimous commitment by the broadcast media in this regard. Africa Independent Television (AIT) spotted that though it cannot ascertain the extent of their STI coverage, there has been a serious and significant coverage of STI matters in their news bulletins. The FRCN described its commitment as being extensive, while NTA held that the STI contents of their programmes were significant. It also added that there is a dedicated science and technology news and current affairs programme on their station named "TECHHUB".

On the proportion of coverage of STI, AIT stated that it does it as often as they invited. For the FRCN, STI is integral to its general news coverage. The NTA in particular pointed out that it has assigned a science reporter to cover the Ministry of Science, Technology and Innovation Headquarters, Abuja. This is a good testimony of its commitment to promoting the science, technology and innovation through its programmes.

Regarding the proportion of reports dealing with STI, AIT said that its STI contents is generally routine. Such categories of reports feature daily in all the FRCN news bulletins, while five minutes of all the general news programmes on NTA are dedicated to news and issues emanating from the Ministry of Science and Technology. This is a clear indication of the commitment by NTA to include the STI contents of the news.

The extent to which broadcast stations source STI information from relevant agencies also indicate the commitment to integrate STI contents of the news. The AIT stated that it does so very often, the FRCN said it was routine, without waiting for invitation as well as when the station does special report on trending STI issues. For NTA, the fact that it have a science desk and dedicated reporters to cover STI beats is evidence of its commitment to disseminate STI information.

Coverage of universities and STI centres also provide broadcast stations the avenues to project STI contents of their news. AIT said it always do so when invited. FRCN said it provides coverage to all sectors of the

economy including universities and STI centres in realisation of the important role universities and STI centres play. Moreover, experts from such places are often invited as resource persons to all news and current affairs programmes of FRCN. On its part, NTA said that universities and STI centres are often consulted on issues of public interest. It is in this light that Cacciatorre, Anderson, Schedufele, Liang, Ladwig and Xenos (2012, p. 3) affirms that, "for lay publics attempting to make sense of scientific issues, the mass media are often the most accessible source for information and opinions. The media act as cues for how lay audiences think about emerging scientific issues." This is where and how framing theory plays out. This also finds correlation with the findings by Ramalho, Polino and Massarani (2012) to the effect that medical science and health were the ones which received the greatest attention in the main Brazilian TV Newscast. Both the agenda setting and framing theories have been justified here.

What sorts of feedback have the select broadcast stations been receiving from the public about the dissemination of emerging STI matters?

The AIT said the feedback it has been receiving from the public has not been frequent and encouraging as it should be. On its part, the FRCN said feedback received from the public has been frequent, especially after carrying reports about innovations in the area of remedies for health conditions or challenges as it was the case with their report about pharmaceutical intervention for epilepsy. The NTA said the feedback received have been commendations for the awareness it has created on and about STI matters. This resonates with what Boholm and Larsson (2019) stated: "lack of knowledge and engagement among the public makes information difficult for the public to comprehend and creates a disinterest among the citizenry towards emerging science, technology and innovation." The volume of feedback a broadcast station receives may be directly proportional to the extent to which the medium has disseminated STI matters.

What is the perception by the select broadcast media of the contributions of Nigeria's STI engagements to specific areas of national development?

This assessment was done under the following areas: literacy and education, health and wellbeing, food security and agriculture, environmental protection, water and sanitation, communication and information, economic empowerment and poverty alleviation as well as national security.

Literacy and Education: In AIT's submission, Nigeria's science community has helped to some extent. For the FRCN, the Ministry of Science and Technology has done a lot to promote Science and Technology through their sponsorship of the "Young Presidential Award" Science competition. Moreover, the improved STI infrastructure has aided online learning. For

NTA, the development and advancement in educational software has helped in the acquisition of education.

Health and Wellbeing: For AIT, the science community has contributed significantly. Also, to FRCN, researches in this area have been hampered by inadequate funding and in the assessment of NTA, there has been some improvement in health-care delivery due to several technological innovations in drug manufacturing.

Food Security and Agriculture: The African Independent Television (AIT) stated that the Nigerian science community, has done a lot in this regard. To FRCN, STI innovations have led to improved agricultural inputs and productivity. One of such examples is the sponsorship of Open Forum on Biotechnology for the station. For NTA, genetic modifications for improved seedlings have been made available to boost food security and agriculture.

Environmental Protection: For AIT, the Nigerian science community has contributed significantly to environmental protection. FRCN noted the science community has been disseminating a lot of information on safe environmental practices, climate change issues, among others. On its part, NTA stated that there has been some improvement in safer means of preserving the ecosystem.

Water and Sanitation: In this area, AIT stated that the Nigerian Science Community has made a positive impact. FRCN held that a lot of progress has been made in the area of safe and accessible portable water supply. NTA agreed that the Nigerian science community has made safer water available.

Communication and Information: AIT stated that STI has scored high in this sector. FRCN also agreed that there is a lot of progress in this area as well. For example, the adoption of the Galaxy Backbone has improved communication and information in the country. Also, NTA assessed that the Nigerian science community has made Internet access and services more accessible and affordable.

Economic Empowerment and Poverty Alleviation: AIT noted that it has made a lot of mileage in this sector. FRCN stated that STI agencies have contributed a lot to economic empowerment and poverty alleviation through the creation of opportunities for entrepreneurship, especially in the telecommunication and franchise banking services, such as POS services. The NTA pointed out that economic opportunities have been expanded through STI.

National Security: In the estimation of African Independent Television (AIT), the Nigerian science community has not done much in this sector, and may be so because security agencies do not open up to interact with the media. For FRCN, STI agencies have helped in the repairs and upgrading of grounded Nigerian fighter aircrafts, to the extent that there are locally-made

and purpose-built military vehicles which have been deployed in the fight against terrorism in the country. Similarly, NTA noted that national security and war against terrorism have improved through advancement in STI.

On the whole, both the FRCN and NTA reported extensive interactions with the Nigerian science community and that explains their robust assessment of the contributions of the major players in the Nigerian science community to national development. This perception may be influenced by and limited to how much the broadcast stations know about or are carried along by members of the science community. This is because many members of the science community live or appear to live and conduct their business in isolation. They may not often interact with journalists during the process of their research and development. Even after researches had been conclude, many scientists do not engage the mass media in disseminating their efforts. Therefore, the relevance or efficacy of the diffusion of innovation theory becomes frustrated.

Conclusion

From this study, it became apparent that there is a lot more to be done in science communication in Nigeria. There is a lot of information gaps involving the mass media and the public. STI researchers appear not to be opening up and collaborating with the broadcast media which are the major avenues of information for most members of the public. This communication gap and information deficit have manifested in the little or no feedback between the public and the broadcast media over STI coverage. Moreover, the perception by the media of the contributions of STI agencies is to a great extent determined by the extent of interactions and collaboration that exist between the media and STI agencies.

Recommendations

In view of the important role played by STI agencies and research centres, more funding for research and development should be provided. Dissemination of activities by STI agencies, and research centres should improve, because this is the only means through which their efforts would be made known to the public for eventual adoption and commercialisation. Moreover, since STIs are not done in a vacuum, media coverage should be mainstreamed in the research and development stages so that the potential beneficiaries would know about the opportunities and risks involved in such activities and products.

Acknowledgement

References:

1. Aiswarya, C. T., Sanju, R. and Babu, S. Dinesh (2018). Coverage of Science News in the Three National Dailies. *International Journal of Pure and Applied Mathematics.* Volume 119, No. 12.

2. Ancillotti, M., Holmberg, N. Lindfelt, M. & Eriksson, S. (2015). Uncritical and Unbalanced Coverage of Synthetic Biology in the Nordic Press. *Public Understanding of Science*, 26(2). Doi: 10.1177/0963662515609834.

3. Ayranci, Z, B. (2017). Use of Drones in Sports Broadcasting. Entertainment and Sports Law, issue 3, 79, 93.

4. Bankole, F., Batta, H., & Onifade, D. (2020). 'Nigeria battling the odds: Science Communication in an African State.' In: T. Gascoigne, B. Shiele, J. Leach, M. Riedlinger; with B. Lewenstein, L. Massarani, & P. Broks (Eds.) Communicating Science: A global perspective. (pp. 615-640). Canberra: Austrian National University Press.

5. Baran, S. J. and Davis, D. K. (2009). *Mass Communication Theory: Foundation Ferment, and Future.* (4th ed.). Belmont, CA: Thomson/Wadsworth.

6. Batta, H., Ali, H. M., Ekeanyanwu, N. T., Obot, C. & Batta, N. N. (2021). Interest and awareness of science communication in select academic programmes of six Nigerian universities. *SAU Journal of Management and Social Sciences,* 6(3): 1 – 21.

7. Batta, H., Ashong, C. & Obot, C. (2014). Science, nano-science and nano-technology content in Nigeria's elite and popular press: Focus on framing and sociopolitical involvement. *New Media and Mass Communication,* 31: 9 – 19.

8. Boholm, A. & Larsson, S. (2019). What is the Problem? A Literature Review of Challenges Facing the Communication of Nanotechnology to the Public. *Journal of Nanoparticle Research,* 21(86). https://doi.org/10.1007/s/1051-019-4524-3.

9. Cacciatore, M. A., Anderson, A. A., Choi, D, Brossard, D., Scheufele, D. A., Liang, X., Ludwig, P. J., Xenos, M, & Dudo, A. (2012). Coverage of Emerging Technologies: A Comparison between Print and Online Media. *New Media and Society,* 0(0)1-21.

10. Callinan, P. A. & Feinberg, A. P. (2006). The Emerging Science of Epigonomics. *Human Molecular Genetics*, 15(1) R. 95-R101. Doi: 1093/hmg/dd1095.

11. African Independent Television (2022). About. Available at: https://www.nta.ng. Retrieved on January 20, 2022.

12. Nigerian Television Authority (2022). About. Available at: https://www.nta.ng. Retrieved on January 20, 2022.

13. Federal Radio Corporation of Nigeria (FRCN) (2022). Radio Nigeria. Available at: https:radionigeria.gov.ng. Retrieved on January 20, 2022.

14. Dvorsky, G. (2013). 11 Emerging scientific fields that everyone should know. Retrieved from http://www.google.com/amp/s/io9.igizmodeo.com/11-emerging-scientific-field-that-everyone-should-know-598729 on October 24, 2019.

15. Groboljsek, B., & Mali, F. (2012). Daily Newspapers View on Nanotechnology in Slovenia. *Science Communication*, 34(1): 30-56. Doi: 10.177/107555470 11427974.

16. Jewett, M. and Caplan, A. (2021). Synthetic Biology: Friend or Foe? *Radio Health Journal*.

17. Liang, X., Yi-Su, L., Yeo, S. K., Scheufele, D. A., Brossard, D., Xenos, M., Nealey, P. and Corley, E. A. (2014). Building Buzz: (Scientists) "Communicating Science in New Media.' *Journalism and Mass Communication Quarterly.* Vol. 9 (4): 772 – 791. Doi:10.1177/1077699014550092.

18. Nationsonline.org (2022). Nigeria. Retrieved from https://nationsonline.org/oneworld/ Nigeria.htm.

19. Ogbodo, S. G. (2009). 'Environmental protection in Nigeria: Two decades after the Koko incident.' Annual survey of International Corporate Law, 15(1), 2. Retrieved from digitalcommons.law.ggu.edu/au/survey/vol.15/iss1/2. On 23 June, 2022.

20. Oxford & Business Group (2020). 'Nigeria's media landscape undergoes rapid change.' Retrieved fromhttps://oxfordbusinessgroup.com/overview on 23 June, 2022.

21. Ramalho, M., Polino, C. and Massarani, L. (2012). From the Laboratory to Prime Time: Science Coverage in the Main Brazilian TV Newscast. *Journal of Science Communication, JCOM,* 11(2). Doi: 10.22323/2.102020.

22. Salleh, A. (2006). *Public accepts Nano Risks if Benefits are High*. ABC.

23. Shipman, M. (2015). 'Nuance or Conflict? How News Stories can Influence Perceptions of Emerging Technologies'. Research and Innovation. https://news.ncsu.edu.

24. Soola, E. O. (2002). Development communication: The past, the present, and the future: *Communicating for development purposes* (Ed.) E. O. Soola (-pp. 9 – 29). Ibadan: Kraft Books Ltd.

25. Verghese, S. (2016). 'A Comparative Analysis of the News Coverage and Content of Science and Technology in Two English Dailies.'

Anveshana's International Journal of Research in Regional Studies, Law, Social Sciences, Journalism and Management Practices.' Volume 1, Issue II.

26. Wilson, D. (2006). *Fundamentals of human communication.* (Ed.). Ibadan: Stirling-Horden Publishers (Nig.) Ltd.

27. Wycliffe, A., & Ayuya, V. C. (2013). Leveraging Science, Technology and Innovation for National Development in the Light of the Emerging Universities of Science and Technology in Kenya. *Mediterranean Journal of Social Science,* 4(2): 457-457. Doi:10.5901/mjss.2013.v4r2p457.

Rotating and Accumulating Savings and Credit Associations as Effective Tool for Enhancing the Women Entrepreneurship. A Theoretical Review

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Abstract
Rotating and accumulating savings and credit associations are recognized as essential drivers for enhancing women's entrepreneurship. The contribution of the informal organizations on entrepreneurship has been broadly studied. Many have overlooked women entrepreneurship. The current study reviews the theoretical and empirical literature on savings and credit associations and women entrepreneurship. The specific objectives are: to identify factors that encourage women's participation in rotating and accumulating savings and credit associations, to assess how the rotating and accumulating savings and credit associations promote women's entrepreneurship, and to establish theories that link rotating and accumulating savings and credit associations and women entrepreneurship. The study is anchored on three theories, namely: social network theory, social capital theory, and theory of structural hole. The research study was based on descriptive research design. The study reviewed previous research on savings and credit groups and women entrepreneurship. Findings showed that thrifts and loans organizations were more effective at augmenting awareness of entrepreneurship among women members than non-partakers. The study concludes that savings and credit organizations have been effective in

increasing women's entrepreneurship. The study recommends the following: First, the savings and credit associations should be included in entrepreneurship development programs of the government. Second, there should be utilization of informal associations as a better approach to have access to microcredits for enterprises startup and growth, and lastly, the inception of programs that will increase awareness of entrepreneurship among women.

Keywords: Rotating and Accumulating Savings and Credit Associations, Women Entrepreneurship, Social Capital Theory

1.   Introduction

According to ILO (2015), the economy of developing countries like Rwanda functions with twofold financial institutions. The first category operates through direct guidelines from the government and it is called formal financial organizations, e.g., Commercial banks, the companies of insurance as well as loan institutions. The second category is not under the direct control of the government, being the informal financial associations which are grouped into Rotating Savings and Credit Associations (ROSCAs) and Accumulating Savings and Credit Associations (ASCAs). Madestam (2014) stated that statutory domination of the official banking sector started in 1960s with the perception that the banking industry would induce entrepreneurship as well as economic growth.

However, the banking institutions have deeply come short of what is expected from them through strict credit conditions and growing interest rates, making access to capital difficult (FINSCOPE, 2016). Therefore, ROSCAs and ASCAs have been noted as one of the strategic approaches to make savings and credit services available to poor people who want to become entrepreneurs but are facing business investment challenges (Megiso, 2018). Several definitions for female entrepreneurship have been offered by different researchers. According to Amador-Ruiz and Briones-Peñalver (2017), female entrepreneurship is women's initiative of managing a firm with a high degree of risk and making value addition through pooling resources in innovative ways. Going by this definition, the number of women entrepreneurs who manage their enterprises has been increasing globally (World Bank Group, 2021). Earlier studies indicated that 30% of women managed business enterprises in the informal-non-agricultural sector across the world, whereas in Africa it is 63% (World Bank Group, 2021). From experience, there is awareness that women can have diverse financial facilities for carrying out their entrepreneurial operations (Ntamazeze, 2013).

Despite that argument, women are still limited by stringent conditions for loans and high-interest rates by financial institutions (Umejiaku, 2020).

They are also restricted by the socio-cultural issues associated with their gender (Chinomona & Maziriri, 2015). One of the key techniques to combat these challenges is through the ROSCAs and ASCAs which are flexibly linked by financial resources and women entrepreneurship (Bett, 2013). Women are likely to participate in financial self-help groups and use financing from these associations than men (Kharisma, 2018). Women prefer ROSCAs and ASCAs because the procedures and conditions for accessing funds are accommodative and are also characterized by a quicker process of loans with lower borrowing rates as compared to formal financial institutions (Bophela & Khumalo, 2019). Previous studies asserted ROSCAs and ASCAs as informal financial institutions which are effective in improving the members' wellbeing and economic development.

A research done in developing countries with reference to Kosovo by Ribaj and Fitim (2021) found that saving and credit groups have an influence on the members' welfare through job creation, technological development, and increase in Kosovo's GDP. Abanyam *et al.* (2013) researched about the impact of self-financing groups on development in Nigeria and found that ROSCAs and ASCAs have an impact on economic development through social and economic activities performed by groups' members. However, most studies focused on the role of ROSCAs and ASCAs to members' well-being and economic development and overlooked ROSCAs and ASCAs and women entrepreneurship. Therefore, this paper focuses on the contribution of ROSCAs and ASCAs in enhancing women entrepreneurship.

1.1.   Statement of the Problem

Saving and credit associations are unregistered self-help organizations that contribute to the economy in third world countries (ILO, 2015). They provide loans through which members raise finances to support their entrepreneurial endeavors. Karanja and Bwisa (2013) argue that ROSCAs and ASCAs also play a crucial role in enhancing entrepreneurship among groups' members through credits provided to them. Thus, developing countries have tried to draw up the pecuniary guidelines supporting cooperatives and associations known as rotating and accumulating savings and credit associations (Melania & Justin, 2015). These various forms of policies have been formulated to enhance economic growth through entrepreneurship (Bophela & Khumalo, 2019). The East African Countries like Kenya, Tanzania, Uganda, and Rwanda are exemplary countries where governments have come up with statutory laws of Micro-financing and payment system and creation of regulatory authority of saving and credits cooperatives (Mumanyi, 2014).

According to Chinomona and Maziriri (2015), poor people especially women are in need of creating new enterprises and expand existing enterprises

but they are still experiencing a lot of challenges like high interest rate, lack of collateral, and among others fixed by formal banking sector (Deborah et al., 2015) and other socio-cultural issues associated with their gender (Chinomona & Maziriri, 2015). One of the key ways to combat these challenges is through ROSCAs and ASCAs which are vastly related to saving and loan services and entrepreneurship. Past research by Beck (2012) established that women choose ROSCAs and ASCAs because of quicker processing of loans with lower borrowing rate as compared to formal financial institutions. According to Abdul (2012), savings and credit associations have influence on the members' welfare through satisfactory condition for saving and loans set by these groups for their members.

Further research by Abanyam *et al.* (2013) and Cheruiyot, Cheruiyot and Yegon (2016) noted that saving and credit associations have positive influence on economic development and the wellbeing of poor people because these associations enable them to access financial and non-financial investment for enterprises creation and making incomes. The reviewed literature shows that the Savings and Credit Associations enhance female entrepreneurship. However, most of the studies concentrated on savings and credit associations, member's well-being and economic development but overlooked rotating and accumulating savings and credit organizations and women entrepreneurship. This study, therefore, aimed at doing more research to assess how ROSCAs and ASCAs enhance women entrepreneurship.

1.2. Objectives of the Study
  i.   Identify factors that encourage women participation in rotating and accumulating savings and credit associations.
 ii.   Assess how the rotating and accumulating savings and credit associations promote women entrepreneurship.
iii.   Establish theories that link rotating and accumulating savings and credit associations and women entrepreneurship.

2. Literature Review
2.1. Theoretical Review
This section hinges upon the research variables in reviewing the following theories: capital social theory, structural hole theory, and theory of social network. The theories put emphasis on the contribution of informal savings and credit associations on women entrepreneurship.

2.1.1. Social Network Theory
This theory was proposed by Moreno (1937) and asserts that people in various societies have diverse relationships. The social network theory (SNT) is a theoretical structure designed to explain a way that individual can use to

build relationship with other people who have ability to share knowledge-based resources such as finance and innovation. The theory assumes that social network provides entrepreneur with opportunities to gain moral support and business information and test out existing ideas (Adrich & Dubini, 1991).

According to Leyden, Link and Seigel (2014), social connections in entrepreneurship accelerate the business people toward enterprise formation and success. The theory avers that social networks help enterprises to succeed by lowering operating expenses, creating new venture prospective, and intensifying the knowledge-based resources for an enterprise owner.

The community-based networks, dubbed "Social Capital", are a relevant part of a business's lifecycle (Ganjeh, Khani & Tabriz, 2020). This led researchers to hypothesize that person or firm can receive benefits and resources as results of social network. These resources comprise information and ideas, access to capital investment, business opportunities, and emotional and ethical support among others. Conversely, if the network is not structured, these resources may stay unreachable (Ganjeh, Khani & Tabriz, 2020). Greve and Salaff (2003) noted that entrepreneurial connections are similar in developing and developed countries across the world. They added that new businesses use networks than existing businesses. Furthermore, women are also presumably to use their kin than men and connections are opportunities for women entrepreneurs to share knowledge for enterprise startup and growth.

According to Adamoniene and Astromskiene (2010), social networks are critical to entrepreneur since they support business activities such as financing and human capital which are major determinants of entrepreneurship. The study concludes that social networks are also important to women because they help them to come up with innovative ideas for better enterprises management. Therefore, networks made through ROSCAs and ASCAs are essential as they allow women to socialize with others while pursuing economic and business goals. In this sense, the goal of the study is to enhance the idea that social interactions are crucial aspects of women entrepreneurship.

2.1.2. Social Capital Theory

Bourdieu and Coleman (1986) were proponents of the theory of social capital and they support the entrepreneurship theories by stating that the structure of social capital, which is elicited from the capital, is not simply for profit. However, social capital must include other entrepreneurial endeavors in all its forms (Allen, 2019). The theory also believes that social capital is based on an individual's characteristic, and not a group effort, drawn from determinations of every person in acquiring a social recognition. This recognition enables the person to exert influence over a communal group with

resources. The networks developed through grouping together or connections can also be considered as a source of social capital (Norris & Inglehart, 2013). As a result, once cultivated, social capital is connected to social networks that an individual can use for enterprise creation and growth (Allen, 2019).

Fatoki (2011) argued that to increase social capital, enterprises' proprietors ought to constantly make sure that they build robust network connections with outside resources providers such as dealers, financiers, prospective and existing consumers, and public supervisory bodies. The social capital theory support the proposition that people can improve their networking skills by being involved in exhibition and attend workshops and networking groups equally as stated by ROSCAs and ASCAs. Loubere and Shen (2018) conducted a study on how social capital influences development of business establishments. They noticed that social capital possess contribution over the business's expansion, particularly when using constant entrepreneurs' connections.

The theory also implies that a businessperson can have access to the external world and have usage of resources with the support of social capital while creating the new and different markets. Entrepreneur with networks is an organizational climate that allows a firm to compare the performance of its inner environment. Westlund (2011) observed social capital as an essential component of venture connections since it has an impact across diverse enterprises and their commercial activities. Theory of social capital backs the progression that this study is grounded upon the fact that the boost of female entrepreneurship is associated with grouping connections which women engage with. The theory encourages the enterprise holders to take part in more linking events as they have robust correlations. Being part of these networks allows women entrepreneurs to connect with resources that will help them to complete their entrepreneurial goals.

2.1.3. Structural Hole Theory

The Theory of Structural Hole was pioneered by Stuart (1992) and concentrates on the link designs in a community-based network. An example is seen in interconnected relationships existing among the partakers of societal connections. Consequently, a structural hole occurs if partners of a community-based network do not have linkages among them. This theory states that members of social networking should have assertiveness and comportments to motivate others about the benefits of interactions. The motives of these connections are the reason entrepreneurs need to nurture ties with new entrants in business. In comparable objectives, businesspeople are drawn to one another. Even in the pursuit of autonomous objectives, social networks enable individuals to improve managerial innovation (Aalbers, Dolfsma & Leenders, 2016).

The theoretical analysis on the networking among entrepreneurs implies that females develop network ties than men because they are likely to involve in networking events (Loscocco *et al.,* 2009). This assists women to get information on resources and accomplish their entrepreneurial maneuvers through access to financial and non-financial assets. The new entrepreneurs benefit from the structural holes while making risk-taking decision (Al-Zoubi, 2016). Bridging structural holes increase probability to get accessibility of new information and assets. The structural holes can also be a method to build a bridge between two disengaged sides, conceivably for one's own gain such as entrepreneurial business expansion and success (Adams, Mkramalla & Miron, 2014).

In general, structural hole does not intend to exploit nor encumber others for getting reputation (Aalbers, Dolfsma & Leenders, 2016). The structural hole theory is said to result into the multiplicity of knowledge if women who engaged in ASCAs and ROSCAs are actively involved.

2.2.   Empirical Review

This section revises conceptual and empirical literature on savings and credit groups and female entrepreneurship.

2.2.1.   Saving and Credit Banking Model

Various researchers and theorists noted that saving and credit groups started from barter system and developed in the early 1990s (Melania & Justin, 2015). As discussed by Bruhn and Love (2014), these saving and credit groups have a very successful story since they aid people who are unable to have access to saving and credit services from banks. This model, according to ASCAs and ROSCAs, states that group members decide the period of time for accumulating the agreed amounts, and the group also uses accumulated money to give out credits to its members. However, group members must pay back the borrowed amount with little interest within a fixed period of time. Based on the accounting calendar, group managers collect profit on the credit and group' partakers can conclude if the profits should be divided among members or reinvested into new profitable business. The managers of ASCAs and ROSCAs are required to have enough skills in financial management as they need to make record keeping on management of credits (Allen, 2006).

According to Sajuyigbe (2017), the ASCAs and ROSCAs offer suitable financial services to the low income earners. However, Greyling and Rossouw (2019) noted that ASCAs and ROSCAs carry out activities or agreements without banking guidelines scheme by asserting procedures that individuals must go through for exchange money. Saving and credit groups conduct and enable all financial mechanisms which happen beyond the useful space of several nations and the banking industry parameters (Aryeetey &

Udry, 1995). These informal groups are found to facilitate participants' access to entrepreneurial capital due to the affordable interest rate and other procedures which are conducive to group members (Mulu & Olubandwa, 2015).

Churchill, Danso, and Appau (2016) noted that high-cost of transactions, high borrowing rates, and procedures and conditions for accessing credits are not conducive for poor people specifically women. This limited entrepreneurs' access to entrepreneurial investment. Therefore, ROSCA and ASCAs have been serving as a complement for formal banking institutions since they enable poor people to start savings with small amount of money and provide members with optimistic access to loan needed for carrying out different business activities. Wilburn (2009) argued that micro and small business owners are more likely to borrow from ROSCAs and ASCAs due to the low lending rate and longer reimbursement time. This helps to explain why women entrepreneurs prefer to take out loans from ASCAs and ROSCAs (Marti & Mair, 2009).

A research done by Gugerty (2007) on underground banking in underdeveloped countries indicated that women favor participating in ASCAs and ROSCAs for social and economic needs. Women utilize savings and credits to meet social and economic needs such as enterprises establishment and expansion, purchase of home products, the payment of household bills, and financing education. In Rwanda, for women to pay annual mutual health insurance, they rely on savings and credit from ASCAs and ROSCAs. In addition, they use savings for sickness or unforeseen events while credit is normally used in financing business enterprises (Wilburn, 2009). This study clearly demonstrates that ASCAs and ROSCAs provide an effective credit platform for the disadvantaged, particularly women, to boost their living and income through entrepreneurship.

2.2.2. The Concept of Women Entrepreneurship

Smith and Chimucheka (2014) expound entrepreneurship as the attitude and adroitness of individual or group of people to operate business undertakings with the probability of success or failure. Entrepreneurship is also the way of accomplishing the roles of an entrepreneur. It is designing, managing, directing, controlling, and assuming the risk of a business endeavor (Kaur & Bains, 2013). Female entrepreneurship means different approaches that women can embrace for accessing lucrative business opportunities (Ambepitiya, 2016). The author also describes a woman entrepreneur as a person who chooses to take hard roles of doing own or joint venture with the aim of becoming economically self-reliant.

According to Mulu and Olubandwa (2015), women entrepreneurs may be individuals or group of women with the aim of starting a new enterprise so

that they can design, implement, and control business undertakings. In dissimilarity with their male counterparts, female entrepreneurs pursue their business activities with feminist beliefs in mind (Wheadon & Duval, 2019). Inversely, women normally have aptitudes of multitasking, passion, persistence, inspiration, and expressive intelligence when interacting with others. They are driven to enter into the markets of goods and services with a determination of earning income and initiating social change through cooperative, equitable, mutual respect, and ethics (Wheadon & Duval, 2019). The number of women-owned enterprises has significantly increased in many countries (World Bank, 2021). Women are starting businesses at a faster rate than men and they are capable to make significant influences to employment formation and economic advancement (Sanusi, 2012). This is because many women have discovered that they also have the capacity to operate businesses and have begun to apply their abilities and understanding to learn more about it.

2.2.3. The ASCAs and ROSCAs and Women Entrepreneurship

The correlation between the rotating and accumulating saving and credit associations and women entrepreneurship should be an area of interest in research. Ncube and Chirisa (2019) found that rotating saving and credit associations have considerable impact on female business growth. The report shows that access to credit facilitated members to accumulate financial and non-financial resources. This might aid them to invest increasingly in new and existing business and acquire assets. By so doing, they value their economic activities over their detectable investment provision. In other words, it may help women entrepreneur to make stronger business investments and output of their economic activities.

Ojong (2019) noted ROSCA and ASCAs as informal groups which have an influential role on socio-economic growth. The study showed that credit from the ASCAs and ROSCA improved partakers' revenue and stirred asset creation. It positively changes economic conditions of subsistence agricultural businesspeople through easier accessibility of funding for sufficient granary facilities to safeguard their harvests from periodic price hang down. This helps the farmers to keep their products while waiting for the prices. This is good enough as it allows them to get good rewards of high revenues. Mbizi and Gwangwava (2013) investigated about factors influencing the use of savings and credit associations and contribution of women entrepreneurs in the development of Zimbabwe. The finding revealed that ROSCAs have supported women to resolve the problems relating to unsatisfactory funds in business while running enterprises.

Females prefer to engage in those informal groups as another option to obtain funding for their entrepreneurial activities. Smets (2000) stated that

informal institutions have a significant role of assisting people to access resources needed for business formation and progress. Members of these groups take credit with the aim of funding activities that generates income, thereby ensuring financial stability and reducing poverty among members of groups. Li, Gan, and Hu (2011) conducted a study in China and reported that ASCAs and ROSCAs provided loans facilities as compared to formal banks. World Bank (2021) noted that in India, seventy-five percent of women micro-entrepreneurs use financing sources from ROSCA and ASCAs for enterprise establishment and development.

According to Chepkwony, Bett and Sibiko (2019), informal financing have a substantial impact on the growth of women-owned business organizations in Kenya. They noted that informal associations provide loans to members at a favorable rate compared to bank loans. In addition, they also give to their members a favorable repayment period. It should be noted that majority of women join the ROSCA and ASCAs with the aim of having access to credit required for business enterprises. Furthermore, this has increased awareness of entrepreneurship among women, job opportunities, self-reliance and has also eradicated gender discrepancy in business (Dzapasi, (2020). Women in particular are inherently innovative and ingenious with skills, such as perseverance and determination, which are essential for enterprise success. Therefore, ROSCA and ASCAs have channeled numerous outstanding capacities to women that if well used for entrepreneurship, it can harvest optimistic and indispensable outcomes.

Figure 1. Conceptual Model
Proposed Conceptual Framework

Independent Variable   Dependent Variable

ASCAs and ROSCAs	Women Entrepreneurship
• Participation of members • Saving culture and interest on saving • Credit and favorable Interest rate • Agreeable credit period	• Improvement in entrepreneurial skills • Increase of sensitization and member awareness • Starting new businesses and expanding the existing businesses • Business innovation

3. Methodology

The study used secondary data sources in reviewing the constructs of the saving and credits associations and women entrepreneurship. The study adopted a descriptive research design because of its applicability in delineating nature of relationship between dependent and independent variables. Secondary data review was relevant since it facilitates a comparison of different types of data. Furthermore, data analysis and synthesis were made by

use of desk studies comprising of valid and accurate information obtained from various sources such as the Non-Government Organizations which includes World Bank, International Labor Organization, Governments, etc. The theoretical review were founded on the following theories: The capital social theory, structural hole theory, and the theory of social network.

In addition, the empirical studies were revised using the key research terms by rotating and accumulating saving and credits associations and women entrepreneurship with focus on developing countries, especially Sub-Saharan region where informal groups are dominant. The reference was given to data and information published between 1990 and 2021 because the saving and credit groups were developed in the early 1990s (Melania & Justin, 2015). This is a period of time where developing countries adopted comprehensive policies that encouraged entrepreneurship among women.

4.   Conclusion and Policy Recommendation
4.1.   Conclusion

The study showed that women are starting businesses at a faster rate than men and they are capable to make significant influences to employment formation and economic advancement. The figures indicated that 30% of women managed business enterprises in the informal-non-agricultural sector across the world, whereas in Africa it is 63%. However, they are still experiencing a lot of challenges such as high interest rate, lack of collateral, etc. This needs to be fixed by formal banking sector and other socio-cultural issues associated with their gender. Female prefer to engage in those informal groups than another option to obtain funding for their entrepreneurial activities.

Based on the empirical evidence obtained in this study, it was noted that rotating and accumulating saving and credit associations have affected women entrepreneurship. Hence, those women members of associations have awareness better than non-members since the participants are able to access credits and a number of commercial concepts are deliberated in those associations such as the effects of the running business surroundings especially the supervisory background, marketing, sources of industry funding, etc. Therefore, upcoming study should seek to display the way that rotating and accumulating saving and credit associations can assist businesses to heighten their competitive advantage and women entrepreneurship.

Based on the findings of research, the study can conclude that rotating and accumulating saving credit association exists in most developing countries such as Rwanda. However, rotating and accumulating savings and credit associations (also referred to as Ibimina) have significant contribution in enhancing entrepreneurship among women. Furthermore,

they save money and give out the loans to women members for small business startup and growth as well as to improve their living conditions through making payments of mutual health and education invoice. It further explains that the rotating saving credit associations have considerably enhanced entrepreneurship among its partakers as opposed to the state of individuals who are non-partakers that were found to be comparatively poor. This is because non-partakers were not able to access credit offered by formal and informal organization due to the lack of collateral.

Consequently, rotating and accumulating saving and credit associations have been extraordinarily active and proficient in giving groups' partakers access to loan services since the members of the formal institutions do not have great likelihood of accessing credits. The finding showed that members of the informal groups typically find it challenging to access loans services from banking organizations. Lastly, the groups have vast relative sway on venture capital since most of the members spent the credits on investing in undertakings that generate income, while non-members remain unable to access desirable financing for business startup and growth. Rotating and accumulating saving credit associations therefore have been effective in enhancing women entrepreneurship. The study therefore confirms the assumption of theories explained in such a way that indigenous associations do enhance entrepreneurship in developing nations.

4.2.   Policy Recommendations
In accordance to the deductions above, the following recommendations have been made:

The government needs to use rotating and accumulating saving and credit associations to improve women entrepreneurship programs since they have been found to be the main sources of finances among the women for their entrepreneurial activities.

Government funding programs aimed at boosting women entrepreneurship should be implemented through rotating and accumulating saving and credit associations as they are effective in increasing entrepreneurship among women as well as being in a more favorable condition for the accessibility of micro credit given to members of financial self-help groups.

Public organizations and non-state players should start and execute programs that will improve the increase in size and number of rotating and accumulating saving and credit associations as it has been dominant in enhancing entrepreneurship among women.

5. Limitations of the Study and the Path for Future Research

This study utilized secondary sources to examine the contribution of rotating and accumulating saving credit associations in enhancing women entrepreneurship. Secondary sources were important because they incorporate comparison of different desk studies. However, this research gives understandings of Rotating and Accumulating Saving Credit Associations in enhancing the financial capability and awareness of entrepreneurship among women. Nonetheless, more study can be conducted by using primary data source in order to create more literature to add on the obtainable secondary source.

References

1. Aalbers, R., Dolfsma, W. & Leenders, R. (2016). Vertical and horizontal cross-ties: Benefits of cross-hierarchy and cross-unit ties for innovative projects. *Journal of Product Innovation Management*, *33* (2), 141-153.
2. Abdul-Yakeen, M. A. (2012). An empirical study of the contributions of rotating savings and credit associations (ROSCAS) to economic development of Ilorin Metropolis. *European Scientific Journal*, *8* (19), 267-284.
3. Adamoniene, R. & Astromskien, E. A. (2010). The influence of motives on the tendencies of business philanthropy. *Economics and management*, 15, 337–342.
4. Adams, M., Makramalla, M. & Miron, W. (2014). Down the rabbit hole: How structural hole in entrepreneurs' social networks impact early venture growth. *Technology, innovation and management review*, 4 (9), 19–27.
5. Aldrich, H. & Dubini, P. (1991). Personal and extended networks are central to the entrepreneurial process. *Journal of business venturing*, *6* (5), 305-313.
6. Allen, C. M. (2019). Market acceptance of a Murabaha-based finance structure within a social network of non-islamic small and medium enterprise owners in African procurement. *International Journal of Economics and Management Engineering*, *13*(4), 429-434.
7. Allen, H. (2006). Village Savings and Credit Associations–Sustainable and cost-effective rural finance: Small enterprise development, 17(1), 16–68.
8. Al-Zoubi, M. O. (2016). The entrepreneurial process networks as a new theoretical framework for understanding and analyzing the practice of creating a new business venture. *Journal of Management Research*, *8*(3), 60-75.

9. Amador-Ruiz, J. P. & Briones-Peñalver, A. J. (2017). Study of the female entrepreneurship: An empirical evidence in the municipality of León in Nicaragua. *Tourism & Management Studies*, *13*(3), 73-82.

10. Ambepitiya, K. R. (2016). The role of women entrepreneurs in establishing sustainable development in developing nations. *World Review of Business Research*, *6* (1), 161-178.

11. Ardener, S. (2014). Credit unions and money clubs (ROSCAs) (Respond to this article at http://www. therai. org. uk/at/debate). *Anthropology today*, *30* (4), 3-6.

12. Azman, N. H. N. & Kassim, S. (2019). Sustainable development of women micro-entrepreneurs in Malaysia: factors affecting adoption of rotating savings and credit association (ROSCAs). In *1ˢᵗ aceh global conference (AGC 2018),* 382-388.

13. Bophela, M. J. & Khumalo, N. (2019). The role of stokvels in South Africa: a case of economic transformation of a municipality. *Problems and Perspectives in Management*, *17*(4), 26.

14. Bourdieu, P. (1986). The forms of capital In J. Richardson (Ed.), Handbook of theory and research for the sociology of education. *New York: Greenwood,* 241–258.

15. Bruhn, M. & Love, I. (2014). The real impact of improved access to finance: Evidence from Mexico. *The Journal of Finance*, *69* (3), 1347-1376.

16. Burt, R. S. (1992). *Structural holes:* The social structure of competition. Cambridge, Mass: Harvard University Press.

17. Cheruiyot, P. K., Cheruiyot, J. K. & Yegon, C. K. (2016). A study on operations and impact of Rotating Savings and Credit Associations: Case of middle income earners in Embakasi Nairobi, Kenya. *International Journal of Economics, Commerce and Management*, ISSN 2348 0386 *4* (5), 871-897.

18. Chepkwony, K., Bett, H. & Sibiko, K. W. (2019). Determinants of table banking loan utilization among micro agri-enterprises owners in Bomet county, Kenya. *International Journal of Current Aspects*, *3*(2), 145-158.

19. Chibundu, S. N. (2016). Women entrepreneurs 'access to microfinance bank credit in imo State, Nigeria. *Global Journal of Agricultural Research*, *4* (1), 9-17.

20. Chinomona, E. & Maziriri, E. T. (2015). Women in action: Challenges facing women entrepreneurs in the Gauteng Province of South Africa. *International Business & Economics Research Journal (IBER)*, *14* (6), 835-850.

21. Churchill, S. A., Danso, J. K. & Appau, S. (2016). Microcredit and poverty reduction in Bangladesh: average effects beyond publication bias. *Enterprise Development and Microfinance*, *27*(3), 204-218.

22. Deborah, A. E., Wilhelmina, S., Oyelana, A. A. & Ibrahim, S. I. (2015). Challenges faced by women entrepreneurs and strategies adopted by women entrepreneurs to ensure small business success in Nkonkobe Municipality, South Africa. *Journal of Economics*, *6* (1), 37-49.

23. Dzapasi, Y. (2020). Determinants of women entrepreneurship success in Zimbabwe. A case study of Harare metropolitan province. *Journal of entrepreneurial innovations*, *1* (1), 37-37.

24. Fatoki, O. O. (2011). The impact of human, social and financial capital on the performance of small and medium-sized enterprises (SMEs) in south Africa. *Journal of Social Sciences*, *29* (3), 193-204.

25. FINSCOPE (2016). Financial inclusion in Rwanda 2016. Retrieved Nov 21, 2021,from https://www.mfw4a.org/sites/default/files/resources/FinScope_Rwanda_2016_Report.

26. Ganjeh, Y. M., Khani, N. & Tabriz, A. A. (2020). The relationship between networking capability and commercialisation performance by considering the role of dimensions of network structure. *International Journal of Business Innovation and Research*, *22*(1), 47-68.

27. Greve, A. & Salaff, J. W. (2003). Social networks and entrepreneurship. *Entrepreneurship theory and practice*, *28* (1), 1-22.

28. Greyling, T. & Rossouw, S. (2019). Access to micro-and informal loans: Evaluating the impact on the quality of life of poor females in South Africa. *South African Journal of Economic and Management Sciences*, *22* (1), 1-14.

29. Gugerty, M. K. (2007). You can't save alone: commitment in rotating savings and credit associations in Kenya. *Economic development and cultural change*, *55* (2), 251-282.

30. ILO (2015). The importance of informal finance in promoting decent work among informal operators: A comparative study of Uganda and India. *Working paper No 66*, 5-55

31. Karanja, P. & Bwisa, H. M. (2013). Factors that influence entrepreneurial success among women groups: A Case study of Makuyu Division. *International Journal of Academic Research in Economics and Management Sciences*, *2*(1), 33.

32. Kaur, H. & Bains, A. (2013). Understanding the concept of entrepreneur competency. *Journal of Business Management & Social Sciences Research*, *2*(11), 31-33.

33. Kharisma, B. (2018). The Determinant of participation in the Social Activities: Case in Indonesia. *Signifikan: Jurnal Ilmu Ekonomi*, *7* (2), 185-200.
34. Leyden, D., Link, A. & Siegel, D. S. (2014). A theoretical analysis of the role of social networks in entrepreneurship. *Research Policy, 43*, 1157-1163.
35. Li, X., Gan, C. & Hu, B. (2011). The welfare impact of microcredit on rural households in China. *The Journal of Socio-Economics*, *40* (4), 404-411.
36. Loscocco, K., Monnat, S. M., Moore, G. & Lauber, K. B. (2009). Enterprising women: A comparison of women's and men's small business networks. *Gender & society*, *23* (3), 388-411.
37. Loubere, N. & Shen, Q. (2018). The policy and practice of microcredit in rural China: toward a relational understanding of heterogeneous implementation. *Modern China*, *44*(4), 418-452.
38. Madestam, A. (2014). Informal finance: A theory of moneylenders. *Journalof Development Economics*, *107*, 157-174.
39. Mair, J. & Marti, I. (2009). Entrepreneurship in and around institutional voids: A case study from Bangladesh. *Journal of business venturing*, *24* (5), 419-435.
40. Manerkar, G. (2015). Women Entrepreneurs in Goa: Issues and challenges. Indian Streams Research Journal, 4(12), 1-8.
41. Marti, I. & Mair, J. (2009). Bringing change into the lives of the poor: Entrepreneurship outside traditional boundaries. *Institutional work: Actors and agency in institutional studies of organizations*, 92-119.
42. Mbizi, R. & Gwangwava, E. (2013). Rotating savings and credit associations: An alternative funding for sustainable micro enterprise-case of Chinhoyi, Zimbabwe. *Journal of Sustainable Development in Africa*, *15* (7), 181-194.
43. Megiso, T. (2018). The Role of Saving and Credit Cooperatives in Improving Rural Micro Financing: The Case of Bench Maji, Kaffa, Shaka Zones. *World Journal of Business and Management*, *4*, 30-50.
44. Melania, D. & Justin, K. U. (2015).The contribution of SACCOs societies to income poverty alleviation: A case study of Mbozi district, Tanzania. *Journal of African Studies and development, 7* (4), 99-111.
45. Moreno, J. L. (1937). Sociometry in relation to other social sciences. *Sociometry*, *1* (1/2), 206-219.
46. Mulu, M., Wanga, O. & Olubandwa, A. (2015). Female Entrepreneurship in Kenya: How do Female Micro-Entrepreneurs Learn to be Entrepreneurial. *International Journal of Gender and Entrepreneurship*, *3*(3), 265-274.

47. Mumanyi, E. A. L. (2014). Challenges and opportunities facing SACCOs in the current devolved system of government of Kenya: A case study of Mombasa County. *International Journal of Social Sciences and Entrepreneurship*, *1*(9), 288-314.

48. Ncube, R. & Chirisa, I. (2019). Female Entrepreneurship in Africa: An Inquiry Into the Influence of Rotating Savings and Credit Associations on Business Growth. In handbook of research on women in management and the labor market. *IGI Global*, 259-279.

49. Norris, P. & Inglehart, R. (2013). Gendering social capital. *Gender and social capital*, *73*, 34-45.

50. Ntamazeze, J. (2013). Trust and Development: Rotating Savings and Credits Associations in Rwanda: 5th European Conference on African studies. *ISCTE-IUL: Lisbon*, 1-35.

51. Ojong, N. (2019). Informal borrowing sources and uses: insights from the North West Region, Cameroon. *Third World Quarterly*, *40* (9), 1730-1749.

52. Ribaj, A. & Mexhuani, F. (2021). The impact of savings on economic growth in a developing country (the case of Kosovo). *Journal of Innovation and Entrepreneurship*, *10* (1), 1-13.

53. Sajuyigbe, A. S. (2017). Influence of financial inclusion and social inclusion on the performance of women-owned businesses in Lagos state, Nigeria. *Scholedge International Journal of Management & Development*, *4* (3), 18-27.

54. Sambe, N., Korna, J. M. & Abanyam, N. L. (2013). The effects of informal financial institutions on the socio-economic development of Adikpo Town. *International Journal of Business and Social Science*, *4* (15), 75-82.

55. Smets, P. (2000). ROSCAs as a source of housing finance for the urban poor: an analysis of self-help practices from hyderabad, India. *Community Development Journal,* 35(1), 16-30.

56. Smith, W. & Chimucheka, T. (2014). Entrepreneurship, economic growth and entrepreneurship theories. *Mediterranean Journal of Social Sciences*, *5* (14), 160-160.

57. Umejiaku, R. I. (2020). Access to Credit on the Growth of Women Entrepreneurs in Jos, Plateau State: The Influence of Financial Support Services. *International Journal of Social Sciences and Economic Review*, 2 (1), 24-34.

58. Westlund, H. (2011). Handbook of social capital: The troika of sociology, political science and economics–Edited by Gert Tinggaard Svendsen and Gunnar Lind Haase Svendsen. *Papers in Regional Science*, *90* (1), 240-241.

59. Wheadon, M. & Duval-Couetil, N. (2019). Token entrepreneurs: A review of gender, capital, and context in technology entrepreneurship. *Entrepreneurship & Regional Development*, *31* (3-4), 308-336.

60. Wilburn, K. (2009). A model for partnering with not-for-profits to develop socially responsible businesses in a global environment. *Journal of Business Ethics*, *85* (1), 111-120.

61. World Bank (2021). Female Entrepreneurship Resource Point - Introduction and Module 1: Why Gender Matters. Retrieved Nov 25, 2021,
from https://www.worldbank.org/en/topic/gender/publication/female-entrepreneurship-resource-point-introduction-and-module-1-why-gender-matters.

Existing Practicies of Parent-child Communication on Sex-related Matters among Households in Ondo State, Nigeria

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Abstract

Adolescents' sexual and reproductive health remain global public health concerns particularly in Sub-Saharan. Undoubtedly, parent-child communication remains a vital means by which parents transmit cultural values and monitor the sexual health of their children. The nature and the quality of sexual conversations that subsist in the family are critical factors in the prevention of sexual risk-taking behaviour among adolescents. Therefore, this paper investigated the existing practices of parent-child communication on sex-related matters among households in Ondo State among the triads of parents and their adolescent children and the implications for adolescents' sexual health in Ondo State, Nigeria. The study elicited data from 483 respondents comprising fathers, mothers and their adolescents; through a multi-stage sampling technique. First, the study found that for most of the respondents (fathers 56.5%, mothers 54.7% and adolescents 60.2%) sexual conversations are occasional; second, mothers often initiate sex-related discussion with children more than fathers; third, sexual conversations are generally not open and receptive; fourth, content of parent-child sexual communication chiefly centre on admonitions against premarital sex; fifth, mothers discuss more sexual topics with the adolescent children than fathers. Sixth, discussion about contraceptive with adolescents is a topic which majority of households in the state avoid. Lastly, many parents still have

inhibitions discussing sex-related issues with adolescents. There's need for interventions that target parents enlightenment and education and addressing cultural norms that impede parent-child sexual conversations; in order to reposition families for parent-child communication that is open, receptive, sequential and time sensitive; conversations about sexual development and decision-making that enhance adolescent sexual and reproductive health.

Keywords: Adolescents, Parent-child, Sexual discussion, Sexual issues and Ondo State

1.   **Background to the study**

Parent-child communication is indispensible in the monitoring of the sexual health (SH) of adolescents. Indisputably, the extent of the qualitative manner in which parents are involved in their children's lives are critical factors in the prevention of sexual risk-taking behaviour among adolescents that compromises their sexual health. . Adolescents' sexual health is a global public health concern especially in the developing countries due to increased rate of risky sexual behaviour among adolescents. Several studies have reported increased sexual risk-taking behaviour among adolescents in the last decade (Bastien, Kajula and Muhwezi, 2011; WHO, 2012; Haub, 2013, Burke, Gabhainn, and Kelly, 2018). Much of what we hear about adolescent sexuality are problems of risky sexual behaviour, such as, unwanted pregnancy, abortion, school drop-out as a result of pregnancy and sexually transmitted infection.

Currently, there are 1.8 billion 10-24 year olds young people across the globe, 90 per cent of whom live in developing countries, where they tend to make up a large proportion of the population (Adolescent and Youth Demographics 2022). According to World Health Organisation population in this age group is estimated to continue to increase until the year 2040 (WHO, 2012). Besides, about 16 million adolescent girls between ages 15 and 19 give birth yearly, with 95% occurring in developing countries (WHO, 2012). For many of these adolescents, pregnancy and childbirth are unplanned and unwanted. In addition in many developing countries, pregnancy and childbirth related complications are the chief cause of death among female adolescents aged 15 to 19, with estimated three million unsafe abortions among girls in this age group in 2008 (Sakeah, 2013). Therefore, addressing the SH needs and problems of adolescents is a crucial public health issue. In many parts of the world, particularly in Sub-Saharan Africa that still has the world's highest level of adolescent childbearing (Haub, 2013), the SH needs of adolescents are either poorly understood or not fully appreciated.

While these are of significant concern, it is important to note that sexuality is a normal part of adolescence. During adolescence, the lives of

boys and girls become wrapped in sexuality. Adolescence is a time of sexual exploration and incorporation of sexuality into one's identity (Santrock, 2005). Adolescents have an almost insatiable curiosity about the mysteries of sex (Osei, 2009); they wonder whether they are sexually attractive and think about how to behave sexually and what the future holds for their sexual lives (Osei, 2009, Duell and Steinberg, 2019). Hence, adolescent sexual health is influenced by factors such as the community, religious practices and beliefs, the media, peer influence, biological factors, family characteristics, family process variables, and adolescent attitudes and beliefs (Fisher, 2004). Parents, with the support of community, have the main responsibility for providing adolescents with information they need to protect themselves from sexual ill-health. Providing adolescents with age-specific sexual health information empowers them to make responsible decisions about sexuality, thereby reducing the number of unintended pregnancies and Sexually Transmitted Infections (STIs) incidence, including HIV/AIDs.

Indeed, several factors influence adolescents' sexual health; however, parental factor is indubitably among the most important potential influence on adolescent's sexual health (Wight, Williamson and Henderson, 2006). Although adolescence is a period during which extra family influences such as peers, media, and the community become increasingly important, parents remain a large influence on youths' lives due to the centrality of the family as a socialization agent in the adolescent life course (Santrock, 2005; FMOH, 2012). The first contact of children is with their parents. Hence, we should not fail to accept the fact that the first sex education begins with parents. Parents serve as the first source of sex role learning for their adolescents and often, relationship with parents forms templates for future sexual behaviour. Communication between parents and adolescents is a vital part of adolescents' lives and it is one of the primary means by which parents socialize their children. This explains why children go to school with various backgrounds about sexuality. Some lack the basic knowledge while others are misinformed. Consequently, many develop undesirable sexual attitudes and practices.

Indeed, parent-child communication is vital to transition to sexual activity and the prevention of sexual risk-taking behaviour among adolescents (McNeely and Blanchard, 2010; Hagan, Shaw, and Duncan, 2017; Berkel, 2019). Despite several interventions, recent studies showed that adolescent's knowledge of sexuality is made up of distorted, incomplete and unreliable information received from films, peers, novels, music, media, internet and magazines. Such distorted information conveys an approval of adolescent risky sexual behaviour which had been related to higher levels of intention to engage in sexual intercourse and a greater amount of sexual activities in general (Lieberman, 2006; L'Engle, Brown and Kenneavey, 2006; FMOH, 2012). This situation greatly compromises adolescents' sexual health. On the

other hand, several studies conducted in Nigeria and other parts of Africa have reported that many parents still see discussion on sex-related matters between them and their children as improper (Sunmola, Dipeolu, Babalola and Adebayo, 2003; Osei, 2009; FMOH, 2012). Some parents believe that talking to young people about sex will lead to premature sexual activities (Osei, 2009; Bastien, Kajula and Muhwezi, 2011), a few parents give a detailed sex education and many do not mention the topic at all to their children. (Lieberman, 2006; FMOH, 2012). The researcher is of the opinion that overwhelming influences of these other factors on adolescent's knowledge of sexuality is due to the absence of the mediating influence of open and receptive parental communication on sex-related matters. Thus, the researcher evaluated the communication processes that take place among the triads of fathers, mothers and their adolescents with the aim of understanding the nature and the quality of sexual conversations that exist among households in Ondo State.

2.   Objective of the study

This study examines parent-child communication and adolescent sexual health in Ondo State, Nigeria. The specific objective is to:
Assess the existing practices of parent-child communication on sex-related matters in Ondo State.

Action theory and conceptual framework

The study adopted Weber's (1949) Social Action Theory. Social action perspectives examine smaller groups within society and are also concerned with the subjective states of individuals. Weber maintained that social actions should be the focus of study in sociology. According to him, social action is an action carried out by an individual to which the individual attached a meaning. Weber identified four types of action that are distinguished by the meanings on which they are based. First, means-ends rational actions. These involve a clear awareness of a goal. Second, value rational actions. These involve the consciousness of a belief; people act in certain ways because of religious, aesthetic, or ethical beliefs even when such action ordinarily appears irrational. Third, affective or emotional actions. According to him, these are actions that are as a result of a person's emotional state at a specific time. Lastly, traditional action; these are actions of people that stem from established practices or customs. People do act in a certain way because of imbibed traditions because overtime things have repeatedly been done that way.

Action theory thus provides a descriptive and explanatory theoretical orientation for understanding interpersonal relationships between human beings. Communication is a social action, there is the need to see sexual communication as an action process among the dyads of parents and their

adolescents. Accordingly, as in Figure 1 (**Variables Influencing Parent-Child Sexual Communication Framework)**, from the stand point of action theory all human action is directed by meanings. Therefore whether or not parents will engage their adolescents in open and receptive discussions on sex-related matters and the manner and pattern of such sexual communication will be influenced by the meaning parents attached to such action. Hence, both parents and adolescents subjectivity and inner persuasion are vital in understanding parent-child sexual communication. Means-ends rational action will lead parents for instance to discuss sexual issues with adolescents if convinced that such discussion will equip their children with necessary knowledge or skill to adequately grapple with issues relating to their sexual and reproductive health, the reverse will be the case if they are convinced that such discussion will encourage risky sexual behaviour. Such means-end action will be an outcome of both parents and adolescents attitude. Thus, if the perception of parents is that the outcome of sexual communication with their adolescents is positive, for instance, that such discussion will lead to delayed sexual initiation or the prevention of several risky sexual behaviours, they will have a positive attitude toward parent-adolescent sexual communication. The opposite can also be stated if parent-adolescent sexual communication is thought to be negative in which case for instance, parents perceive such discussion of sexual matters as encouraging sexual intercourse. Similarly, where adolescents are convinced that sex-related discussion with parents is helpful, they will have a positive attitude towards such discussion; while they will have a negative attitude if they perceive otherwise.

Weber's Value rational action focuses on individual's consciousness of certain religious or ethical beliefs. Accordingly, some parents may openly and receptively discuss sex-related matters with their adolescents not necessarily because of the use such knowledge will be put into, but because they view such action as a moral obligation. For instance, relevant others (both at family unit level and societal level) see parent-adolescent sexual communication as positive and a particular parent is motivated to meet the exceptions of relevant others, then a positive subjective value is expected. On the other hand, if relevant others see parent-adolescent sexual communication as negative, for parents who want to meet the expectations of these "others", parent-adolescent sexual communication is likely to be a negative subjective value.

Affective or emotional action implies that, whether or not parents will discuss sexual issues with their adolescents will be a function of their emotion or psychological disposition and not necessarily as a result of the usefulness of such discussions or moral obligation. For instance, when parents feel they have sexual communication skill, time and high comfort level with discussion about sex-related matters with their adolescents, it will lead to parent-child

sexual communication. However, when parents feel they do not have sexual communication skill, time and high comfort level with discussion about sex-related matters with their adolescents their action will be such that they avoid such discussion with their children. Weber's affective action has crucial implication for adolescents' action as regards sexual communication with parents. Different relationship experiences can lead to different developmental outcomes for adolescents. Sex related issues are sensitive and intimate, thus transcending parents-child communication, cordial and intimate relationships with parents are important in the adolescent's development because this relationship functions as models or templates that are carried forward over time to influence the construction of new relationship. The nature of parent-adolescent relationship does not depend only on what happens in the relationship during adolescence. Relationships with parents over the long course of childhood are carried forward to influence, at least to some degree, the nature of parent-adolescent relationship. In addition, the long course of parent-child relationships also could be expected to influence, again at least to some degree, the fabric of the adolescent's peer relationships, friendships, and dating relationship. Hence, parent-child communication is as a complex activity constituting of parenting styles, parent-child relationship, parental monitoring, supervision and parent-child general and sexual communication. This communication should promote systematic and dynamic swapping of roles between parents and their adolescents depending on household parenting style. For example, parents in one instance are fathers, mothers, teachers, decision-makers, and care-givers for their adolescents; in another instance they should be friends, listeners, and allowing adolescents to participate in decision-making. Nevertheless, there is limit to the freedom of speech adolescents enjoy in this interaction since such encounters are embedded in some degree of power relations. Hence, parent-child sexual communication, which is actualized through active strategizing, can be compromising, mutual and conflicting. When parents are open receptive and supportive, communication is likely to have positive effects on adolescent's sexual health (i.e, they imbibe parent's values, have good self-esteem and delay sexual initiation) because children are positively inclined towards such discussion. However, when the communication environment is hostile, parent-child communication becomes dysfunctional, because it leads to adolescents seeking out alternative channels like peers, school, media, internet etc. These speedily facilitate reproductive activities such as premarital sex, leading to pregnancy, abortion, STDs including HIV/AIDS, which negatively affect adolescents' sexual health. Hence, the framework shows that the flow of parent-child sexual communication is bidirectional – top to bottom and bottom to top (Parent-Child Sexual Communication Arrow points up and down).

Lastly, Weber's traditional action considered established customs. For instance, parents may discuss sexual issues with their adolescents because they have always done things that way. However, it must be noted that the customary behaviour in Africa and Nigeria in particular is rather for parents to avoid such discussion with their adolescents, a practice which Nwokocha (2010) described as culture of silence. Hence, the dashed arrow as seen in the conceptual framework.

Figure 1. Variables Influencing Parent-Child Sexual Communication Conceptual Framework
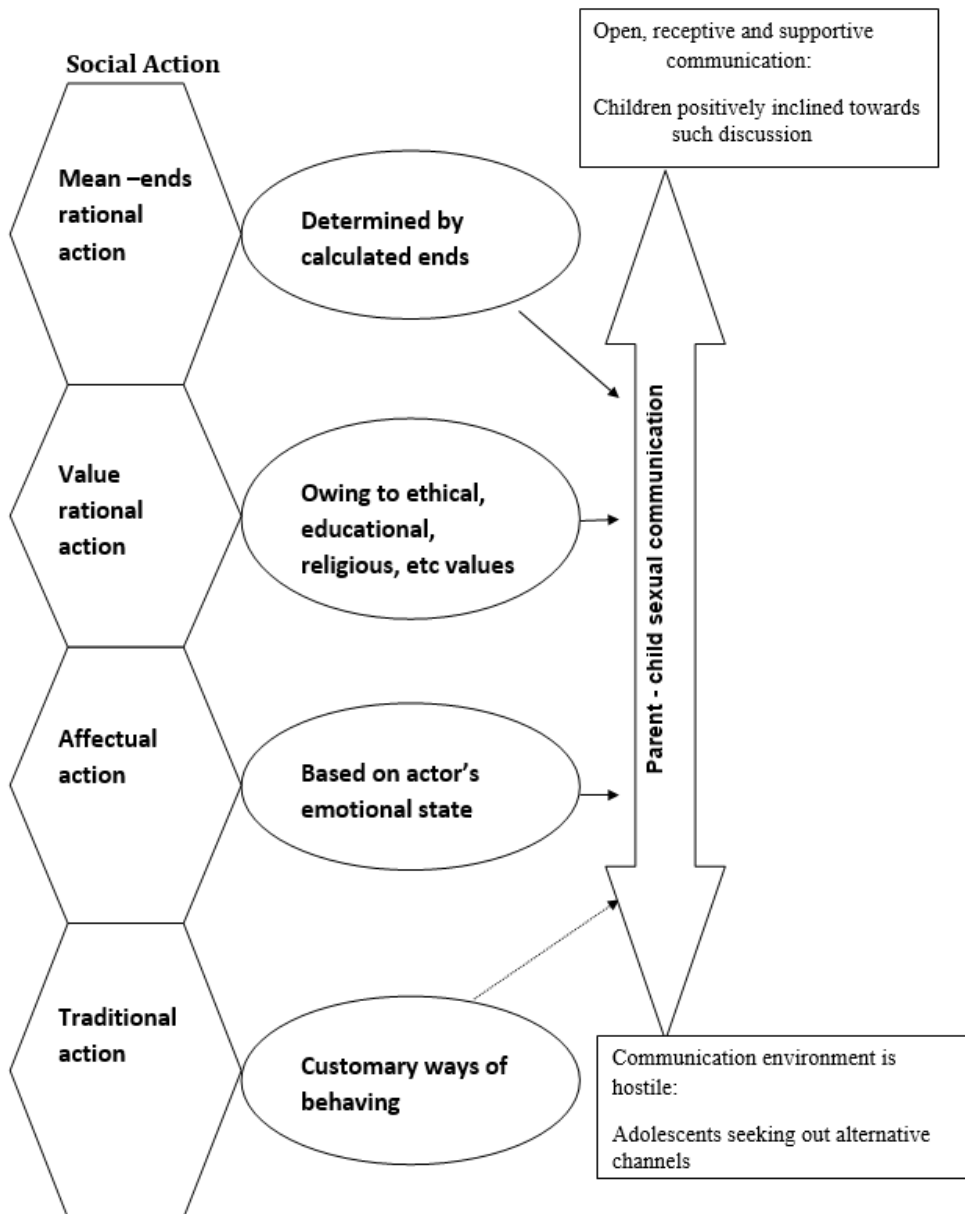
3. Material and Method

The study utilized a triangulation of methods involving a survey and the use of qualitative technique in eliciting information from respondents. A total of 483 respondents comprising fathers, mothers and one of their adolescent were selected through a multi-stage sampling technique in Ondo state. Seven Local Government Areas (LGAs), with highest population in each dialect group were purposively selected, while simple random sampling was used to select twenty-eight enumeration areas (EAs). Finally, 322 parents and 161 adolescents were purposively selected at household level. Data for the study were collected through structured interviews (the Questionnaire) and In-depth Interviews (IDIs). A total of 20 IDIs were conducted. By the means of Statistical Package of the Social Sciences (SPSS) version 20, the quantitative data were analysed using descriptive statistics. Content analysis was employed to analyse data collected from the IDIs.

4. Result and Discussion
Frequency of Discussion

Table 1 shows the percentage distribution of the respondents by frequency of Sexual Communication. The table shows the existing practice of parent-child sexual communication in respect of the opinion of each family member about the frequency of parent-child sexual communication.

Table 1. Distribution of Respondents by Frequency of Sexual Communication

Frequency of Sexual Communication	Father		Mothers		Children with either father or mother	
	Freq.	%	Freq.	%	Freq.	%
Once In Three Months	6	3.7	8	5.0	16	9.9
Twice A Month	15	9.3	11	6.8	4	2.5
Once A Month	27	16.8	27	16.8	21	13.0
Twice A Week	2	1.2	8	5.0	11	6.8
Once A Week	20	12.4	19	11.8	12	7.5
Anytime Something Related Comes up	91	56.5	88	54.7	97	60.2
Total	161	100	161	100	161	100

Fathers who opined once in three months were (3.7%), twice a month were (9.3%), once a month were (16.8%), twice a week were (1.2%), once a week were (12.4%) and anytime something related comes up were (56.5%). For mothers, once in three months represent (5.0%), twice a month (6.8%), once a month (16.8%), twice a week (5.0%), once a week (11.8%) and anytime something related comes up represents (54.7%). In a similar vein, children

who indicated once in three months were (9.9%), twice a month were (2.5%), once a month were (13.0%), twice a week were (6.8%), once a week were (7.5%), while anytime something related comes up were (60.2%). The findings reveal the same pattern of response in respect of how frequent parent-child sexual communication between parents and their adolescents in all households in the Ondo state takes place. In all the households, parent-child sexual communication between parents and their adolescents mainly takes place anytime something related to it comes up within the home or the immediate neighbourhood. When related issues comes up on the television, or, for instance, an adolescent got pregnant in the immediate neighbourhood, the child of a family friend was diagnosed with sexually transmitted infection (particularly HIV/AIDs), when a friend of the opposite gender pays children a visit e.t.c. The implication is that parent-child sexual communication in the community is predominantly occasional discussions.

There was a convergence between the quantitative and qualitative data in this respect. Majority (14 of 20) of the parent's respondents reported that sex-related matters are not usually easy to discuss with adolescents. However, the concern about sexually transmitted infection, particularly HIV/AIDs which has no certified cure and the rising tide of teenage pregnancy have become a push-factor for discussing sex related matters with their children. Most respondents stated that they discourage premarital sexual relations among adolescents by referring to HIV/AIDS infection. In addition to HIV/AIDs, parents discuss other consequences of risky sexual behaviour among adolescents, such as unwanted pregnancy and dropping out of school. Although some noted that they do not like such discussion because it may lead to promiscuity among adolescents. Many interviewees commented that the discussions are often times opportune conversations, as for instance after a programme on the television, or if an adolescent in the neighbourhood develops problems as a result of sexual activities, or when the children are taught related issues in school and they mention such at home. The following consensus emerges from some of the household panel survey:

> *The opportunity I do use to discuss such with my daughter is when she mentions something related that they were taught in school.* **(46 years old educated mother in Akure Local Government).**

Also, an interviewee declared:

> *The occurrence of an adolescent becoming pregnant normally provide good opportunity to discourage my daughter from premarital sex* **(54 years old less educated mother in Ondo)**

However, it equally important to note that not all respondents reported that discussion about sex related matters was difficult. For instance a discussant testified:

> *Discussion about sexual issues is a subject parents should readily have with their children, towards the attainment of puberty; I enlightened my children about all it entails (**50 years old Less educated mother in Akoko Local Government**)*

Initiator of Discussion

Table 2 presents the percentage distribution of the initiator of parent-child sexual discussion according to the reports of fathers and mothers. Initiator of parent-child sexual conversation was determined by who initiated the last sexual discussion.

Table 2. Initiator of the Last Discussion of Sexual Issues according to Fathers and Mothers

Initiator of the last Discussion of sexual issues	Fathers		Mothers	
	Freq.	%	Freq.	%
Myself	98	60.9	118	73.3
My adolescent	31	19.2	24	14.9
My spouse	28	17.4	17	10.6
My neighbour	4	2.5	2	1.2
Others	Nil		Nil	
Total	161	100	161	100

The table shows the responses of the respondents in respect of who initiated the last sex-related discussion with the adolescent. The majority (60.9%) of the fathers opined that they did, some (19.2%) noted that their adolescent did, a sizeable number (17.4%) said it was their spouse and lastly, a few fathers (2. 5%) indicated that their neighbours did so. For mothers also, the majority (73.3%) noted that they did, some (14.9%) said their adolescent, a small portion (10.6%) of them noted their spouses while just a very few (1.2%) said their neighbour did.

Table 3 presents the percentage distribution of the initiator of parent-child sexual discussion according to the responses of the children. Initiator of parent-child sexual conversation was determined by who initiated the last sexual discussion.

Table 3. Initiator of the Last Discussion of Sexual Issues according to the Children

Myself	67	41.6
My father	14	8.7
My mother	73	45.3
Our Neighbour	1	0.6
Others	6	3.7
Total	161	100

On the contrary, many (41.6%) of the children said they initiated the last discussion on sexual matters, very few (8.7%) noted that their father did, the majority (45.3%) of the adolescent children posited that it was their mother, just an adolescent (0.6%) said a neighbour, and an insignificant number (3.7%) said others (like an aunty, an uncle e.t.c). The responses from the household indeed show many discrepancies which should not be unexpected in a situation like this. First, the incident which the parents may be referring to as the last discussion of sex-related issues may be different from the one the children noted due to the nature of human memory. In addition, there is the possibility that while parents may feel they initiated a particular discussion, the children may feel otherwise. Nevertheless, it is significant to note the children in the study could remember more of the times their mother discussed with them than their fathers. As mirrored in the table, the majority (45.3%) of the children noted that their mother had the last sexual discussion with them. The implication is that while fathers and mothers may both have high positive attitudes to parent-child sexual discussion, because of some factors, mothers initiate sex-related discussion with children more than fathers. These factors were clearly indicated in the qualitative data. A number of fathers said they talk about sex to their adolescents through their mothers because such discussion is the traditional and primary role of mothers; they noted that father's traditional and primary role is to provide for the family. Some argued that fathers are shy to discuss such issues. Some male participants felt that male children will get to know about sex related matters somehow. The following were from the IDIs sessions

> *I do not discuss such things with my children; however I know that their mother should have a way of doing so (**43 years old educated father in Akure South Local Government**)*

Another interviewee testified:

> *I cannot remember if my own parents ever had such discussions with me, I had always felt that either through books or teachers in the school a boy*

grows up to know these things, until recently. (50 years educated father in Okitipupa Local Government)

Openness of Sexual Discussion

Table 4 is a data table that depicts the final analysis from the computation of the scale used to measure openness of parent-child sexual discussion among the selected households in the State. The table shows that fathers and mothers had similar perception as regards how open and receptive is the parent-child sexual communication that subsists in the home. The scoring and computation of fathers and mothers responses as reflected in table 3 shows that just (1.9%) and (1.9%) of fathers and mothers respectively had poor level of open and receptive parent-child sexual communication with their adolescents. A good number (48.4%) and (49.7%) of fathers had average and good level of open and receptive parent-child sexual communication with their adolescents respectively. Similarly, for many (48.4%) mothers, parent-child sexual communication with their adolescents was averagely open and receptive and a good number (49.7%) of mothers had good and receptive level of parent-child communication with their adolescent children. However, the children responses widely vary from that of their parents. As seen in the table, the scoring and computation of the children responses reveal that poor level of open and receptive parent-child sexual communication with their parents represents (1.2%), average represents (67.0%) and good level of open and receptive sexual discussion with parents represents (32.9%). Thus, the majority (67.0%) of parents had an average level of open and receptive sexual communication with their adolescents. This finding is quite insightful, particularly with the underpinning that in human communication, it is the receiver of the message that actually can judge whether communication is open and receptive. The finding implies that while many parents may perceive their practice of sexual communication as quite open and receptive their children may not really adjudge it so, particularly because of the element of power that is an integral part of parent-child relationship. For instance Upchurch, Aneschensel, Sucoff, and Levy-Storms (1999) indicated that when teens perceived too much psychological control on the part of parents, they were more likely to have an earlier sexual debut. Hence, it seems parents need not exert excessive psychological control while closely monitoring the lives of their children. Parental warmth or support has also been found to relate to adolescent sexual behaviour (Miller, Benson, & Galbraith, 2001).The view of the adolescent respondents during the IDIs about parent's practice of discussion on sex-related matter was not too different. Majority of interviewees reported that their parents mainly tell them to avoid premarital sex, particularly because of unwanted pregnancy and HIV/AIDS infection; parents barely allow them ask questions or express view points.

Table 4. Distribution of Respondents by Openness of Sexual Discussion

Openness of Sexual Discussion	Fathers		Mothers		Children	
	Freq.	%	Freq.	%	Freq.	%
Poor	3	1.9	3	1.9	2	1.2
Average	80	49.7	78	48.4	106	65.9
Good	78	48.4	80	49.7	53	32.9
Total	161	100	161	100.0	161	100.0

Many of the girls reported that they learnt about menstruation from friends and books. The point here is that in most of the homes, parent-child sexual communication mainly means admonitions against premarital sex instead of open, receptive, sequential and time sensitive conversations.

Content of Sex-Related Discussions

Table 5 which reflects the distribution of parent respondents by the last sexual issue or topic parents discussed with their adolescents further reinforced the fact that in most homes in Ondo State, parent-child sexual communication mainly dovetails to admonitions against premarital sex instead of open, receptive, sequential and time sensitive, conversation about sexual development and decision making. The majority (59.7%) of fathers and (51.6%) of mothers indicated that the last sexual topic they discussed with adolescents was to avoid premarital sex. For fathers, (22.4%) could not remember what they last discussed as regards sex-related matters with their children, (1.2%) discussed sex and puberty, (15.5%) discussed sex education generally, (0.6%) told his girl-child that keeping her virginity gives honour to name of God and another (0.6%) tried to make his adolescents to know the consequences of premarital sex. For Mothers on the other hand, (1.9%) discussed the need to avoid the sharing of sharp objects with anybody, (1.9%) could not remember the topic discussed, (23.5%) discussed sexuality education generally, (0.6%) discussed the danger in using condom, (18.6%) discussed with their female children that they have to live right and keep themselves and lastly, (1.9%) also discussed with their female children about what to do when their period is on (i.e. when menstruating). There was also a convergence in the children responses on this issue. The majority (51.6%) of the children indicated that the last sexual topic their parents discussed with them was boyfriend/girlfriend relationships and avoidance of sex, while all other topics discussed shared in varying percentages the remaining (48.4%).

Table 5. Distribution of Parent Respondents by the last Sexual Topic discussed with their Adolescents

Fathers	Father		Mother	
	Freq.	%	Freq.	%
Boyfriend/girlfriend relationships and avoidance of sex	96	59.7	83	51.6
Cannot remember	36	22.4	3	1.9
Discussion on sex and puberty	2	1.2		
Sex education generally	25	15.5	38	23.5
That keeping her virginity gives honour to name of God	1	.6		
Make them to know the consequences of premarital sex	1	.6		
To live right and keep herself			30	18.6
What to do when their period is on			3	1.9
The danger in using condom			1	.6
Not to share sharp objects with anybody			3	1.9
Total	161	100	161	100

Table 6 displays the distribution of parents and adolescents respondents by content of parent-child communication on sex-related matters. It shows the distribution of the respondents by the shallowness or depth of the nature of sexual discussions they do have with their adolescent children. Responses to the number of sexual issues or topics that parents had discussed with their adolescents were scored and computed to derive the distribution. Some (18.0%) fathers' contents of discussion on sex-related matters with their adolescents was shallow, the majority (42.9%) of fathers were at an average level, while a sizeable number (39.1%) of fathers had sexual discussion with their adolescents that could be described as being deep. Similarly, the level of sexual conversation of a few (10.6%) mothers was shallow, a good number (40.4%) of mothers were at an average level, while the majority (49.1%) of mothers' discussions on sex-related matter with their adolescents could be classified as deep. Again, as with other analyses, the children responses (after scoring and computation) differ from those of their parents. Just (8.7%) of children judged parents as having shallow sexual discussions with them; however, the majority (52.8%) of parents were judged as being at average level of sexual conversation, while a sizeable (38.5%) number of parents were judged to have deep level of sex-related discussions.

Table 6. Distribution of the respondents by Content of communication

Content of communication	Fathers		Mothers		Children	
	Freq.	%	Freq.	%	Freq.	%
Shallow	29	18.0	17	10.6	14	8.7
Average	69	42.9	65	40.4	85	52.8
Deep	63	39.1	79	49.1	62	38.5
Total	161	100.0	161	100.0	161	100.0

This finding implies that while parents may think or feel they have indeed discussed some sex-related issues with their adolescents, the children may not perceived them to have done so. In some other situations, the parents might not have satisfied the children's curiosity or quest for quality information. Possibly, the parents gave vague answers or threw an air of mystery around sex-related discussion. This kind of situation is usually very unhealthy for adolescents as it becomes a push-factor to seek information from unmediated sources such as friends, internet, magazine e.t.c. This compares favourably with earlier studies (Osei 2009, Duell and Steinberg, 2019). The study thus further examined the number of parents who do not have inhibition and are comfortable discussing sexual issues with their children.

Table 7 shows the percentage distribution of the parents by inhibition and comfort towards parent-child sexual communication in the State.

Table 7. Distribution of Parent Respondents by Inhibition and Comfort toward Parent-Adolescent Sexual Discussion

Item	Fathers		Mothers	
	Freq.	%	Freq.	%
Inhibition toward Parent-Adolescent Sexual Discussion				
Parents who have inhibition	82	51.0	85	52.8
Parents who don't have inhibition	79	49.0	76	47.2
Comfortability with Parent-Adolescent Sexual Discussion				
Parents who are Comfortable	82	51.0	100	62.1
Parents who are not comfortable	79	49.0	61	37.9

As seen in the table, the number of fathers who had inhibition and those who do not were almost equal (51.0%) and (49.0%) respectively. The indication is that most of the fathers had inhibitions discussing sexual issues with their adolescents. A similar situation holds for mothers as (52.8%) noted that they have inhibitions and (47.2%) noted that don't have inhibition

discussing sexual issues with their children. As to whether fathers are comfortable discussing sex-related issues with their adolescents, most (51.0%) of fathers opined that they are comfortable while many (49.0%) observed that they were not comfortable with such discussion. For mothers, the majority (62.1%) opined that they were comfortable with sexual discussion, while a sizeable number (37.9%) said they were not comfortable with sexual discussion with their adolescents.

The implication of this findings or the most probable explanation is that while the generality of parents still have inhibition discussing sexual issues with adolescents and the general norm being to discuss limited topics because of inhibitions about discussing certain sex-related topics with their children, the number of sexual topics mothers are probably comfortable discussing with the children are more than those of fathers.

The study probed further to investigate the possible differences in the sexual topics fathers and mothers discussed with their adolescents in the community. This is displayed in table 8. As seen in the table, some (33.5%) noted that they had discussed the reproductive organs with their adolescents, while the majority (66.5%) of fathers had not done so. Most (53.4%) mothers too said they had not discussed the reproductive organs with their children, but many (46.6%) indicated that they have discussed it with their adolescents. Again, the majority (62.1%) of father respondents had not discussed monthly period with their daughters, nonetheless, some (37.9%) of them had had such discussion. For mother respondents on the other hand, some (34.2%) noted that they had not discussed it with their adolescents, but the majority (65.8%) had discussed it. A sizeable number (32.3%) opined that they had discussed wet dreams with their adolescent boys, however, the majority (67.7%) of fathers had not discussed wet dreams and the possible causes with their adolescent boys. Similarly, the majority (62.7%) of mothers had not discussed wet dreams and the possible causes with their adolescents, while some (37.3%) had done so. As regards masturbation, the majority (65.8%) of fathers had not discussed this with their adolescents, while a sizeable number (34.2%) noted that they did. In the same vein, good number (39.8%) of mothers affirmed that they had discussed it, although the majority (49.7%) of mothers had not discussed masturbation with their adolescents. The majority (51.6%) of fathers had discussed the emotional and physical changes of puberty with their adolescent, while many (48.4%) of fathers had not discussed it. Similarly, the majority (54.7%) of mothers had discussed the emotional and physical changes of puberty, but a sizeable number (45.3%) had not discussed it. For discussion about boy/girl lover, a good number (44.1%) of fathers had discussed it with their adolescent, while the majority (55.9%) of fathers had not discussed it. In the same vein, many (47.8%) of the mothers had discussed

about boy/girl lover with their adolescents, while most (55.2%) of them noted that they had not discussed it.

Table 8. Distribution of Parent Respondents by Sexual Topics Discussed with Children

Sexual Topics	Fathers				Mothers			
	who had discussed it		who had not discussed it		who had discussed it		who had not discussed it	
	Freq.	%	Freq.	%	Freq.	%	Freq.	%
Reproductive Organs	54		107	66.5	75	46.6	86	53.4
Monthly Period	61	33.5	100	62.1	106	65.8	55	34.2
		37.9						
Wet Dreams and Possible Causes with my Boy Masturbation	52	32.3	109	67.7	60	37.3	101	62.7
	55		106	65.8	64	39.8	97	60.2
		34.2						
Emotional and Physical Changes of Puberty	83	51.6	78	48.4	88	54.7	73	45.3
Boy/Girl lover	71		90	55.9	77	47.8	84	52.2
Emotional and Physical Consequences of Sexual Involvement	84	44.1 / 52.2	77	47.8	93	57.8	68	42.2
Condom and Prevention of Conception and STIs	50	31.1	111	68.9	58	36.0	103	64.0

NB: The total (n) for each category of sexual topic discussed is 161 for fathers and 161 for mothers

The majority (52.2%) of fathers had discussed the emotional and physical consequences of sexual involvement with their adolescent, while a sizeable number (47.8%) had not done so. Just as with fathers, the majority (57.8%) of mothers had discussed the emotional and physical consequences of sexual involvement with their adolescents, but some (42.2%) mothers had not discussed it. Lastly, the majority (68.9%) of fathers had not discussed condom and prevention of conception and STIs with their adolescents, though some (31.1%) noted that they had discussed it with their children. For mothers also, the majority (64.0%) had not discussed condom and prevention of conception and STIs with their adolescents, while some (36.0%) had discussed such with their children.

Table 8 indicates that for each sex-related topics discussed with the adolescents among households in the state, the percentage of mothers who have had such discussion with the children exceed that of fathers. This means that in most households in the community, mothers discuss more sexual topics with the adolescent children than fathers. The findings reverberates the submissions of DiIorio, Kelley and Hockenberry-Eaton (1999) that mothers generally talk more than fathers to both sons and daughters about most sexual topics. However, it is also significant to note that the majority (57.8%) and (52.2%) of both fathers and mothers respectively had never discussed condom and prevention of conception and STIs with their adolescents. An indication that discussion about contraceptive is a topic which majority of households in the state avoid. The finding implies that as much as parents discuss sexual issues with their adolescents, they avoid discussing topics they perceive could encourage sexual permissiveness among adolescents. On the other hand, the focus on protective and moral goals could in itself reduce the importance of sexuality communication in family socialization, increase silence on sexual discussion, and thus lead to less mention of the subject. This could be a possible explanation for the observed high levels of silence experienced by adolescents with regard to parents in respect of parent-child sexual communication

The analysis on the table further indicated that when compared to all other sex related topics, the emotional and physical consequences of sexual involvement was the chief topic fathers discussed with their adolescents (it had the highest percentage (52.2%). This finding is very significant. The implication of this finding is that fathers are preoccupied with the prevention of sexual involvement than any other issue during parent-child sexual communication. While mothers are equally concerned, since mothers' percentage (57.8%) for this sexual topic was higher than that of fathers' (52.2%); yet, mothers highest percentage (65.8%) was indicated under discussion about monthly period otherwise called menstruation with the children. Nonetheless, this probably might be due to the fact that there were more female adolescents in the study. These findings support the submission of Libati and Mwale (2019) that parents are as expected concerned that teaching adolescents about sex might encourage early sexual activity among them; hence, parents often use admonitions which they described as "fearful messages" during parent-child sexual conversations to uphold abstinence and discourage early involvement in sexual activities by adolescents.

5.   Conclusion and Recommendations
The study revealed that the existing practices of parent-child communication on sex-related matters in Ondo State. It demonstrated that parent-child sexual communication is occasional, mothers initiate sex-related

discussion with children more than fathers, sexual conversations are generally not open and receptive, content of parent-child sexual communication chiefly centres on admonitions against premarital sex. Furthermore, mothers discuss more sexual topics with the adolescent children than fathers and discussion about contraceptive with adolescents is a topic which majority of households in the state avoid. Lastly, many parents still have inhibitions discussing sex-related issues with adolescents. There's need for interventions that target parents enlightenment and education and addressing cultural norms that impede parent-child sexual conversations; in order to reposition families for parent-child communication that is open, receptive, sequential and time sensitive; conversations about sexual development and decision-making that can help adolescents avoid sexual risk taking behaviour and transit to healthy members of society.

Conflicts of Interest: The authors have no conflict of interest

Ethical Issues: After due ethical approval, the study was conducted in a way that upholds the ethics of human subject research.

References:
1. Adolescent and Youth Demographics (2022). Adolescent and Youth Demographics: A brief Overview-United Nations Population Fund. Retrieved on March. 24, 2022 https://www.unfpa.org/filesPDF.
2. Bastien, S., Kajula, L.J., & Muhwezi, W.W. (2011). A review of studies of parent child communication about sexuality and HIV/AIDS in sub-Saharan Africa. Reproductive Health. (8) 25. http://www.reproductive-health- journal.com/ content/8/1/25
3. Berkel, C. (2019). The Role of Sexual Agency and Consent in Healthy Adolescent Development. Paper commissioned by the Committee on Applying Lessons of Optimal Adolescent Health to Improve Behavioural Outcomes for Youth. https://www.nap.edu/resource/25552/The%20Role%20of%20Sexual%20Agency%20and%20Consent%20in%20Healthy%20Adolescent%20Development.pdf
4. Burke, L., Gabhainn, S.N., & Kelly, C. (2018). Socio-demographic, health and lifestyle factors influencing age of sexual initiation among adolescents. International Journal of Environmental Research and Public Health. (9), 15.PMC free article: PMC6163828. PubMed:30150572

5. DiIorio, C., Kelley, M., & Hockenberry-Eaton, M. (1999). Communication about sexual issues: mothers, fathers, and friends. Journal of Adolescent Health. (23), 181-189

6. Duell, N., Steinberg, L. (2019). Positive risk taking in adolescence. Child Development Perspectives, 1(13), 48–52.

7. Federal Ministry of Health, (2012). National Strategic Framework on the Health and Development of Adolescents & Young People in Nigeria 2007 – 2011. Federal Ministry of Health, Abuja, Nigeria

8. Fisher, T.D. (2004). Family foundations of sexuality. In Harvey, J. Wenzel, A and Sprecher, S.ed. The Handbook of Sexuality in Close Relationships. 385-409 Mahwah, NJ: Erlbaum.

9. Hagan, J.F., Shaw, J.S., & Duncan, P.M. (2017). Bright Futures: Guidelines for Health Supervision of Infants, Children, and Adolescents.4th ed. Elk Grove, IL: American Academy of Pediatrics, 2017.

10. Haub, C. (2013). Trends in Adolescent Fertility a Mixed Picture. Population Reference Bureau. Washington, DC USA

11. L'Engle, K.L., Brown, J.D., & Kenneavey, K. (2006). The mass media are an important context for adolescents' sexual behaviour. Journal of Adolescent Health, (38),186-192

12. Libati, M., & Mwale, A. (2019). Limitations of Using 'fearful messaging' in Promoting Safe Sex

13. Practices amongst Sexually Active Youths: from an African Perspective. Journal of Sociology and Anthropology. 3(1):25-28. doi: 10.12691/jsa-3-1-4. http://www.sciepub.com/JSA/abstract/10499

14. Lieberman, L.D. (2006). Early predictors of sexual behaviour: implications for young adolescents and their parents. Perspectives on Sexual and Reproductive Health, 38 (2), 112- 114

15. McNeely, C., & Blanchard, J. (2010). The Teen Years Explained: A Guide to Healthy Adolescent Development. Baltimore, MD: Johns Hopkins Bloomberg School of Public Health, Centre for Adolescent Health.

16. Miller, B.C., Benson, B., & Galbraith, K.A. (2001). Family, relationships and adolescent Pregnancy Risk: A Research Synthesis. Developmental Review, (21), 1-38.

17. Nwokocha, E.E. (2010). Factors influencing Sex-education for in-school Adolescents in Ibadan, Nigeria. Ibadan Journal of the Social Sciences.8.1

18. Osei, A. (2009). Sex education in Ghanaian society: the skeleton in the cupboard. Retrieved on March. 24, 2022,http://www.ashesi.org/ACADEMICS/ WRITING_CENTRE/2009_Writing/09_ Osei_essay.pdf.

19. Sakeah, E. (2013). Ensuring Skilled Attendants at Birth in Rural Ghana. Population Reference Bureau. Washington, DC USA

20. Santrock, J.W. (2005). Adolescence.4th ed. New York: McGraw-Hill.

21. Sunmola, A .M., Morenike Dipeolu, M., Babalola, S., & Adebayo, O. D. (2003). Reproductive knowledge, sexual behaviour and contraceptive use among adolescents in Niger State of Nigeria. African Journal of Reproductive Health,7(1), 37-48.

22. Upchurch, D.M., Aneschensel, C.S., Sucoff, C.A., & Levy-Storms, L.(1999). Neighbourhood and family contexts of adolescent sexual activity. Journal of Marriage and the Family, (6), 920-933.

23. Weber, M. (1949). Methodology of the Social Sciences. Glencoe Free Press.

24. World Health Organization. (2012). Preventing early pregnancy and poor reproductive outcomes among adolescents in developing countries. Geneva WHO

25. Wight, D., Williamson, L., & Henderson, M. (2006). Parental influences on young people's sexual behaviour: A longitudinal analysis. Journal of Adolescence, (29), 473-494.

Alliance Motives among Manufacturing SMES: Evidence from an Emerging Economy

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Abstract

This study was designed to investigate the effect of environmental-based motives on firm performance. The study targeted manufacturing Small and Medium Enterprises based in Kenya whose performance has been negatively affected by high industry competition, low technology uptake, and industry regulation. The study was geared towards establishing the environmental-based motives pushing and pulling manufacturing Small and Medium Enterprises toward strategic alliance formation. To this end, the study was set to investigate whether compliance with government regulation, the need to grow market share, and the need to increase customer base motivates manufacturing Small and Medium Enterprises in Kenya to form strategic alliances. The target population for the study consisted of 74 SMEs and the study adopted descriptive and explanatory research designs and collected data from company CEOs or senior managers. Descriptive and inferential statistics were used to analyze the survey data. The study findings indicated that environmental-based motives have a positive and significant effect on the performance of manufacturing Small and Medium Enterprises in Kenya (Adj $R^2 = 0.484$). Based on these findings, the study concluded that environmental-based motives of compliance with the government regulation, market share, and customer base motivate manufacturing Small and Medium Enterprises to form strategic alliances and that these motives have a positive and significant

effect on firm performance. The study contributed to the general body of knowledge by bridging the contextual and empirical gaps identified after the literature review. The study recommends that top management teams in the manufacturing industry should map environmental-based motives and align such motives to specific aspects of their value chain activities.

Keywords: Strategic Alliances, Firm Performance, Manufacturing Sector, Small and Medium Enterprises, Emerging Economy

Introduction

As strategic alliances have increased in the last decade, researchers have sought to establish how such strategies contribute to firm performance. This study defines a strategic alliance as a cooperative agreement formed by two or more firms to achieve a strategic objective (Hitt, 2000). The concept of strategic alliance involves the formation of a functional partnership by one or more firms geared towards the achievement of specific objectives, and the perspective of resource exchange is a central theme in alliances (Gulati, 1998; Yasud, 2005; Remigijus & Giedrius, 2013). An extensive literature exists on strategic alliance, which documents the benefits that firms accrue from such strategic moves (Park & Kang, 2013; Yang, Zheng & Zhao, 2014; Ferreira & France, 2017; Talebi, Farsi & Miriasl, 2017) and the risks associated with strategic alliances (Rambo, 2012). One specific stream of research that has been of interest to scholars is the strategic alliance formation motives. Small and Medium enterprises research, for instance, has highlighted alliance formation motives to include resource acquisition (Jeje, 2014; Gundolf, Jaouen & Gast, 2018; Yang, Lai, Wang, Rauniar & Xie, 2015), performance improvement, increasing survival rates, and enhancing competitive advantage (Flatten, Greven & Brettel, 2011; Gronum, Verreynne & Kastelle, 2012; Zhao, 2014; Haase & Franco, 2015). Despite the significant attention accorded to this stream of research, few studies have focused on alliance formation motives from an emerging economy perspective with most studies occurring in developed nations.

This study perceives that the environmental dynamics present in an emerging economy plays a critical role in influencing the motives for alliance formation, especially for SMEs operating in these economies. Guo and Cao (2014) point out that emerging economies present peculiar challenges to firms and therefore, this context is relevant for advancing existing theory on organizational strategy. While some studies have focused on the effect of environmental forces on alliance formation (Dickson & Weaver, 2011), these aspects of alliance formation present a unique challenge due to the existing dynamics of each external environment which restricts the generalization of findings (Moeller, 2010).

Although the literature on the effect of alliance formation motives on firm performance is scarce, existing studies have presented contradicting findings. For example, Mukherjee, Gaur, Guar, and Schmid (2013) investigated the effect of environmental uncertainty and alliance formation and found out that environmental uncertainty does not influence strategic alliance formation among SMEs. More so, environmental uncertainty may encourage sole operation modes which present more flexibility. On the other hand, Dickson and Weaver (2011) established that SMEs from several countries are motivated to form strategic alliances by the existing institutional environment and factors such as laws, regulations, and policies which positively influence the creation of strategic alliances among SMEs.

The effect of strategic alliance motives on firm performance has raised debate since the contribution of a strategic alliance among SMEs is not fully understood from a performance perspective (Gronum et al., 2012). The objective of this study is twofold. The first is to investigate the effect of strategic alliance formation motives from an environmental perspective and to identify the motives that push and pull manufacturing SMEs in Kenya to form strategic alliances. The second is to establish the effect of such formation motives on SME performance.

This study explores the concept of environmental-based motives in order to identify the motives that pull and push manufacturing SMEs to form strategic alliances. The study also analyzes how such environmental-based motives affect manufacturing SMEs' performance. Therefore, this study is expected to advance the understanding of strategic alliance formation motives from the context of an emerging economy, particularly in Kenya.

This paper is subdivided into four sections. First, a review of existing literature on strategic alliance motives is undertaken. The second part presents the research methodology, and the third section outlines the data analysis which presents the views of top managers in manufacturing SMEs in Kenya. A discussion of the environmental-based motives and their effect on SME performance is presented in section four while section five presents the study's conclusion, implications of the study findings, and future research.

Strategic Alliance Motives

One of the streams of research in strategic alliances that has gained popularity is the motives that lead to strategic alliance formation. Firms' motivation to enter or form a strategic alliance is based on diverse reasons, factors, and conditions that drive firms to pursue strategic alliances (Lin & Darnall, 2015). Different scholars have identified factors that motivate SMEs to enter into strategic alliances. For example, Oliver (1990) linked alliance formation to organizational and environmental factors which are based on different contingencies as the basis for alliance formation. According to this

classification, organizational factors constitute efficiency and stability, while environmental factors include necessity, asymmetry, reciprocity, and legitimacy. In addition, market growth, competitive position in the industry, and other general environmental factors contributes to uncertainty such as regulation.

Kinderis and Jucevicius (2013) undertook an analysis of the common categorization of alliance formation motives and determined that the most common categorization is based on strategic motives which portray strategic intentions for firms, necessity and compliance, and opportunity exploitation. Eisenhardt and Schoonhoven (1996) categorize alliance formation motives into strategic and social motives which are based on the resource-based view of the firm. The authors articulate that strategic alliances are created to meet the strategic resource needs and social resource opportunities. Gils and Zwart (2009) categorize strategic alliance formation motives into organizational, industry/environmental, and partner-related. A summary of the strategic alliance motives as proposed by different authors is presented below.

Motives for Alliance Formation	Author
Strategic and Social motives	Eisenhardt and Schoonhoven (1996)
Organizational and environmental factors	Oliver (1990)
Strategic intentions	Kinderis and Jucevicius (2013)
Organizational, Industry/environmental, and partner related	Gils and Zwart (2009)

(Source: Author 2022)

An analysis of the strategic alliance formation motives indicates that organizational and environmental motives are common attributes. However, for the purpose of this research, the classification by Gils and Zwart (2009) is considered more complete and is adopted by this study. In addition, the classification of industry/environmental-based motives is selected for investigation by this study. According to Gils and Zwart, relevant indicators for environmental-based motives include market growth, competitive position in the industry, and other general environmental factors contributing to uncertainty like regulation. This study pursued the same direction of measuring environmental-based motives using the indicators of regulation, market share, and business growth due to their applicability to the Kenyan context.

Literature Review

This section presents the theoretical and empirical review of relevant literature as guided by the study's variables. The theoretical review is presented first followed by the empirical review.

Theoretical Review

The study is anchored on the Resource-Based View (RBV) of the firm, which has been used extensively in studies of strategic alliances to demonstrate how firms gain competitive advantage and improve their performance by accessing resources held by other firms (Barney, 2001; Lavie, 2006). The resource argument can be a source of difference in organizational performance based on core competencies and capabilities gained from resource reconfiguration (Mahoney & Kor, 2003). Empirical studies on strategic alliances have demonstrated that organizations can access external resources held by their partners (Klein & Pereira, 2016; Wagner & Zidorn, 2017; Ferreir & Franco, 2017). As a result, strategic benefits have been attached to such relationship-based alliances that provide a pathway to access resources, leading to improved performance and competitive advantage (Panda, 2014; Gronum, Verreynne & Kastelle, 2012; Muange & Maru, 2015).

The propositions of the RBV fail to demonstrate the resource exchange within a strategic alliance configuration, which is not automatic. Therefore, this study relied on the resource dependence theory to demonstrate resource exchange in strategic alliances. The RDT offers that the pursuit to accumulate resources through inter-organizational cooperation creates dependencies between a firm and its external environment, which consist of suppliers, customers, competitors, and industry regulators to achieve strategic goals (Pfeffer & Salancik, 1978). Therefore, it is assumed that depending on the resources held by other firms, SMEs can acquire new resources, competencies, and capabilities to improve operational activities, manage uncertainty, and adapt to the organizational environment by initiating strategic alliances with other firms (Parmigiani & Rivera-Santos, 2011).

However, the contribution of such resources, competencies, and capabilities to firm performance is best explained by the dynamic capabilities theory which contributes to superior performance when organizations align their internal resources with the opportunities identified from the external environment and systematically reconfigure their resources to improve organizational structures, systems, and processes (Wilden, Gudergan, Nielsen & Lings, 2013). Kyengo, Muathe, and Kinyua (2019) affirm that improving resource bundles can translate to dynamic capabilities that can enhance the implementation of operational activities and improve performance. The complementary nature of the theoretical underpinning adopted by this study seeks to fully explain the relationship that exists between strategic alliance motives and firm performance.

Empirical Review
Regulatory Compliance Motives and Firm Performance

The external business environment has been a critical factor that influences organizational behaviour and also forms a key motivator to alliance formation. Skokic (2015) assessed the effect of the social-economic environment on strategic alliance formation targeting SMEs in the hotel industry. The study found that high administrative barriers and lack of resources motivated alliance formation among small firms. However, the study concluded that the institutional environment is critical in influencing alliance formation.

The effect of factors like weak institutions and increased regulation intensifies the pressure faced by SMEs to improve their performance in the Kenyan business environment. The study anticipates that manufacturing SMEs will be motivated to form strategic alliances to improve their regulatory compliance and maintain their competitiveness. A survey by Dickson and Weaver (2011) established that the business environment plays a critical role in influencing the alliance formation motives held by firms. The study affirmed that SMEs are motivated to form strategic alliances to comply with existing regulations and policies.

Blind and Mangelsdorf (2016) also point out that strategic alliances, especially industry associations and professional bodies, have been formed to influence regulation and policy issues. The same authors offer that strategic alliances among firms can improve conformity to regulation as technical requirements can be clearly defined and explained through alliances, whereas barriers caused by regulations and policies can be reduced through industry associations. This study observes that the need to conform to existing regulations will motivate manufacturing SMEs to join strategic alliances with other firms.

A study by Lu and Steinhardt (2022) on alliance building among non-governmental organizations in China reported that the regulations and policies existing in a country push firms to form strategic alliances especially when firms lack resources. The study identified strategic alliances as a platform for resource sharing, knowledge sharing, coordination of activities, and building the capacity of less powerful firms. This study argues that such strategic moves to form strategic alliances are associated with the desire of top managers to maintain or improve the performance of their firms. Thus, the study proposed that:

H_1: For SMEs adopting alliances as a strategic option to enhance their regulatory compliance, there will be a significant effect on the regulatory compliance strategy and the corresponding firm performance.

Market Share Growth Motives and Firm Performance

Empirical studies have also shown that market share motives push manufacturing firms to form a strategic alliance. A study by Jin, Zedtwitz, and Chong (2015) investigated strategic alliance formation motives among Chinese firms and established that firms are motivated to ally by industry factors of market share. The study determined that strategic alliances are a common strategy among firms that desire to expand their market shares. Ghauri, Lutz, and Tesfom (2003) demonstrated that SMEs are motivated to form strategic alliances to benefit from knowledge sharing, technology sharing, and training which enables them to overcome challenges in entering export markets for their manufactured products. Another study by Zikri (2020) investigating Malaysian banks established that the need to grow market share leads to strategic alliances aimed at accessing markets, gaining new capabilities, and knowledge sharing.

Likewise, Oehme and Bort (2015) supported the argument of knowledge sharing among partners in an alliance configuration by demonstrating that firms in the same industry mimic the market entry strategies of their strategic alliance partners to overcome environmental challenges that limit internationalization. Khattab (2012) established that firms in the hotel sector in Jordan are motivated to form marketing alliances to gain access to knowledge resources and the need to improve their performance. The author observes that such motives contribute to gaining access to new technology, cost-sharing, pooling resources, and developing new products. Zhang and Yin (2012) established that firms are motivated to create strategic alliances, specifically research and development alliances, to facilitate entry into new foreign markets and overcome market barriers.

Strategic alliance literature indicates that the creation of marketing alliances can also offer growth capabilities to firms due to access to new markets and the acquisition of resources to improve product offerings. Such alliances create value by increasing customer numbers, satisfaction, and retention (Moorman, 2009). Thus, the study proposed that:

H_2: For SMEs adopting alliances as a strategic option to enhance their market growth, there will be a significant effect on the market growth strategy and the corresponding firm performance.

Business Growth Motives and Firm Performance

The literature on manufacturing SMEs in Kenya reveals that the diversification of products among manufacturing SMEs inhibits their efforts to compete against imports into the local market (UNIDO, 2011). This study observed that manufacturing SMEs would be motivated to form strategic alliances to grow their business. A study by Franco and Pereira (2013) reported that process factors that include acquisition of innovation and technology

contribute to differentiation and provision of new services, and this motivates hospitality firms to form strategic alliances. Relatedly, a study by Klijn, Reuer, Buckley, and Glaister (2010) looked at international joint ventures and established that product diversification, developing new technologies and knowledge, and sharing investment costs motivated firms to engage in international joint ventures. Maqsoom, Charoenngam, Masood, and Awais (2013) reported that Pakistan Contractors are motivated by business growth factors of expanding the firm's business, optimizing the use of firm resources, and enhancing the firm's international experience. These motives were categorized as internal to the firm. Fasanya, Ingham, and Read (2022) reported that business growth motives among sub-Saharan firms include the desire for internationalization through creating network linkages with local firms, government departments, and distributors.

A study by Olsen, Harmsen, and Friis (2008), targeting firms in the food industry in the Netherlands, established that firms joined strategic alliances based on their motivation to share knowledge and complement already owned resources. The study also established that external factors do not motivate alliance building. Jeje (2014) also reported that medium-sized firms in Tanzania are not motivated by the motives to grow businesses through future business acquired through the formation of strategic alliances.

Strategic alliance literature indicates that the creation of business growth alliances can also offer growth resources and capabilities to resource-restricted firms like SMEs, thus enabling them to increase production efficiency, improve product diversification, and share investment costs with partners. This study argues that business growth alliances will improve the performance of manufacturing SMEs by the identification of new opportunities through knowledge acquisition (Talebi, Farsi & Mirisi, 2017), improve product diversification (Klijn, Reuer, Buckley & Glaister, 2010), and optimize resource utilization through increased efficiency (Maqsoom, Charoenngam, Masood & Awais, 2013). Thus, the study proposed that:

H_3: For SMEs adopting alliances as a strategic option to enhance their business growth, there will be a significant effect on the business growth strategy and the corresponding firm performance.

Research Methodology
Target Population and Data

The selection of the sample population proceeded as follows. Firstly, a complete list of all the manufacturing firms was done using the Kenya Association of Manufacturer directory for the year 2017/2018. Secondly, the listed firms were stratified based on size, geographical location, and sub-sector. The survey defined manufacturing firms as those involved in value addition activities and as such, the service firms were excluded from selection.

In line with the Kenyan government's definition of Small and Medium Enterprises, the firm was categorized as small (10-50 employees) and medium (50-100 employees). This categorization yielded manufacturing SMEs operating in Nairobi County which was distributed among 13 sub-sectors. Thirdly, SMEs with active strategic alliances were selected through telephone interviews. In the end, 74 SMEs were selected based on the above classification.

The primary data was collected using structured questionnaires which had two sections. Section one included information on firm and respondent characteristics, forms of strategic alliances formed, and classification of the strategic alliance in terms of geographical region. Section two comprised of questions on strategic alliance formation motives. The data collection process included attaining the appropriate research permit from government Commission. The research questionnaires were administered to the SME CEO or a senior manager who works closely with the CEO. The study used the drop and pick approach because this gives the respondents the convenience of filling the questionnaire at their own time. In addition, it increases the response rate and it also presents the researcher with the opportunity to make personal contact with the respondents where clarifications can be offered to the respondent if needed (Trochim, Donnelly & Arora, 2015). Bi-weekly follow-ups were carried out to remind some respondents to fill the questionnaire as agreed. The data collection process was carried out between October 2020 and February 2021.

The study achieved an overall response rate of 100%, which was deemed necessary based on the size of the study target population. The data collection tool was subjected to a reliability test using Cronbach's alpha and all 4 measurement items used for this study showed acceptable levels of reliability with firm performance having a score of ($\alpha= 0.833$), regulatory compliance motives ($\alpha=0,751$), market share growth motives ($\alpha=0.708$), and business growth motives ($\alpha=0.754$). The overall score for all items was recorded as ($\alpha=0.887$).

1. Measurements

Environmental-Based Motives: The variable environmental-based motive was operationalized using environmental factors of regulation and industry competition as validated by Gils and Zwart (2009). The study respondents were requested to report on a 5-point Likert scale the likelihood of forming a strategic alliance (1) to comply with the existing government regulation and policies, (2) to increase their market growth, (3) to increase their business growth.

Firm Performance: The concept of performance has been measured using various indicators in prior empirical studies. Extant empirical studies focusing

mainly on SMEs in the manufacturing sector have indicated that financial measures of firm performance are suitable. This study used the measures of company sales and net profit as used in an emerging economy context by Maduekwe and Kamala (2016). In measuring organization performance, a comparison was done looking at performance before and after the SMEs formed the strategic alliance. Using a 5-point Likert scale, the respondents were requested to report the relative change in company net profit and overall sales growth.

Control Variables: The study controlled for firm age which was based on years of existence of the SMEs. The firm size was also controlled by using the number of employees in the firm which is the adopted definition of SMEs.

Data Analysis

The survey data was analyzed using descriptive statistics where the mean and standard deviation were used to present the variable characteristics, while inferential statistics were used to indicate correlations and to determine the nature and magnitude of the variable's relationship. The data analysis was carried out using SPSS version 23. The data analysis was performed using a 95 percent confidence level, while Pearson's product moment correlation (r) was used to demonstrate the nature and magnitude of the variable relationship. The amount of variation between the dependent and independent variables was measured using the coefficient of determination (R^2).

Findings

Table 1 outlines the attributes of the manufacturing SMEs that participated in this study and the data collected includes the company size, age, main collaborators, purpose of collaboration, and classification of the collaborators based on geographical location.

Table 1. Profile of the Firms

	Description	Frequency	%
	Company Size		
1.	10-50 employees	54	73.0
2.	50-100 employees	20	27.0
3.	More than 100 employees	0	0
	Total	74	100.0
	Years of existence (company)		
1.	1-3 years	10	13.5
2.	4-5 years	19	25.7
3.	More than 5 years	45	60.8
	Total	74	100.0
	Main collaborators with the company		
1.	Distributors of goods	68	91.9
2.	Government Departments	13	17.6
3.	Consultancy firms	2	2.7
4.	Universities/Collages	1	1.4
5.	Media Companies	6	8.2
	Purposes of the existing strategic alliance in the company		
1.	Distribution of finished products to the market	64	86.5
2.	Provision of research and information	7	9.5
3.	Provision of marketing services	8	10.8
4.	Observation of government policies and regulation	27	36.5
5.	Gaining access to new market	6	8.1
6.	Improving the company status in the industry	29	39.2
	Classification of collaborators based on geographical location		
1.	Local companies	74	100.0
2.	Regional companies	49	66.2
3.	International companies	33	44.6

The survey analysis shows that most of the targeted firms had 10-50 employees and therefore categorized as small. In terms of firm age, most of the firms had operated for more than four years which indicates mastery of industry trends. The analysis also shows that SMEs had formed strategic alliances with local, regional, and international companies. This distribution indicates the diversity of strategic alliance partners among the SMEs in the manufacturing sector.

Descriptive and Correlation Results

Table 2 shows the Pearson correlation results for the independent and dependent variables. The test results indicate that regulatory compliance motives was positively and significant correlated to firm performance ($r=$ 0.651, $p<.001$). The market share growth motives was also positively and significantly correlated to firm performance ($r=$ 0.550, $p<.001$). The business growth motives was positive and significantly correlated to firm performance ($r=$ 0.472, $p<.001$).

Table 2. Descriptive and Correlation Results for Firm Performance and Environmental-Based Motives

	Mean	SD	Firm Performance	Regulatory Compliance Motives	Market Share Growth Motives	Business Growth Motives
Firm Performance	3.68	0.77	1			
Regulatory Compliance Motives	4.00	1.01	.651**	1		
Market Share Growth Motives	4.15	0.89	.550**	.706**	1	
Business Growth Motives	4.35	0.69	.472**	.453**	.540**	1

Despite the outcome of the correlation test, further tested were undertaken to establish causality as recommended by Yount (2000) and Wooldridge (2000) since correlations do not equate to a causal relationship between variables.

The descriptive statistics in Table 2 show that manufacturing SMEs are motivated to a great extent by the motives to improve regulatory compliance (M=4.00), grow their market share (M=4.15), and grow their business (M=4.35). The survey analysis indicates that environmental-based motives contribute to a great extent to the firm performance (M=3.68).

Table 3. Diagnostic Tests for Regression Analysis

	Regulatory compliance motives	Market share growth motives	Business growth motives	Company Net profit	Company Overall Sales
Skewness	-0.577	-0.667	0.350	-0.180	0.258
Kurtosis	-0.112	-0.356	-0.701	-0.732	0.126
VIF	2.566	2.005	2.046	1.475	1.137
Tolerance	0.390	0.499	0.489	0.678	0.880

Before testing the study hypotheses, several diagnostic tests were conducted to ensure that the data met regression analysis assumptions as presented in Table 3. The normality test was carried out using skewness and kurtosis, and the study adopted Meyers, Gamst, and Guarino (2013) recommendation of using values of close to zero or less than ±1.00 to decide whether the study data was normally distributed. The study variables had values that ranged from -1.0 and +1.0, indicating normal distribution. As recommended by Walker and Maddan (2013), this study used Variance Inflation Factor (VIF) and Tolerance to check for collinearity. The VIF for all the variables was below 10, and the tolerance was above 0.1. Consequently, Multicollinearity was ruled out among the study variables (Field, 2009).

Hypotheses Testing

The study also adopted regression analysis to determine the true association among the study Variables (Li, de Zubielqui & O'Connor, 2015).

Table 4. Regression Analysis of Environmental-Based Motives on Firm Performance

Goodness of fit	Test Statistics		P-value
Adjusted R^2	0.484		
R^2	0.505		
F-Statistic (3,70)	20.157		0.000**
Dependent Variable= Firm Performance	**Linear Regression Results**		
	Coefficients	t-statistic	P-value
Constant	0.883	0.881	0.318
Regulatory compliance motives (RCM)	0.664	4.075	0.000**
Market share growth motives (MSGM)	0.475	3.010	0.004**
Business growth motives (BGM)	0.459	2.110	0.038**
a. Dependent Variable: Firm Performance (FP)			
**Significant at 5 percent			

Table 4 show that RCM has a positive and significant effect on FP (β = 0.664, $p<.05$), indicating support for H_1. MSGM also shows a positive and significant effect on FP (β = 0.475, $p<.05$), thus supporting H_2. BGM has a positive and significant effect on FP (β = 0.459, $p<.05$), thus supporting H_3.

The adjusted R^2 value is 0.484, meaning that the variables of regulatory compliance, market share growth, and business growth explain 48.4 percent variation in the firm performance. Consequently, it can be inferred that environmental-based motives affect manufacturing SMEs in achieving the strategic objective of increasing sales and their net profit. The F-statistic shows a value of 23.805, which was significant at 0.000 ($p<.05$), demonstrating that the predicted linear regression model was a good fit for the survey data. This proved that the explanatory power of environmental-based motives on the performance of manufacturing SMEs could be associated with the independent variables adopted. Therefore, the study concluded that environmental-based motives motivate manufacturing SMEs to form strategic alliances, and that such motives are an essential contributor to SME's performance.

The survey findings on the control variables indicate that age was significantly associated with environmental-based motives and firm performance, while the firm size was also significantly related to environmental-based motives and firm performance.

Discussion

The study's overall objective was to establish the effect of environmental-based motives on the performance of SMEs in the manufacturing sector in Kenya. This perspective was embraced to enhance our understanding of the environmental factors of regulation and industry competition that pull and push manufacturing SMEs to form strategic alliances with other firms and establish the effect of such motives on firm performance. The study findings offer unique insights into the strategic alliance motives adopted by Kenyan manufacturing SMEs and how such motives contribute to their performance improvement. The selection of manufacturing SMEs was based on their contribution to economic development in Kenya. However, the respondents were chosen based on their role at the corporate level as well as their participation in decision-making regarding acquisition and allocation of organizational resources, identification, and involvement of stakeholders and formulation of strategies to mitigate environmental pressures.

The survey findings revealed that manufacturing SMEs in Kenya are motivated by diverse environmental-based motives to form strategic alliances. This finding is in line with empirical studies published elsewhere that firms are motivated by more than one motive when forming strategic alliances (Gils & Zwart, 2009). Table 1 indicates that manufacturing SMEs in Kenya have engaged in strategic alliances with government departments, consultancy firms, universities, colleges, and Media companies as well as suppliers of goods guided by their regulatory compliance motives, market share growth motives, and business growth motives. Likewise, the study findings show that

these environmental-based motives contribute to forming strategic alliances with local, regional, and international firms. In addition, the findings indicate that the corresponding intentions of engaging in the strategic alliance include distribution of finished products to the market, access to research and information, access to marketing services, observation of government policies and regulations, access to the market, and improving the company status in the industry.

The study embraced three environmental-based motives: increased compliance with government regulation motives, growing market share motives, and increasing customer base motives. The study findings on hypothesis one indicated that SMEs adopted alliances as a strategic option to enhance their regulatory compliance, to a high extent, with a mean score of 4.00 on the measurement scale. The performance variation caused by the regulatory compliance motives was recorded at 66.4 percent, while the effect of the motives was established as significant. The authors observe that these findings indicate that top management teams in manufacturing SMEs accord high importance to acquiring compliance resources. Such practice motivates manufacturing SMEs to form strategic alliances with other firms in Kenya. The appropriateness of the theme of strategic alliance motives is supported by the drive of this survey to establish how the desire of top management to generate a sufficient pool of strategic resources would be a suitable basis for initiating environmental-based alliances. Moreover, the strategic choice to pursue a strategic partnership to accomplish strategic objectives confirms the perceived importance of organizational resources in achieving strategic goals among SMEs in Kenya.

This study's findings affirm previous empirical studies that have established that the desire to accumulate regulatory compliance resources motivates SMEs to form strategic alliances, and that such resources affect firm performance. For example, Skokic (2015) affirmed that high administrative barriers motivate alliance formation among small firms. Dickson and Weaver (2011) reported that the business environment influences alliance formation and that SMEs are motivated by existing environmental regulations and policies to form strategic alliances. Likewise, Lu and Steinhardt (2022) established that regulations and policies existing in a country push firms to form strategic alliances, especially when they lack resources.

The study findings on hypothesis two indicated that SMEs adopted alliances as a strategic option to enhance their market growth with a high mean score of 4.15 on the measurement scale. The performance variation caused by the market growth motives was recorded at 47.5 percent, while the effect of the market growth motives was established as significant. The study findings reveal a good understanding by top management in manufacturing SMEs of the opportunities and threats posed by the external business environment,

which have been exploited and mitigated through strategic alliances with government departments, consultancy firms, universities, colleges, and Media companies. As such, the acquisition of tangible and intangible resources to match their environmental-based motives of increasing their market share is guaranteed due to the ties and dependencies created between the manufacturing SMEs and their strategic alliance partners (Pfeffer & Salancik, 1978). Table 1 shows that market growth motives contribute to forming strategic alliances with local, regional, and international firms. In addition, the findings indicate that the corresponding intentions of engaging in the market growth strategic alliance include distribution of finished products to the market, access to research and information, access to marketing services, access to the market, and improving the company status in the industry.

This study's findings uphold the findings of previous empirical studies that have established that the desire to amass market growth resources motivates SMEs to form strategic alliances, and that such resources affect firm performance. For instance, Jin, Zedtwitz, and Chong (2015) established that firms are motivated to ally by industry factors of market share. A study by Ghauri, Lutz, and Tesfom (2003) demonstrated that SMEs are motivated to form strategic alliances to overcome challenges in entering export markets for their manufactured products. Likewise, Oehme and Bort (2015) supported the argument that firms form strategic alliances to gain knowledge resources that support market entry strategies and enable them to overcome environmental challenges that limit internationalization.

The study findings on hypothesis three indicated that SMEs adopted alliances as a strategic option to enhance their business growth to a high extent, with a mean score of 4.35 on the measurement scale. The performance variation caused by the business growth motives was recorded at 45.6 percent, while the effect of the business growth motives was established as significant. These findings concur with previous empirical studies that have established that the desire to accumulate business growth resources motivates SMEs to form strategic alliances, and that such resources affect firm performance. For example, Franco and Pereira (2013) reported that process factors that include the acquisition of innovation and technology contribute to creating differentiation and provision of new services, motivate hospitality firms to form strategic alliances, while Klijn, Reuer, Buckley, and Glaister, (2010) established that product diversification, developing new technologies and knowledge, and sharing investment costs motivate firms to engage in international joint ventures. Similarly, Olsen, Harmsen, and Friis (2008) established that firms joined strategic alliances based on their motivation to share knowledge and complement already owned resources. However, the study findings contradict those of Jeje (2014) who revealed that medium sized firms are not motivated by business growth motives to form strategic alliances.

The author measured business growth motives as acquisition of future business through the formation of strategic alliances.

The findings of this study can further be explained using the RBV perspective that postulates that an organization's specific bundle of resources can be a source of competencies and capabilities that bring about improved performance and competitive advantage. As such, the findings affirm that environmental-based motives, which this study conceptualizes as regulatory compliance motives, market growth motives, and business growth motives, define the resource requirements of manufacturing SMEs in Kenya and motivate these firms to form strategic alliances.

The performance improvement achieved by the manufacturing SMEs can be linked to the accumulation of regulatory resources, market growth resources, and business growth resources. The improvement in firm resources among manufacturing SMEs results in the creation of new capabilities that enhance the effectiveness and efficiency of performing routine activities (Kyengo, Muathe & Kinyua, 2019) and creates value by increasing customer numbers, satisfaction, and retention (Moorman, 2009), identifying new opportunities through knowledge acquisition (Talebi, Farsi & Mirisi, 2017), improving product diversification (Klijn, Reuer, Buckley & Glaister, (2010), and optimizing resource utilization through increased efficiency (Maqsoom, Charoenngam, Masood & Awais, 2013). The strategic benefits associated with environmental-based strategic alliances provide a pathway to access resources, leading to improved performance and competitive advantage (Panda, 2014; Gronum, Verreynne & Kastelle, 2012; Muange & Maru, 2015).

The resource dependency theory best explains the resource-sharing perspective which supports the argument that creating ties with other firms can guarantee the flow of critical resources that can contribute to performance improvement (Pfeffer & Salancik, 1978). However, manufacturing SMEs have been able to create beneficial ties with government departments, consultancy firms, universities, colleges, Media companies, and suppliers of goods, thus enabling them to access scarce resources. This study, therefore, argued that the effective and efficient exchange of resources among the strategic alliance partners would, to a greater extent, depend on the strategic alliance formation motives held by the partners (Remigijus & Giedrius, 2013).

The study findings support the propositions advanced by the dynamic capability theory in that the resources acquired by the manufacturing SMEs have been able to create new structures, systems, and processes to ensure compliance with regulation, market growth, and business growth. In advancing the dynamic capabilities theory, this study has demonstrated that performance improvement among manufacturing SMEs in Kenya is linked to the managerial capabilities exhibited by top managers (Teece, Pisano & Shuen, 1997). In addition, the top management's ability to make strategic

decisions geared towards developing new products, services, and processes contribute to maintaining and improving competitive advantage (Stefanovic & Dukic, 2011).

Implications
Managerial Implications

Managers from manufacturing SMEs can use the findings of this study which are important while forming strategic alliances. Manufacturing SMEs in Kenya must recognize the role played by strategic alliance formation motives and attempt to emphasize these motives. Managers must define and identify environmental-based motives based on their analysis of the prevailing internal and external environment and align such motives with the firm's resource requirements. By identifying the environmental-based motives, the appropriate strategic alliance partners will be identified locally, regionally, and internationally to provide complementary resources that the manufacturing SMEs can utilize to improve their performance and competitive advantage.

The findings of this study point to the important role played by relationship building with strategic alliance partners to facilitate the process of resource access. The study has argued that environmental-based motives should guide the manufacturing SMEs in defining the dependencies to create with other firms. It is anticipated that such dependencies will build trust, commitment, and mutual support among the strategic alliance partners and open the pathway for manufacturing SMEs to access resources.

Theoretical Implications

The stream of research on strategic alliance motives has been of interest to scholars with studies focusing on strategic alliance motives from the perspective of developed economies (Dickson & Weaver, 2011; Mukherjee, Gaur, Guar & Schmid, 2013; Skokic, 2015). This study contributes to this stream of research and makes several theoretical contributions to the existing literature in strategic alliance research. Firstly, the study conceptualized and empirically tested the relationship between environmental-based motives (regulatory, market, and business growth motives) and firm performance. This study contributes by identifying strategic alliance motives from an emerging economy perspective which complements findings from developed economies. The study also expands the contextual scope of studies undertaken in Kenya on strategic alliances by focusing on the strategic alliance motives that contribute to alliance formation among manufacturing SMEs in Kenya. This study's findings also provide evidence on the effect of strategic alliance motives on firm performance, a research area that is scarcely investigated. To this end, the study established the link between

environmental-based motives and firm performance in the context of manufacturing SMEs in Kenya. As such, the study findings bridge the gap in the literature on the effect of strategic alliance motives and firm performance (Gronum *et al*., 2012).

Secondly, the study findings align with existing literature and fit the categorization proposed by Gils and Zwart (2009). Even though the Gils and Zwart motives are generic, the motives are well suited for manufacturing SMEs as evidenced by this study. This study suggests that the applicability of the same motives is possible for future studies on strategic alliance formation in contexts similar to Kenya.

Conclusion

The study was undertaken to determine the effect of environmental-based motives on strategic alliance formation among manufacturing SMEs in Kenya and how such motives affect firm performance. This draws several conclusions based on the study findings and discussion presented in previous sections. The study findings on hypothesis one indicated that SMEs adopted alliances as a strategic option to enhance their regulatory compliance, grow their markets, and grow their business to a high extent. The authors observe that these findings indicate that top management teams in manufacturing SMEs accord high importance to the acquisition of compliance resources, market growth resources, and business growth resources. Moreover, such practice highly motivates manufacturing SMEs to form strategic alliances with other firms in Kenya. Acquiring tangible and intangible resources to match SMEs' environmental-based motives is guaranteed due to the ties and dependencies created between the manufacturing SMEs and their strategic alliance partners (Pfeffer & Salancik, 1978). The improvement in firm resources results in new capabilities that enhance the effectiveness and efficiency of performing routine activities, identification of new opportunities through knowledge acquisition, and product diversification, thus leading to enhanced performance and competitive advantage.

From a managerial perspective, SMEs must recognize the role played by strategic alliance formation motives and attempt to emphasize these motives by defining and identifying environmental-based motives based on an analysis of the prevailing internal and external environment and aligning such motives with the firm's resource requirements. Such a move will enable managers to identify and select the appropriate strategic alliance partner(s) to provide complementary resources that can improve performance.

Theoretically, the study findings align with existing literature and fit the categorization proposed by Gils and Zwart (2009). Even though the Gils and Zwart motives are generic, the motives are well suited for manufacturing SMEs as evidenced by this study. This study suggests that the applicability of

the same motives is possible for future studies on strategic alliance formation in contexts similar to Kenya.

This study had several limitations that can be associated with the reported findings. One, the study adopted a cross-sectional design to test the hypotheses, which gathered information from top managers in manufacturing SMEs at a point in time. This limited the documentation of the effect of strategic alliance formation motives on firm performance over time. Based on the limitation, further research can complement the findings of this study by adopting a longitudinal research design to contribute toward establishing the relationship between environmental-based motives and strategic alliance formation and firm performance.

Two, the study focused only on environmental-based motives and how this contributes to alliance formation and affects firm performance. Future research can extend this study by focusing on other strategic alliance formation motives and how they affect strategic alliance formation among manufacturing SMEs in emerging economies. For instance, other studies can focus on partner related motives and firm-related motives and how they contribute to alliance formation. Further research can also focus on moderating and mediating variables in the relationship between strategic alliance motives and firm performance. For example, studies can focus on the effect of the institutional environment on the relationship between strategic alliance motives and firm performance.

Lastly, the study focused on manufacturing SMEs in Kenya whose contextual attributes are different from those in other emerging economies. This limits the generalization of the study findings to other manufacturing SMEs in emerging economies. Further research can be carried out targeting other emerging economies and different sectors like banking, insurance, and tourism to ascertain whether the same conclusions can be drawn.

References:

1. Arend, R. J. (2014). Entrepreneurship and Dynamic Capabilities: How Firm Age and Size Affect the Capability Enhancement-SME Performance Relationship. Small Business Economics, 42(1), 33-57.
2. Alexander, E. A. (2012). The effects of legal, normative, and cultural-cognitive institutions on innovation in technology alliances. Management International Review. 52(6), 791-815.
3. Aun, I. I. (2014). Effects of Strategic Alliance on the Performance of Manufacturing Companies in Nigeria. *JORIND,* 12 (2), 99-111.
4. Barney, J. B. (2001). Resource-Based Theories of Competitive Advantage: A Ten-Year Retrospective on the Resource-Based view. *Journal of Management*, 27(6), 643-650.

5. Blind, K. & Mangelsdorf, A. (2016). Motives to Standardize: Empirical Evidence from Germany. *Technovation*, 48, 13-24.

6. Chenge, J., Ngui, D. & Kimuyu, P. (2014). Scoping Paper on Kenyan Manufacturing. WIDER Working Paper, Volume 2014/136, UNU-WIDER. Retrieved from: http://www.wider.unu.edu/publications/working-papers/2014/en_GB/wp2014-136/

7. Climate Innovation Centre (2020). *Kenya Industrial SME Cluster Mapping Report*, Nairobi, Kenya. Retrieved from https://www.ctc-n.org/sites/www.ctcn.org/files/documents/KenyanIndustrialSMEsClusterMappingReport_Ja2020.doc

8. Dickson, P. H. & Weaver, K. M. (2011). Institutional Readiness and Small to Medium-Sized Enterprise Alliance Formation. Journal of Small Business Management, 49(1), 126-148.

9. Dress, J. M. & Heugens, P. M. A. R. (2013). Synthesizing and Extending Resource Dependency Theory: A Meta-Analysis. *Journal of Management,* 39(6), 1666-1698.

10. Eckenhofer, E. M. (2011). Outlining the Benefits of Strategic Networking. Journal of Systems Integration, 2(4), 70-86.

11. Fasanya, D. O. Ingham, H. & Read, R. (2022). Determinants of Internationalization by Firms in Sub-Saharan Africa. *Journal of Business Research*, 144(10), 951-965.

12. Field, A. (Ed.) (2009). *Discovering Statistics using SPSS*. Sage Publications ltd.

13. Franco, M. & Pereira, C. (2013). Exploring the reasons and factors influencing the formation and development of alliances in the hospitality industry. Baltic Journal of Management, 8(4), 438-462.

14. Ferreira, A. & Franco, M. (2017). The Mediating Effect of Intellectual Capital in the Relationship between Strategic Alliances and Organizational Performance in Portuguese Technology-Based SMEs. *European Management Review*, 14(3), 303-318.

15. Gaur, A. S., Mukherjee, D., Gaur, S. S. & Schmid, F. (2011). Environmental and Firm Level Influence on Inter-Organizational Trust and SME Performance. *Journal of Management Studies*, 48(8), 1752-1781.

16. Gils, A. V. & Zwart, P. S. (2009). Alliance Motives in SMES. An Explorative Conjoint Analysis Study. *International Small Business Journal*, 27(1).

17. Ghauri, P., Lutz, C. & Tesfom, G. (2001). Using Networks to Solve Export-Marketing Problems of Small and Medium Sized Firms from Developing Countries. *European Journal of Marketing*, 37(5/6), 728-752.

18. Gronum, S., Verreynne, M. L. & Kastelle, T. (2012). The Role of Networks in Small and Medium-Sized Enterprise Innovation and Firm Performance. *Journal of Small Business Management*, 50(2), 257-282.

19. Gulati, R. (1998). Alliances and Networks. *Strategic Management Journal*. (19), 293–317.

20. Gulati, R. & Gargiulo, M. (1999). Where Do Interorganizational Networks Come From? *American Journal of Sociology*, 104(5), 1439-1493.

21. Gulati, R., Nohria, N. & Zaheer, A. (2000). Strategic Networks. *Strategic Management Journal*, 21 (3).

22. Gulati, R. & Sytch, M. Dependence Asymmetry and Joint Dependence in Interorganizational Relationships: Effects of Embeddedness on a manufacturer's Performance in Procurement Relationships. *Administrative Science Quarterly,* 52(1), 32-69.

23. Government of Kenya (2007). *Kenya Vision 2030*. Nairobi, Kenya: Government Printers.

24. Helfat, C. E., Finkelstein, S., Mitchell, W., Peteraf, M., Singh, H., Teece, D. & Winter, S. G. (2007). *Dynamic Capabilities: Understanding Strategic Change in Organizations*: John Wiley & Sons.

25. Ireland, R. D., Hoskisson, R. & Hitt, M. (2006). *Understanding Business Strategy: Concepts and Cases.* Thomson South-Western.

26. Jin, J., Zestwitz, M. & Chong, L. C. (2015). Formation of R&D Alliances in the Chinese mobile Telephony Industry. *Journal of Chinese Economic and Foreign Trade Studies*, 8(2), 70-81.

27. Kenya Association of Manufacturers (2018). Kenya Association of Manufacturers Directory.

28. Nairobi, Kenya Kenya

29. Kenya National Bureau of Statistics (2020). *Economic Survey Report 2020.*

30. Government Printers.

31. Kenya National Bureau of Statistics (2017). *Economic Survey Report.* Government Printers.

32. Khattab, S., A. (2012). Marketing Strategic Alliances: The Hotel Sector in Jordan. *International Journal of Business and Management*, 7(9), 222-232.

33. Kinderis, R. & Jucevicius, G. (2013). Strategic Alliances – Their Definition and Formation. *Latgale National Economy Research*, 1(5), 106.

34. Klein, L. L. & Pereira, B. A. D. (2016). The Survival of International Network: A Proposal Based on Resource Dependence Theory. *RAM, REV.Adm.Mackenzie*, 17(4), 153-175.

35. Kyengo, J. M., Muathe, S. M. A. & Kinyua, G. M. (2019). Empirical Analysis of the Effect of Operational Capability on Performance of Food Processing Firms in Nairobi City County, Kenya. *International Journal of Economics and Management Studies*, 6(5), 113-124.

36. Lavie, D. (2006). The Competitive Advantage of Interconnected Firms: An Extension of the Resource-Based View. *Academy of Management*, 31(3), 638-658.

37. Li, H., de Zubielqui, G. C. & O'Connor, A. (2015). Entrepreneurial Networking Capacity of Cluster Firms: A Social Network Perspective on How Shared Resources Enhance Firm Performance. *Small Business Economics*. 45(3); 523-541.

38. Lin, H. & Darnall, N. (2015). Strategic Alliance Formation and Structural Configuration. *Journal of Business Ethics*, 127(3), 549-564.

39. Lu, J. & Steinhardt, C. (2022). Alliance Building Among Environmental Non-Governmental Organizations in China: The Emergence and Evolution of the Zero Waste Alliance. *Modern China*. 48(1), 105-133.

40. Maduekwe, C. C. & Kamala, P. (2016). Performance measurement by small and medium enterprises in Cape Metropolis, South Africa. *Problems and Perspectives in Management*, 14(2), 46-55.

41. Marino, L. D., Lohrke, F. T., Hill, J. S., Weaver, K. M. & Tambunan, T. (2008). Environmental Shocks and SME Alliance Formation Intentions in an Emerging Economy: Evidence from the Asian Financial Crisis in Indonesia. *Entrepreneurship Theory and Practice*, 32(205), 157-183.

42. Mahoney, J. T. & Kor, Y. Y. (2003). Edith Penrose's (1959) Contribution to the Resource-Based View of Strategic Management. *Journal of Management Studies*, 41(1), 183-191.

43. Maqsoom, A., Charoenngam, C., Masood, R. & Awais, M. (2013). Foreign Market Entry Considerations of Emerging Economy Firms: An Example of Pakistan Contractors. Proceedings of the Fourth International Symposium on Infrastructure Engineering in Developing Countries, IEDC, *77, 222-228.*

44. McCutchen, W. & Swamidass, P. (2004). Motivations for Strategic Alliances in the Pharmaceutical/Biotech Industry: Some New Findings. *Journal of High Technology Management Research, 15(2), 197-214.*

45. Meiseberg, B. & Ehrmann, T. (2013). Tendency to Network of Small and Medium Sized Enterprises: Combining Organizational Economics and Resource-Based Perspectives. *Managerial and Decision Economics*, 34(3), 283-300.

46. Meyers, L. S., Gamst, G. C. & Guarino, A. J. (2013). *Performing Data Analysis Using IBM SPSS*. John Wiley & Sons.

47. Ministry of Industrialization and Enterprise Development (2014). Kenya Apparel and Textile Industry: Diagnosis, Strategy and Action Plan. Retrieved from: http://www.industrialization.go.ke/index.php/downloads/322-kenya-apparel-and-textile-industry-diagnosis-strategy-and-action-plan

48. Ministry of Industrialization and Enterprise Development (2015). Kenya Leather Industry: Diagnosis, Strategy and Action Plan. Retrieved from: http://www.industrialization.go.ke/index.php/downloads/324-kenya-leather-industry-diagnosis-strategy-and-action-plan

49. Mitchell, M L., & Jolley, J. M. (2012). *Research Design Explained* (8th ed.). Wadsworth Cengage Learning.

50. Muange, R. & Maru, L. C. (2015). Strategic alliances on performance of retail firms in Nairobi County, Kenya. *The TQM Journal*, 27(6),

51. Mukherjee. D., Gaur. A. S., Guar. S. S., & Schmid. F. (2013). External and Internal Influences on R&D alliance formation: Evidence from German SMEs. *Journal of Business Research*. 66(11), 2178-2185.

52. Muteshi, D. C. & Awino, A. (2018). Strategic Alliance and Performance of Food and Beverage Manufacturing Companies in Kenya. *DBA-Africa Management Review*, 8(1), 86-98.

53. Oehme, M. & Bort, S. (2015). SME Internationalization modes in the German Biotechnology Industry: The Influence of Imitation, Network Position and International Experience. *Journal of International Business Studies*, 46(6), 629-655.

54. Oliver. C. (1990). Determinants of Interorganizational Relationships: Integration and Future Directions. *Academy of Management Review*, 15(2), 241-265.

55. Olsen, J. R., Harmsen, H. & Friis, A. (2008). Product Development Alliances: Factors Influencing Formation and Success. British Food journal, 110(4/5), 430-443.

56. Panda, D. K. (2014). Managerial Network Impacts Firm Performance. Performance *Improvement Quarterly*, 27(1), 5-32.

57. Park, S., Chen, R. & Gallagher, S. (2002). Firm Resources as Moderators of the Relationship Between market Growth and

Strategic Alliances in Semiconductor Start-ps. *The Academy of Management Journal* 45(3), 527-545.

58. Parmigian, A. E., & Rivera-Santos, M. (2011). Clearing a Path Through the Forest: A Meta-Review of Internationalization Relationships. *Journal of Management,* Forthcoming.

59. Pfeffer, J. & Salancik, G. R. (2003). *The External Control of Organizations: A Resource Dependence Perspective*. Stanford University Press.

60. Rambo, C. M. (2012). Strategic Alliances and the Performance of Small and Medium Enterprises in Kenya. *DBA Africa Management Review*, 2(1), 56-76.

61. Rajasekar, J. & Fouts, P. (2009). Strategic alliances as a competitive strategy. International *Journal of Commerce and Management*, 19(2), 96-114.

62. Remigijus, K. & Giedrius, J. (2013). Strategic Alliances-Their Definition and Formation. Latgale National Economy Research, 1(10), 106-128.

63. Samsunlu, A. & Akdemir, A. (2007). The Effect of Strategic Alliances on the Development of Automotive Industry: The Case of Turkey. *Journal of Global Strategic Management*, 1(1), 124-132.

64. Schoonjans, B., Cauwenberge, P. & Bauwhede, H. V. (2013). Formal Business Networking and SME Growth. *Small Business Economics*, 41(1), 169-181.

65. Siegel, A. F. (2002). *Practical Business Statistics*. Elsevier Inc.

66. Steiner, B., Lan, K., Unterschultz, J. & Boxall, P. (2017). Applying the resource based view to alliance formation in specialized supply chains. *Journal of Strategy Management*, 10(3), 262-292.

67. Street, C. T. & Cameron, A. (2007). External Relationships and the Small Business: A Review of Small Business Alliance and Network Research. *Journal of Small Business Management, 45(2), 239-266.*

68. Skokic, V. (2015). Motivations and Benefits of Entrepreneurial Network Formation. *International Journal of Business and Management*, 10(9), 109-120.

69. Swaminathan, V. & Moorman, C. (2009). Marketing Alliances, Firm Networks and Firm Value Creation. *Journal of Marketing*, 73(5), 52-69.

70. Talebi, K., farsi, J. Y. & Miriasi, H. (2017). Identifying the Impact of strategic Alliance on the performance of SMES. Case study: The Industry of Automotive Parts manufacturers in Iran). *International Business Research,* 10(6), 227-235.

71. Teece, D. J., Pisano, G. & Shuen, A. (1977). Dynamic Capabilities and Strategic management, *Strategic Management Journal*, 18(7), 509-533.

72. Tjemkes, B., Vos, P. & Burgers, K. (2012). *Strategic Alliance Management* (2nd ed.). Routledge.

73. Trochim, W., Donnelly, J. P. & Arora, K. (2015). *Research Methods: The Essentials Knowledge Base*. Unites States: Cengage Learning.

74. United Nations Industrial Development Organization UNIDO (2008). Creating an enabling environment for private sector development in sub-Saharan Africa. Technical Paper. Retrieved from:https://www.unido.org/fileadmin/user_media/Publications/doc uments/creating_an_enabling_environment_for_private_sector_dev elopment_in_subSaharan_Africa_01.pdf

75. United Nations Industrial Development Organization (UNIDO). (2011). Building Linkages for Competitive and Responsible Entrepreneurship: Innovative partnerships to foster small enterprises promote economic growth and reduce poverty in developing countries. Published Report, Retrieved from: https://www.hks.harvard.edu/content/download/67691/1243574/ver sion/1/file/report_8EXEC_UNIDO+executive+summary.pdf

76. Viljoen, J., & Dann, S. J. (2003). *Strategic Management* (4th ed.). Prentice Hall.

77. ViffaConsult (2018). SME Performance Index 2018. Retrieved from: http://viffaconsult.co.ke/wp-content/uploads/2019/01/SME-PERFORMANCE-INDEX-2018.pdf

78. Vestrum, I. & Rasmussen, E. (2013). How Community Ventures Mobilise Resources: Developing Resource Dependence and Embeddedness. *International Journal of Entrepreneurial & Research,* 19(3), 283-302.

79. Warner, R. M. (2013). *Applied Statistics: From Bivariant through Multivariate Techniques* (2nd ed.). Thousand Oaks. Sage Publications Inc.

80. Wagner, M. & Zidorn, W. (2017). Effects of Extent and Diversity of Alliancing on Innovation; The Moderating Role of Firm Newness. *Small Business Economics*. 49(3), 1-18.

81. Walker, J. T. & Maddan, S. (Eds.). (2013). *Statistics in Criminology and Criminal Justice*. Jones & Bartlett Learning, LLC.

82. Wilden, R., Gudergan, S. P., Nielsen, B. & Lings, I. (2013). Dynamic Capabilities and Performance: Strategy, Structure and Environment. *Long Range Planning*, 46(1-2), 72-96.

83. Wu, C. & Hsu, Z. (2013). International Strategy Alliance: Macro-Institutional Environment Perspective. *The Journal of Global Business Management*, 9(1), 35-43.

84. Yasud, T. (2005). Firm Growth, Size, Age, and Behaviour in Japanese Manufacturing. *Small Business Economics*, 24(1), 1-15.

85. Zhang & Yin (2012). The Relationship between Function and Motivation of R&D Alliances. An Empirical Analysis of Chinese Software Firms. Proceedings of the 2012 International Conference on Solid State Devices and Materials Science, 25, 1162-1167.

86. Zikri, R. (2020). Effects of Strategic Alliances on the Growth of Market Share of Commercial Banks Malaysia. *Journal of strategic Management*, 4(4), 55-70.

Microfinance Institutions as a Vehicle for Poverty Eradication in Developing Countries: Evidence from the East African Community Member States

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Abstract

This paper focuses on examining the link that exists between microfinance institutions (MFIs) and poverty eradication efforts in developing countries, specifically focusing on the East African member states of Burundi, Democratic Republic of Congo (DRC), Kenya, Rwanda, South Sudan, Tanzania, and Uganda. The study was driven by the varying interpretations, debates, and opposing opinions in literature on the effects of MFIs on poverty eradication in developing economies, particularly in the East African Community (EAC). The study used a depth literature search using secondary data on the role of MFIs in poverty eradication in the EAC context. The results pointed out that despite the challenges such as high transaction rates, limited funding and others, microfinance credit has played a significant role in poverty eradication among poor/low-income families in the EAC Member States. Therefore, the study recommends that governments of the EAC Member States should increase government support, and conducive working environments should be provided to ensure microfinance institutions reach as

many less privileged individuals as possible so as to raise their economic status.

1.   Introduction

The traditional understanding of microfinance originated in Bangladesh in the early 1970s through the Grameen bank model of Dr. Muhammad Yunus (Bangladesh Bureau of Statistics (BBS), 2014; Mutoko & Mutoko, 2020). Dr. Yunus' model involved supporting informal rural small businesses with microloans to fight high poverty rates. The success of this model, especially in repayment of said loans by these poor rural folk, led to many international organisations adopting microfinance as a poverty eradication policy. This success also led to the awarding of the 2006 Nobel Peace Prize jointly to Dr. Muhammad Yunus and the Grameen bank (The Nobel Peace Prize, 2006).

This generally accepted model, copied since then around the world, is premised on providing small loans to the rural poor to start or support an economic activity undertaken by the said beneficiaries. Repayments are pegged on meeting the operational expenses incurred by the lending institution and not on profit making. The belief here is that this method will help the rural poor to gradually move from their poor backgrounds to having a sustained income through entrepreneurship.

However, the success of the global movement to replicate Dr. Yunus' model has also encountered some limitations (Moreno, 2010; Shamit, 2016). The authors observed that the growth of MFIs over the years into commercialised institutions has thus effectively killed Dr. Yunus' dream of poverty eradication in the 20th century. Also, the authors have used microfinance information available in the public domain to review microfinance in Africa and more specifically in the EAC region. The commercialisation of MFIs on the continent and in the EAC has led to a more focused approach on a relatively wealthy small number of individuals over the large number of poor individuals who would be most suited to this method.

Still, there remains a gap to help elevate the microfinance industry in the EAC to the great potential it can achieve, while also tackling the trade-off between outreach and sustainability. In addition, there is a legislative gap in some cases, thus limiting the incentives for MFIs to enact suitable strategies, measures, and introduction of financial products and services aimed at boosting the financial inclusion of the poor. This study therefore traces the influence of microfinance as a poverty eradication vehicle in developing countries with a focus on the EAC Members States of Burundi, Democratic

Republic of Congo (DRC), Kenya, Rwanda, South Sudan, Tanzania, and Uganda.

Furthermore, Thorsten (2015) described microfinance as an effort to provide financial services to individuals and small businesses that are not eligible for standard commercial banking services. These beneficiaries generally have low-incomes, and they are self-employed or employed in the informal sector. They usually lack documented ownership titles of their assets and have inadequate legal identity documents. Many previous studies have empirically investigated the strong connection between poverty eradication and microfinance. Most conclude that microfinance has the capacity to reduce poverty in developing countries such as the EAC.

This was highlighted particularly after the declaration of the UN International Year of Microcredit (2005) that helped shine a spotlight on enhancing financial inclusion in the banking sector while also focusing on the importance of microfinance to micro entrepreneurs and microenterprises globally as well as the awarding of the 2006 Nobel Peace Prize jointly to Dr. Muhammad Yunus and the Grameen bank (Armendariz & Morduch, 2005; Bakhtiari, 2011; Gibbons & Meehan, 2002; Imai, Arun & Annim, 2010; Johnson & Rogaly, 1997; Kimmitt & Munoz, 2017; Mutoko & Mutoko, 2020; Niaz & Khan, 2021; Norfarah, Siti-Nabiha & Kamalia, 2019; Yusuf, Saidu & Ahmed, 2015). Several studies have shown a favourable connection between poverty alleviation and microfinance, as well as where loans are given to women entrepreneurs (Al-Shami et al., 2017; Khandker, 2005; Pitt & Khandker, 1998; Ukanwa, Xiong & Anderson, 2018; Ul-Hameed, Mohammad & Kadir, 2018).

The East African Community (EAC) is a socio-political and economic organisation composed of 7 countries; Burundi, the Democratic Republic of the Congo (DRC), Kenya, Rwanda, South Sudan, the United Republic of Tanzania, and Uganda. The original bloc was founded in 1967, initially as a group of only 3 countries (Kenya, Tanzania and Uganda). It collapsed in 1977 before it was revived again in 2000. Geographically, the bloc stretches from the Indian Ocean in the East (Kenya and Tanzania) to the Atlantic Ocean in the West (DRC). It has an estimated combined population of 281,050,447 ("East African Community," n.d.), the 4th largest population in the world, which is considered as a single entity.

The ultimate objective of the EAC regional integration is to establish a unitary political federation. This is the 4th step after the customs union, common market, and monetary union. There is incomplete proof connecting EAC integration and poverty, though figures show the increased trade has led to decreased fiscal and multidimensional poverty for Rwanda, Tanzania, and Uganda (Gasiorek et al., 2016). Small and Medium-sized Enterprises (SMEs) within the EAC mainly operate within the informal sectors with women as key

implementors ("East African Business Council", n.d.). SMEs are key pillars of the EAC economy in innovation, socio-economic progress, and social integration. They provide more than 60% of employment, constitute about 90% of traders, and share about 29% of the EAC Gross Domestic Product (GDP). They have also meaningfully enabled women empowerment, poverty alleviation, and distribution of incomes (ITC, 2014).

The EAC regional integration agenda, in line with the African Continental Free Trade Area (AFCTA), looks at establishing a barrier free market for local goods and traders so as to eliminate border barriers within these regional/continental blocs. With these lofty ambitions, SMEs and small-scale micro enterprises will be the biggest beneficiaries of such policies. Another objective of this study was to look at the current operating policy environment of MFIs in the EAC and if they are prepared to operate in the planned common markets, and whether they will be impactful to deliver envisioned poverty reduction goals or if they will be stifled by competition and collapse.

The EAC comprises 3rd world countries with majority of the citizens, just like in Africa, being considered poor. In addition, instability (political and civil) has been and remains part of the bloc. All but Kenya and Tanzania have been affected by civil strife and/or war in one form or another. Even in 2022, the DRC and South Sudan still have conflicts within their borders, and Burundi is still emerging from global sanctions, political strife, and isolationism. The bloc has also suffered from the effects of the global COVID-19 pandemic which has resulted in a near closure of the economies of the countries. All of these add to the levels of poverty with governments in the bloc unable to fully provide (socio-economically) for the poor citizens.

With the vast majority of citizens in the EAC, being small scale farmers and traders, microfinance provides a realistic and attainable approach to poverty eradication in the bloc. However, there have been other studies that have cast doubt on this notion of microfinance as a vehicle for poverty eradication. Profiteering by financial institutions on the whole reduces the efficacy of microfinance in reducing poverty (Chowdhury, 2009; Shahriar, Schwarz & Newman, 2016).

Also, while microfinance offers financial security if well utilised, it is critical that the beneficiaries of credit facilities have essential commercial knowledge and skills for them to fully use the microloans received from MFIs to expand existing microenterprises and generate jobs. Furthermore, MFIs are unable to bring long-term development and poverty eradication by themselves as they are one of many players and factors in the sector. In addition, issues such as errors in statistical analysis have been shown to reduce the overall positive impact of MFIs on families' livelihoods (Copestake & Williams, 2011).

While the link between microfinance and its impact on poverty eradication remains contested, the authors will endeavour to bring a fresh new outlook on the influence of microfinance approaches on poverty eradication. The section below provides some analysis about applicable literature on microfinance, particularly how it can serve as an instrument for poverty eradication in developing countries. The methodology used is found in Section 3. The findings and discussions are in Section 4 and concluding observations and recommendations are in the closing section.

2. Literature Review

This section examines current literature that touches on the importance of microfinance and MFIs and their effect on poverty eradication in developing economies. The authors endeavoured to present an outlook of MFIs globally in Africa, particularly in the EAC, and their correlation to poverty eradication. This study is guided by the poverty lending approach (Kumari, 2020) which stresses the use of microfinance as an instrument for poverty alleviation through provision of capital to the poor. Input from governments, donors, NGOs, and similar agencies is critical towards keeping interest rates low (Machingambi, 2020). This approach borrows from the Grameen Bank model that focuses on microcredit to poor micro entrepreneurs while facilitating flexible repayment approaches with reduced focus on MFIs' sustainability and profitability.

Therefore, this study focuses on the following 3 key components of Microfinance and MFIs.

2.1. Importance of Microfinance and MFIs

Microfinance is generally accepted as an important vehicle for poverty eradication which leads to advances in the socio-economic welfare of poor people (Bel et al., 2015). It enables many people to expand their household incomes and meet their expenses while helping them to navigate economic hardships (Bel et al., 2015). Microfinance programmes generally raise incomes and market expansion through providing credit among other services to young entrepreneurs (Kimando et al., 2012; Mawa, 2018; Nathan et al., 2004).

Microfinance has been recognised to have a positive impact on poverty eradication at macro level and thus plays a big role in socioeconomic development and poverty eradication in Sub-Saharan African countries (Bel et al., 2015). Generally, MFIs have a crucial effect on borrowers' revenues, particularly in urban areas with the average income of MFI clients being more than that of new clients or non-clients (Samer et al., 2015). There is conclusive evidence of the impact of MFI on poverty eradication (Hulme & Mosley, 1998; Khandker, 2005; Tedeschi, 2010).

The growth of technology, especially mobile money transactions in the EAC, has led to its high adoption as a business tool by both MFIs in disbursement and collection and by micro entrepreneurs in the course of conducting business. Matlala et al. (2014) highlights the high adoption of technology among entrepreneurs which further acts as a tool to reduce operating costs while increasing revenues as well as for connectivity and customer service.

In addition to the above outlook, the authors acknowledge the impact of MFIs in allowing the poor to gain access to capital in some capacity. This access to financial capital has the potential for poverty eradication in Africa and the EAC. This capital connection to the poor allowed the authors to examine some important characteristics of microfinance in developing nations, and the impact of using Dr. Yunus' microfinance approaches which include group lending, short repayment periods, and small loans among others.

2.2.   Challenges of Microfinance and MFIs

Some of the challenges that MFIs encounter include lack of product diversification, late or delayed loan repayments, high interest rates, high transaction costs, poor outreach, lack of access to microfinance facilities for urban poor/low-income families, insufficient funding, demand and supply gaps in supporting microcredit and micro savings, lack of documentary evidence of credit-worthiness, and repayment tracking problems (Nasir, 2013; Das et al., 2011; Muithya et al., 2021). Some of these challenges can be overcome by ensuring more MFI products and services diversification, ensuring reasonable interest rates on microloans, more involvement of angel investors, use of high integrity as a consideration for clients, group lending, inclusion of all of the poor regardless of location and new innovations such as use of reasonable mobile phone loans among others.

MFIs have for the most part morphed into "baby" commercial banks, with many of the formal banking approaches that Dr. Yunus' idea of microfinance frowned upon. This commercialisation of MFIs has led to these institutions, in some cases, actually becoming an impediment to sustainable socio-economic growth. This in turn negates efforts to eradicate poverty for the poor in Africa and the EAC region.

The authors have also looked at some of the criteria followed by MFIs in providing microcredit with the knowledge that microfinance access has a crucial impact on poverty eradication. This was confirmed by small sample surveys conducted on 4 MFIs. The surveys discovered that the financial institutions impacted income and asset levels positively. Furthermore, it was discovered that more successful borrowers have voluntary savings deposits (Das et al., 2011). As such, challenges of MFIs can be overcome by financial inclusion of as many low-income families seeking these facilities as possible.

2.3. Microfinance and MFIs' Impact on Gender, Rural, and Low-Income Households

There is a lot of literary analysis on women empowerment and microfinance and the resultant effects (Abdulmalik et al., 2018; Bogale, 2018; Garikipati, 2012; Hashemi et al., 1996; Pitt et al., 2006; Rahman et al., 2009; Steele et al., 2001). Further review looks at the impacts of microfinance on Africa's rural households. It suggested that MFI services stimulate income generation, activate opportunities, increase revenue, boost empowerment opportunities, and improve the welfare of the poor (Alam & Azad, 2021). At the same time, poverty reduction goes hand in hand with sustainability (Akhter & Zaman, 2015). Therefore, reducing poverty is moot if it is not accompanied by efforts that maintain financial sustainability of the beneficiaries.

This study further looked at other impacts of microfinance such as effects on health, nutrition, education, built resources, and home consumption levels (Bel et al., 2015; Samer et al., 2015). The results of one study show that beneficiaries' welfare and estimated income were positively impacted by microcredit loans' housing index. There was also a reduction in family sizes. The conclusions include that access to microcredit helped recipients to exploit available business opportunities through start-ups or planning and growing existing businesses (Anthony & Isaac, 2012).

Microfinance offers a wide range of fiscal products and amenities such as microcredit, money transfers, savings accounts, and insurance to low-income/poor families. Its primary objective was to reach poor and unbanked members of the society, particularly the poor, women, youth, rural folks, illiterate among others. This objective hinged on the premise that access to microcredit services by these neglected groups would lead to starting up or expanding of microenterprises. This would further help them break the generational cycle of poverty. When well implemented, this form of microfinance intervention has made long lasting socio-economic improvements in the lives of the above-mentioned groups (Alam & Azad, 2021; Kimando et al., 2012).

Consequently, the effects of microfinance on poor/low-income household revenues and consumption in developing countries were shown to ultimately lead to poverty eradication. The results show a positive impact of microfinance services on beneficiaries' welfare (Mawa, 2018). However, the continued use of traditional banking techniques by commercial banks, especially in rural areas (Akhter & Zaman, 2015), has led to the growth of informal financial credit sources such as moneylenders, pawn shops, friends/family, revolving loan associations, etc. (Ntiedo, 2016). They are generally unregulated and commonly charge very high interest rates akin to exploitation of borrowers.

3.   Research Methodology

Creswell (2009) observes that research consists of how the researcher collects, analyses, and interprets the data in the study. The current study used desktop review of existing secondary data where the researchers extensively reviewed literature on microfinance and poverty eradication in developing countries with reference to EAC Member States. Melissa (2013) observes that secondary analysis is a systematic method with procedural and evaluative steps, which is flexible and can be utilized in several ways.

The authors collected data primarily from peer reviewed journal articles and research journals. They also reviewed private and public sector reports, online trade magazines and newspapers, officially published country and EAC public (government) portals/databases/repositories/websites, books, published and unpublished technical papers, official blogs, and other related sources.

The main reason for using this research method is due to the readily available large and reliable data. Thus, collating it further helped the study come up with informed conclusion. The available data also helped the authors to identify the research work that has already been done, thus avoiding replication while also providing knowledge on methodologies and approaches used. It is also less time consuming and inexpensive in nature. As a result, authors can reliably come up with conclusions and identify limitations and areas of future research.

4.   Findings and Discussion

The often-quoted markers of microcredit program success, such as high loan repayment rates, are only one part of a theoretical coin with financial, social, and human capital relevant for the positive management of microenterprises forming the other part (Buckley, 1997; Hameed, Mohammad & Shahar, 2020). From this, Buckley (1997) went further to state that there was minute proof to show that microfinance could impact the growth of microenterprises and micro entrepreneurs into larger well managed entities with more income streams, profits or high employment levels. This conclusion was from an analysis of 3 African countries; Ghana, Kenya, and Malawi.

This study has found out that MFIs in general have played a big role towards poverty eradication in developing countries, especially in East African Community Member States. Although there are similarities in some member states, differences were shown to occur in other cases.

4.1.   Influence of Importance of Microfinance and MFIs
4.1.1. Microcredit Borrowers' Status

The authors found that the majority of lenders of microfinance institutions were from poor backgrounds. The Uganda National Household Survey (UNHS, 2016/2017) data shows that a majority of those benefiting

from microfinances were in the informal sectors in Uganda. These included credit and cooperative societies, microcredit schemes, relatives, friends, and unregulated money lenders among others. The borrowers from poor backgrounds are able to acquire finances at reasonable interest rates that are injected into various small businesses to improve their economic status.

The Burundi financial inclusion survey (2012) noted that in the bankable adult populace, just 3.7% had access to a bank account, over 23% use standard/informal non-banking establishments, while 73.3% were entirely left out of the banking system. The snapshot of just 26.7% of the 90% of the populace residing in semi-urban and rural areas having access to a financial system shows how difficult it is for the most-needy to access microcredit facilities offered by MFIs.

The status of the borrowers is also affected by the number of MFIs in the jurisdiction (Nakabugo et al., 2022). This is uneven across the EAC countries. Kenya and Uganda have a more robust microfinance space as compared to other members, while Rwanda leads in numbers vis a vis penetration. Other countries have limited statistical data on numbers involved.

4.1.2. Credit-Worthiness Requirements for Microloans

From the findings of the study, it was discovered that borrowers acquiring loans from MFIs are required to provide very lenient security as compared to other formal lending financial institutions. These securities are a reducible minimum which the poor borrowers can meet, while the formal lending systems tend to utilise a collateral-based approach that makes them inaccessible to poor/low-income households who do not have the required collateral.

There are other innovative approaches such as that of Urwego Opportunity Microfinance Bank (UOMB), a Rwandan based microfinance, that provides credit using mainly group lending. This means members are accountable for both the repayment of their own loans and also for other group members' loans in case of a non-payment. This approach allows for poor/low-income families to access loans without the provision of collateral.

It is also worth noting that in some cases, land constitutes a vital form of collateral that formal sector financial institutions as well as some MFIs accept as compared to only guarantors or shares that one holds in a particular microfinance institution in order to acquire credit (UNHS, 2016/2017). This can be difficult for the very poor as many do not have land or the official land title documentation that are required as security. Bazira (2020) contends that in Burundi, insufficiency of guarantees is one of the reasons products and services offered by traditional financial institutions are inaccessible to a significant part of the population.

4.2.   Influence of the Challenges of Microfinance and MFIs
4.2.1.   Rural/ Urban Location of Microfinance Institutions

The commercialisation of MFIs means there has been a gradual shift of location to urban areas as compared to the rural areas. This makes it hard for the poor clients who may be willing to acquire credit to uplift the economic status. The proportion of urban people with access to microcredit from MFIs is at a higher rate compared to that of rural people (UNHS, 2016/2017). This implies that microfinance institutions favoured the urban sectors in their provision of services.

4.2.2. Commercialisation of MFIs

There continues to be an enhanced focus on profitability and sustainability within MFIs and their operating principles. This is usually as a result of financial growth or change in the business model of the microcredit institution (D'Espallier et al., 2017). It is also as a result of credit officers' incentives (Beisland, D'Espallier & Mersland, 2019) with commissions on loans disbursed, thereby favouring larger loans to reliable (less risky) clients. The debate on MFI sustainability and profitability versus focus on the poor remains contentious and challenging since there are many variables involved.

4.3.   Influence of Microfinance and MFIs' Impact on Gender, Rural, and Low-Income Households
4.3.1.   Access to Credit by Gender

It was discovered that most finance institutions target mainly women. This concentration on women was a result of the belief that women required a semblance of affirmative action as a result of their previous neglect due to traditional and socio-economic policies. More women acquiring credit means more households will be uplifted, hence resulting to the eradication of poverty. This was confirmed by a Uganda ministry of finance planning and economic development study undertaken on microfinance outreach in 2004.

This focus on women is also as a result of their well-known high repayment interest rates which has remained a recognised factor since the start of the solidarity microfinance movement by Dr. Yunus Mohammad. Women form a large part of small-scale while microenterprises form a majority of members of SHGs and other group lending programs in most rural areas. This is why they are the majority beneficiaries of MFI credit.

4.3.2.   Structure of the Loans

The authors found out that MFIs are friendly in structuring their loans according to the needs and demands of their clients from various economic backgrounds. These microloans are usually structured based on customer demands, the capacity of the institution in question, and the risk management

policies. The repayment plans for microloans usually involve instalments linked to the borrower's revenue streams such as their incomes and expenditures. These structures make sure that all clients who want credit/loans are covered and no one is left out.

4.3.3. Client Related Barriers

There were various barriers that hindered poor clients accessing microfinance institutions. The study conducted on Urwego Opportunity Microfinance Bank (UOMB) in Rwanda indicates that there is a poor saving culture for the poor/low-income people in Rwanda. They fear getting microloans to start new or expand existing businesses. As a result, they end up excluding themselves from microfinance services. More wealthy individuals usually exclude poor/low-income families from microfinance services. However, these same persons also exclude themselves (Fischer & Sriram, 2002). There is also the barrier of poor transportation costs as many of the poor/low-income households reside in rural parts of the country, which requires high transport costs to access them.

Weiss, Montgomery, and Kurmanalieva (2003) contend that financial services offered by microfinance in developing countries often serve people with low incomes who would otherwise be turned down by standard banking institutions. These days, microfinance has developed into a vital investment opportunity in 3rd world countries in regions such as South America, Asia, and Africa. This is the reason why global organisations such as the United Nations (UN), the International Monetary Fund (IMF), the World Bank, and continental bodies such as the European Union (EU), the American Development Bank, the African Development Bank (ADB), and the Asian Development Bank among other financial organisations, globally and continentally, continue to provide microfinance funding and research programs.

Conclusion

As noted in the findings, MFIs play a huge part in poverty eradication among poor/low-income families in the East African Community Member States despite their setback. The authors hope that this paper will be an addition to the various studies previously undertaken that seek to shed more light on the healthy varying interpretations, debates, and opposing opinions in literature on the effects of MFIs on poverty eradication in developing economies, in this case, with a particular focus on the EAC. The authors believe MFIs have led to a net positive impact in poverty eradication. Nevertheless, it has also had some few challenges in reaching the core poor people in the community.

In addition, the current operating policy environment of MFIs in the EAC region is still localised to country jurisdictions and affected MFIs are currently ill prepared to operate in the planned common markets, be it regional or continental. At current operating levels, there is a high likelihood of MFIs negatively impacting the delivery of the envisioned poverty reduction goals. Concerned government agencies and the management of said institutions need to actively prepare for the advent of the envisioned common markets. If this is not done, these MFIs will quickly wilt in the face of regional/continental competition and collapse.

Recommendations

The study established that MFIs play a huge part in poverty eradication among poor/low-income families and therefore enhances financial inclusion in the EAC Member States. The study urges MFIs to introduce more diverse categories of microloans that attract different interest rates so as to reach more low-income people. It also urges restraint of the focus on profitability (commercialisation) of MFIs since it negatively affects this noble goal of poverty eradication. This will eventually reduce the net positive effects of MFIs on poverty eradication. Moreover, Governments in the EAC Member States should increase support and provide favourable policies and working environments to ensure MFIs reach as many low-income individuals as possible. This will help to raise their economic status and that of the country as well.

Limitation and Future Research

The study used a qualitative method by reviewing existing secondary data on MFIs in Africa. As argued, "no scientific social research can be conducted purely by following only one method" (Hossain, 2001, p.22). Hence, future research should incorporate quantitative methods and primary data for validation of this study.

References:

1. Abdulmalik, U., Mata, K.A.B., Ibrahim, M. & Usman, A. (2018). The Effect of Microfinance Services on Poverty Reduction among Women in Katsina Metropolis. International Journal of Commerce and Management. 6(2):1427-1438.
2. Abera, N. & Asfaw, M. (2019). Impact of Microfinance on Rural Household Poverty in Ethiopia. Journal of Ecology & Natural Resources, 3(5).
3. Akhter, S. T. & Zaman, H. N. (2015). Self Condemnation, Indebtedness and, Financial Stress: Findings of a Cross-sectional

Study in Pakistan. European Scientific Journal, ESJ, 11(10). Retrieved from https://eujournal.org/index.php/esj/article/view/6680

4. Alam, P. & Azad, I. (2021). Impact of Microfinance on Income and Employment of Women in Jigjig Ethiopia. International Journal of Economics and Business Administration, IX (1), 373–381. https://doi.org/10.35808/ijeba/679

5. Al-mamun, Abdullah, Mohammad, Nurul, Huda, Mazumder & Malarvizhi, C. A. (2014). Measuring the effect of amanah ikhtiar Malaysia's microcredit programme on economic vulnerability among hard-core poor households. Progress in Development Studies, 1, 49–59.

6. Al-Shami, S.S.A., Majid, I., Mohamad, M.R. & Rashid, N. (2017). Household welfare and women empowerment through microcredit financing: evidence from Malaysia microcredit. Journal of Human Behaviour in the Social Environment 27(8),894–910.https://doi.org/10.1080/10911359.2017.1345341.

7. Armendáriz, B. & Morduch, J. (2005). The Economics of MicroFinance. Cambridge, Massachusetts: The MIT Press. 2005. ISBN: 0-262-01216-2, 352 pages.

8. Anthony, A. & Isaac, O. (2012). Impact of Microfinance on Poverty Alleviation in Ondo State, Nigeria. Australian Journal of Business and Management Research, 2(99), 31-37. https://ajbmr.com/articlepdf/aus-29- 12i9n2a4.pdf

9. Bakhtiari, S. (2011). Microfinance And Poverty Reduction: Some International Evidence.International Business & Economics Research Journal (IBER), 5(12)

10. Bazira, B. A. (2020). Financial Inclusion in Burundi: The Use of Microfinance Services in Semi-Urban Areas. Journal of Economic Development, 45(3), 101-116.

11. Beisland, L. A., D'Espallier, B. & Mersland, R. (2019). The Commercialization of the Microfinance Industry: Is There a 'Personal Mission Drift' Among Credit Officers? J Bus Ethics 158, 119–134. https://doi.org/10.1007/s10551-017-3710-4.

12. Bel, K., Miled, H. & Rejeb, J.-E.B., (2015). Microfinance and Poverty Reduction: A Review and Synthesis of Empirical Evidence. Procedia - Social and Behavioural Sciences, 195, 705–712. https://doi.org/10.1016/J.SBSPRO.2015.06.339

13. Bogale, B. B. (2018).The Impact of Microfinance on Poverty Reduction and Women Empowerment. RAIS Collective Volume of Economic Science 03, Research Association for Interdisciplinary Studies. https://ideas.repec.org/p/smo/rpaper/03.html

14. Buckley, G. (1997). Microfinance in Africa: Is it either the problem or the solution? World Development, 25(7), 1081-1093.

15. Chowdhury, A. (2009). Microfinance as a Poverty Reduction Tool – A Critical Assessment. United Nations, Department of Economic and Social Affairs (DESA) Working Paper (89).

16. Copestake, J. & Williams, R. (2011). What is the Impact of Microfinance and What Does this Imply for Microfinance Policy and for Future Impact Studies? Oxford Policy Management, Oxford. https://www.opml.co.uk/sites/opml/files/impact study.pdf.

17. Creswell, J. W. (2009). Research design: Qualitative, quantitative, and mixed methods approaches (3rd Ed.). Thousand Oaks, CA: Sage

18. Das, S. G., Srinivasan, R. K. & Kodamarty, M. (2010). Strategies to Counter Microfinance Delivery Challenges. Available at SSRN 2116876.

19. D'Espallier, B., Goedecke, J., Hudon, M. & Mersland, R. (2017). From NGOs to banks: Does institutional transformation alter the business model of microfinance institutions? World Development, 89, 19–33.

20. East African Community. (n.d.). https://en.wikipedia.org/wiki/East_African_Community

21. East African Business Council (EABC). (n.d.). https://eabc-online.com/sectoral-desks/

22. Fisher, T. & Sriram, M. S. (2002). Beyond Micro-credit: Putting Development Back into Microfinance, Vistaar Publications, New Dehli, Oxfam, Oxford, UK, New Economics foundation, London.

23. Garikipati, S. (2012). Microcredit and Women's Empowerment: Through the Lens of Time-Use Data from Rural India.Development and Change, 43, 719-750.

24. Gasiorek, M., Byiers, B. & Rollo, J. (2016). Regional integration, poverty and the East African Community: What do we know and what have we learnt? (Discussion Paper 202). Maastricht: ECDPM.

25. Gibbons. D. & Meehan, J. W. (2002). Financing microfinance for poverty reduction. Draft paper commissioned by the Microcredit Summit Campaign. Malaysia: CASHPOR Financial and Technical Services.

26. Hameed, W. U., Mohammad, H. B. & Shahar, H. B. K. (2020). Determinants of micro-enterprise success through microfinance institutions: A capital mix and previous work experience. International Journal of Business and Society, 21(2), 803-823.

27. Hashemi, S., Schuler, S. R. & Riley, A. (1996). Rural credit programs and women's empowerment in Bangladesh. World Development, 24, 635-653.

28. Hossain, F. (2001). Administration of Development Initiatives by Non-Governmental Organisations. A study of their sustainability in Bangladesh and Nepal. Academic Dissertation, University of Tampere.
29. Hulme, D. (2000). Is Micro debt good for poor people? A note on the dark side of microfinance. Small Enterprise Development 11(1), 26-27
30. Imai, K. S., Arun, T. & Annim, S. K. (2010). Microfinance and Household Poverty Reduction: New Evidence from India. World Development, vol. 38, no. 12, pp.
31. Jalil, M. F. (2021). Microfinance towards micro-enterprises development in rural Malaysia through digital finance. Discov Sustain 2, 55. https://doi.org/10.1007/s43621-021-00066-3
32. Johnson, S. & Rogaly, B. (1997). Microfinance and poverty reduction. Oxfam and Action Aid, London. ISBN: 0855983698, 134 pages.
33. Kessy, S.A. & Urio, F. (2006). The Contribution of Microfinance Institutions to Poverty Reduction in Tanzania. Research Report No.06.3-REPOA. Dar es Salaam: MKUKI na Nyota Publishers.
34. Khandker, S. R. (2005). Microfinance and Poverty: Evidence Using Panel Data from Bangladesh. The World Bank Economic Review19(2):263–286. https://doi.org/10.1093/wber/lhi008
35. Kimando, L. N., Sakwa, M., Grace, M. & Njogu, W. (2012). Impact of Business Development Services on Enterprises in Rural Kenya: A Case Study of Micro and Small Enterprises in Muranga Town. International Journal of Business and Commerce, 1(9),149-165 www.ijbcnet.com
36. Kimmitt, J. & Munoz, P. (2017). Entrepreneurship and financial inclusion through the lens of instrumental freedoms. International Small Business Journal, 35(7), 803-828.
37. Kumari, P. (2020). Theoretical Analysis of Microfinance on Poverty Alleviation. Journal of Economic Info, 7(3), 221-236. https://doi.org/10.31580/jei.v7i3.1709
38. Machingambi, J. (2020). The Impact of Microfinance on the Sustainability of 'Poor' Clients: A Conceptual Review. Journal of Entrepreneurial innovations 1(1), 50-50
39. Matlala, R., Shambare, R. & Lebambo, M. (2014). How South African Spaza Shop Owners Utilise Mobile Communication Technologies to Run their Businesses. European Scientific Journal, ESJ, 10(25). https://doi.org/10.19044/esj.2014.v10n25p%p
40. Mawa, B. (2018a). Impact of Microfinance : Towards Achieving Poverty Alleviation ?January.
41. Mawa, B. (2018b). Impact of Microfinance : Towards Achieving Poverty Alleviation ?February.

42. Melissa, P. J. (2013). Qualitative and Quantitative Methods in Libraries (QQML). Secondary Data Analysis: A Method of which the Time Has Come, School of Library and Information Studies, University of Alabama, Tuscaloosa, AL, USA. 3:619 –626

43. Moreno, A. (2010). Grameen Microfinance: An Evaluation of the Successes and Limitations of the Grameen Bank. Honors Theses (PPE). Paper 17.

44. Muithya, V. M., Muathe, S. M. A. & Kinyua, G. (2021). Too Much of a Good Thing? Strategic Innovation Orientation, Customer Satisfaction and Performance of Licensed Microfinance Institutions in Kenya.International Journal of Economics, Commerce and Management.9 (6), 287-303

45. Mutoko, W. R. & Mutoko, P. (2020). Towards Implementing the Grameen Bank Financing Model Among Micro Enterprises in Botswana: Is it a Possibility? European Scientific Journal, ESJ, 16(4), 29. https://doi.org/10.19044/esj.2020.v16n4p31

46. Nakabugo, M. J., Muathe, S. & Mwasiaji, E. (2022). Microfinance Services and Government Regulations: Reflections on Performance of Small Holder Coffee Entrepreneurs in Uganda. The Journal of Entrepreneurial Finance 24 (1), 1-24

47. Nathan, O., Banga, M. & Ashie, M. (2004). Microfinance and Poverty Reduction In Uganda: Achievements And Challenges. Economic Policy Research Centre, (Research series No. 41).

48. Nasir, S. (2013). Microfinance in India: Contemporary issues and challenges. Middle-east journal of scientific research, 15(2), 191-199.

49. Nawai, N. & Shariff, M. N. M. (2013). Loan repayment problems in microfinance programs that use an individual lending approach: A qualitative analysis. Journal of Transformative Entrepreneurship, 1(2), 93-99.

50. n.d. (n.d.). The Nobel Peace Prize 2006. NobelPrize.org. https://www.nobelprize.org/prizes/peace/2006/summary/

51. Niaz, M. & Khan, A. (2021). Financial Inclusion through Microfinance and Entrepreneurial Development. City University Research Journal 11(4)

52. Norfarah, N. & Siti-Nabiha, A. K. & Kamalia, Z. (2019). Microfinancing Influence on Micro-Entrepreneurs Business Growth: Mediating Role of Psychological and Social Capital. Journal of Entrepreneurship, Business and Economics,7(2), 130-161.

53. Ntiedo, B. E. (2016). Informal Capital Markets and Integrated Rural Development in Nigeria. European Scientific Journal, ESJ, 12(22), 305. https://doi.org/10.19044/esj.2016.v12n22p305

54. Okurut, F. N., Banga, M. & Mukungu, A. (2004). "Gender and Microfinance"; A Study Undertaken for the Microfinance Outreach Plan (MOP), Ministry of Fiancé Planning and Economic Development, Kampala April. Uganda National Household Survey (UNHS, 1999/2000).

55. Pitt, M. M. & Khandker, S. R. (1998). The Impact of Group-Based Credit Programs on Poor Households in Bangladesh: Does the Gender of Participants Matter? Journal of Political Economy 106(5):958–96.

56. Pitt, M., Khandker, S. & Cartwright, J. (2006). Empowering Women with Microfinance: Evidence from Bangladesh. Economic Development and Cultural Change, 54(4):791-831.

57. Rahman, S., Junankar, P. N. & Mallik, G. (2009). Factors influencing women's empowerment on microcredit borrowers: A case study in Bangladesh. Journal of the Asia Pacific Economy, 14(3), 287–303.

58. Samer, S., Majid, I., Rizal, S., Muhamad, M. R. & Rashid, N. (2015). Science Direct the Impact of Microfinance on Poverty Reduction: Empirical Evidence from Malaysian Perspective. Procedia-Social and Behavioural Sciences, 195(2015), 721–728.

59. Sanyal, P. (2009). From credit to collective action: The role of microfinance in promoting women's social capital and normative influence. American Sociological Review, 74(4), 529-550.

60. Shahriar, A. Z. M., Schwarz, S. & Newman, A. (2016). Profit orientation of microfinance institutions and the provision of financial capital to business start-ups. International Small Business Journal, 34(4), 532-552.

61. Shamit, M. (2016). "Rethinking Microcredit in Bangladesh: Does Grameen Bank Serve the Neoliberal Agenda?" Inquiries Journal, 8(09). http://www.inquiriesjournal.com/a?id=1451

62. Steele, F., Amin, S. & Naved, R. T. (2001). Savings/credit group formation and change in contraception. Demography, 38 (2): 267-282.

63. Thorsten, B. (2015). Microfinance: A Critical Literature Survey. IEG working paper, 2015/No.4; Washington, DC: Independent Evaluation Group. © Independent Evaluation Group, World Bank Group. https://openknowledge.worldbank.org/handle/10986/23546 License: CC BY 3.0 IGO.

64. Uganda Bureau of Statistics (UBOS) (2021). Uganda National Household Survey (UNHS, 2016/2017).

65. Ukanwa, I., Xiong, L. & Anderson, A. (2018). Experiencing microfinance: Effects on poor women entrepreneurs' livelihood strategies. Journal of Small Business and Enterprise Development, 25(3), 428-446.

66. Ul-Hameed, W., Mohammad, H. & Kadir, S. H. (2018). Microfinance institute's non-financial services and women-empowerment: the role of vulnerability. Management Science Letters 8(1103–1116). https://doi.org/10.5267/j.msl.2018.7.001.

67. Weiss, J., Montgomery, H. & Kurmanalieva, E. (2003). Micro Finance and Poverty Reduction in Asia: What is the Evidence? SSRN Electronic Journal. 10.2139/ssrn.1396983.

68. Yusuf, M. M., Saidu, B. M. & Ahmed, B. A. (2015). An Analysis of Employment Potentials of Cottage, Micro and Small Scale Enterprises in Jigawa State of Nigeria. European Scientific Journal, ESJ, 11(19). Retrieved from https://eujournal.org/index.php/esj/article/view/5943

Relationship between Financial Inclusion and Monetary Policy on Economic Growth: Evidence from Panel Data Draw from a Sample of Developing Countries

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Abstract

Financial inclusion augments the ability to acquire economic resources and ensure the livelihood of individuals in different economic systems. Rising the accessibility of financial infrastructure stimulates the economic power of human beings. The study analyses the relationship between financial inclusion, and monetary policy on the economic growth of Developing Countries using panel data from 2010 to 2020. The panel unit root tests indicated that real gross domestic product, exchange rate, and interest rate are stationary at the level. In contrast, Automated Teller Machines, Bank branches, inflation rate, and money supply are stationary at the first difference. The Generalized Method of Moment (GMM) results shows that bank branches have a positive but statistically significant effect on real gross domestic product in the selected developing countries. The automated Teller Machine has a positive but statistically insignificant effect on real gross domestic product in the selected developing countries. The interest rate has a negative but statistically significant effect on real gross domestic product in the selected developing countries. The inflation rate negatively but statistically significant effect on real gross domestic product in the selected developing countries. Money supply has a negative but statistically significant effect on real gross domestic product in the selected developing countries. The exchange rate negatively and statistically insignificant effect on real gross domestic product

in the selected developing countries. The study concluded that both financial inclusion and monetary policy have a positive and significant effect on economic growth in developing countries for the period under study. The study recommends that Government should ensure that commercial banks perform a perfect banking system and ensure that customer satisfaction is met in terms of providing varieties of ATMs, opening new branches, etc by so doing economic growth could be achieved in developing countries. In taking austerity measures on the economy the central authority should not employ only monetary policy but rather a combination of fiscal policy in order to stabilize the economy and achieve higher economic growth in developing economies.

Keywords: Financial inclusion, Monetary policy, Economic growth, developing countries, Generalized Method of Moment (GMM)

1. Introduction

Financial inclusion has become a global challenge for developing economies, but also a mere topic for developed economies. Financial inclusion augments the ability to acquire economic resources and ensure the livelihood of individuals in different economic systems. Rising the accessibility of financial infrastructure stimulates the economic power of human beings. There are millions of people who are not included in the formal financial (FF) sector as a result of insufficient earnings and facilities in developing regions. Financial exclusion results in minimized funds available for investment, which results in low capital accumulation. Thus, financial inclusion helps to solve this issue through greater economic expansion (Thathsarani, Wei, & Samaraweera, 2021).

In developing economies of Africa and Asia, most people are not using the goods and services supplied by financial institutions or they do not have any bank accounts even. There are certain factors that result in financial exclusion which include low income, financial illiteracy, lack of proper documentation, distant financial institution, and complex financial goods and services (Oji, 2015). According to Global Findex Database (2014), about 2 billion young people do not have a bank account in any bank; they are not using banking services especially in developing economies. There are many other reasons for not having an account which includes lack of money, geographical reasons, strict conditions of banks, etc. Due to financial exclusion poverty goes up and economic growth decline in developing countries.

A financial system has the ability to serve all members of a community, especially women and the poor, can provide educational and investment opportunities for every household; it can assist people to receive bank loans,

have insurance coverage for various types of risks, and facilitate and secure payments (Avais, 2014; Mader, 2018). Well-functioning financial systems promote the establishment of new enterprises and the growth of existing companies (Demirguc-Kunt & Levine, 2008), good sound economic empowerment, and active participation in the financial system of youth, women, and other vulnerable groups previously marginalized (Siddik, 2017). Furthermore, about 515 million adults acquired a financial account over three years whereas 1.2 billion people opened an account with a formal financial institution or provider of mobile financial services between 2010 and 2017. By any metric, this is a remarkable improvement, but so much remains to be done. By 2017, 1.7 billion people aged 16 and above had zero access to an account, which is about 31per cent of the world's adult population (Demirguc-Kunt et al, 2018). Moreover, the report showed that every one out of two people in the world did not have access to a formal savings account, insurance, loan, and other financial services. The report also showed that less than a quarter of adults possessed an account, in a formal financial institution and most of them used informal methods to save, and their borrowings were mainly for family, friends, and other traditional techniques (Demirguc-Kunt et al., 2018). According to Deep Knowledge Analytics & Future Fintech (2019), the figure of adults excluded from financial services in many economies is greater than the adult population living below the poverty line of $2 per day. A study on financial inclusion in terms of ownership and use of accounts showed that financial exclusion among individuals resulted from a high minimum balance to maintain a bank account, non-close proximity to financial institutions, lack of legal rights, and not environmentally sustainable (Allen, Demirguc-Kunt, Klapper, & Martinez Peria, 2016).

Based on the literature reviewed the current study identified that most of the studies on financial inclusion, monetary policy, and economic growth were conducted in Sub-Saharan Africa (Ajide, 2017), High, middle and low-income countries (Chu, 2019), middle-income countries (Elsayed et, al, 2019), Asian countries (Lei et, al 2019), Central and West Africa countries (Soumaré et, al 2016) and West Africa countries (Akudugu, 2013). Therefore, the current study specifically examined the relationship between financial inclusion and monetary policy on economic growth in developing countries. Based on the availability of data, 23 developing countries are taken over the period 2010 to 2020 in the study. Difference GMM was used to estimate the impact of financial inclusion and monetary policy on economic growth. The main objective of the paper is to investigate the relationship between financial inclusion and monetary policy on the economic growth of Developing Countries. The other segment of the paper is designed as follows: literature review which is the second part of the study, methodology which discussed the technique of analysis employed in the study and is the third part of the

paper, part four of the paper is the presentation and analysis of the empirical findings and the final section concludes the paper.

1.2.   Components of Financial Inclusions

To measure the index, we take the importance of the largest demand-side harmonized dataset at the individual level, the World Bank's Global Findex (2011 and 2014). It offers a homogeneous measure of indicators for individuals' use of financial products across economies. This survey gather information about 150,000 nationally representative and randomly selected adults from 140 countries in 2011 and 137 in 2014, across the world. Data available at the individual, rather than household, the level is also an advantage that increases the accuracy and comparability of the analyses. This database fills an important gap in the financial inclusion data landscape. We also use supply-side aggregate data on access from the International Monetary Fund's Financial Access Survey (2015). This is a source of supply-side data that offers information on an unbalanced panel of 189 countries, covering the period 2004-2015.
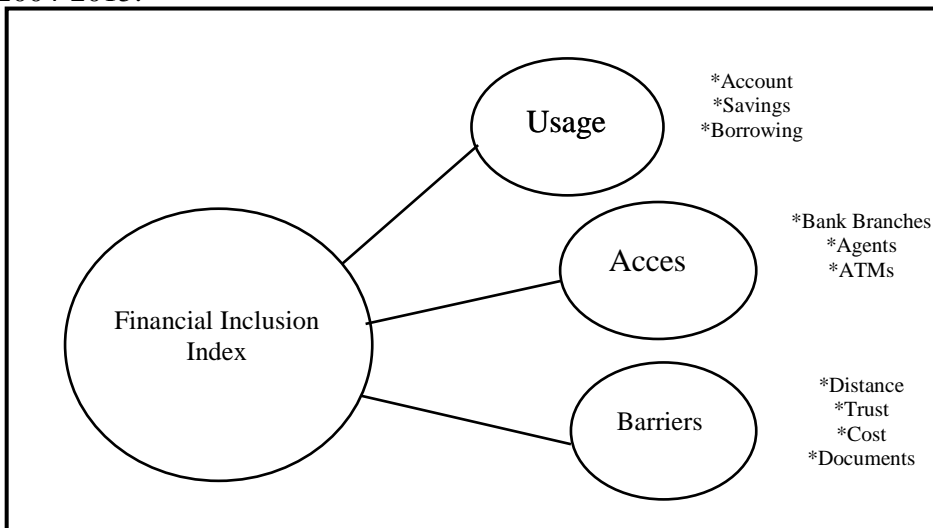
Figure 2.1 Components of Financial Inclusions

i.   Usage: **-**To assess the extent of usage of the formal financial services by individuals, we try to proxy the utility derived of using such services by considering the use of different products: holding at least one active financial product that allows making and receiving payments and storage money, having a savings account and having a loan in a formal financial institution. Taking advantage of the information in the Global Findex data set, we can calculate the usage direction of formal financial services. We built the indicator to account for people using at least one formal financial service that allows making and receiving

payments and storage of money by adding information from several questions in the Global Findex. We consider formal financial service users for this indicator as the percentage of respondents who report having an account (by themselves or together with someone else) at a bank or another type of financial institution. Account at a financial institution such as respondents who report having an account at a bank or at another type of financial institution, like a credit union, microfinance institution, cooperative, or the post office (if applicable), or having a debit card in their own name. It includes an additional 2.77 percent and 2.04, for 2014 and 2011 respectively, of respondents who report not having any of the previous products but receiving wages, government transfers, or payments for agricultural products into an account at a financial institution in the past 12 months; pay utility bills or school fees from an account at a financial institution in the past 12 months, or receive wages or government transfers into a card in the past 12 months. Often, these individuals are not aware that they have a bank account.

ii. Barriers: -The barriers to financial inclusion, perceived by unbanked individuals, provide information about the bottlenecks that prevent them from using formal financial services. This information gives an additional angle to examine the extent of financial inclusion since it provides the number of financially excluded individuals and the reasons perceived by these individuals for being excluded from the formal financial system. There are two types of financial exclusion: voluntary or self-exclusion and involuntary. If we treat financial inclusion as a behavioral issue, individuals need to decide whether to participate in the formal financial system given their budget constraints and utility function. One possibility is that some individuals do not have a demand for formal financial services, leading them to self-exclusion because of cultural reasons, lack of money or just because they are not aware of the benefits of these types of services. This choice can be shaped by imperfect information about the utility of financial services for managing risk, savings for the future, and affordability of different investments such as education or buying a house. However, exclusion can also be due to other market imperfections such as the lack of access to financial services or an inappropriate product range that does not satisfy people's needs. The latter bottlenecks that hinder financial inclusion may be associated with the category of involuntary exclusion so that people cannot satisfy their demands.

In order to calculate the magnitude of inclusiveness of financial systems, from the unbanked perspective, we take into account only the information about barriers that represent involuntary exclusion such as

distance, lack of the necessary documentation, affordability, and lack of trust in the formal financial system. The question about perceived barriers is formulated in the Global Findex questionnaire in such a way that individuals can choose multiple reasons for not having a bank account.

According to the Global Findex data set, about 20 percent and 16, for 2011 and 2014 respectively, of the unbanked population cites distance as one of the reasons that hinder them from having an account. This reason occurs more frequently in developing countries where access points are remote. Documentation requirements are also cited as a perceived barrier to financial inclusion by almost 20 percent of the unbanked in 2011 and 19 percent in 2014. Affordability is the second most, in addition, we consider as banked those individuals who reported not having a bank account because someone else in the family already has one. They are contemplated as indirect users of formal financial services.

   iii.   Accessibility: **-** Access to formal financial services represents the possibility for individuals to use them. However, greater access does not necessarily imply a higher level of financial inclusion. There is a threshold for access since, when it reaches a certain level, a marginal increase does not necessarily generate a financial inclusion increase. It may enhance frequency in the use of financial services, by increasing the intensive margin of usage but does not necessarily improve extensive margin, in terms of higher percentages of accounts held or any other financial service. However, greater access is expected to foster financial inclusion when access levels are below the threshold, through greater availability, if financial services meet the needs of the population. Also, when increasing access is generated from different financial companies, more intense competition may increase the consumption of financial services through prices too, even above the threshold.

Banking agents, also known as banking correspondents, are non-financial commercial establishments that offer basic financial services under the name of a financial services provider, facilitating access points to the formal financial system. The establishments are shared across diverse sectors (grocery shops, gas stations, postal services, pharmacies, etc.), as long as they are brick-and-mortar stores whose core business involves managing cash. In its most basic form, banking correspondents carry out only transactional operations (cash in, cash out) and payments but, in many cases, they have evolved as a distribution channel for the banks 'credit, saving, and insurance products.

These three indicators account for the physical points of services offered by the institutions belonging to the formal financial system such as

commercial banks, credit unions, saving and credit cooperatives, deposit-taking microfinance, and other deposit takers (savings and loan associations, building societies, rural banks, and agricultural banks, post office agro-allied institutions, post office savings banks, savings banks, and money market funds). Information on ATMs and bank branches is collected by financial services providers through the International Monetary Fund's Financial Access Survey (FAS).

Access itself is not enough. Even if FinTech is able to provide access to about 2 billion people that are excluded from formal financial services, it wouldn't make big difference if those people are not using the services. According to the Asia foundation's publication last year, in developing countries, around 10 percent of adults with formal accounts are neither making deposits nor withdrawals in a typical month compared to 2 percent in developed economies.

Thus, access is important but more importantly, is the usage that can be enhanced through financial education. It could indeed be challenging for people to use the services when they are complex. The main target in boosting financial service usage is financial education and more importantly educating the young population who in the future will be able to make sustainable financial choices, which will have a positive impact on the people and the society at large.

1.3.   Financial Inclusion and Monetary Policy theory

There is no existing economic theory, according to the author's knowledge, that links financial inclusion or financial deepening to monetary policy or, specifically, to inflation. On the theoretical side, however, most of the work on monetary policy is focused on a context that assumes that a representative household exists. Although some households are able to hold assets and smooth consumption over time, others are unable to hold assets and thus are unable to respond to changes in interest rates. It is common knowledge that informal labor and credit market information is essential for understanding the transmission mechanism of monetary policy and the conduct of an efficient monetary policy. These sentiments are accepted by numerous authors: because financial inclusion enhances the resilience of aggregate demand to the interest rate, it has been argued that it is useful for monetary policy performance (Mbutor and Uba, 2013). Immature financial markets tend to weaken monetary policy's effectiveness, and financial inclusion makes monetary policy more effective by removing the need for the informal sector, which tends to interfere with monetary policy's effects, at least as long as the monetary policy only uses regulated financial institutions.

For monetary policy, the presence of high levels of financial exclusion suggests the following, Firstly, most agents (households) and even informal

firms do not look at interest rates as a guide, nor do they respond to them but interest rates are an important monetary policy instrument. Second, the broad informal sector uses informal finance and non-banking currencies. Thirdly, the rates and how they are set are informal markets for which the central bank is unaware and cannot account for them. Fourthly, the signaling of the monetary policy of developing countries' apex banks can enter only a small segment of the economy which is not capable of organizing the entire market. Increased financial inclusion would also mean less cash outside the banking system that could be improved; the transmission mechanism, the speed and money multipliers that are subject to fluctuations that complicate monetary policy analysis, the volatile and unpredictable demand for money, and the volatile relationship between the intermediate target (broad money) and the operational target (reserve money) under the monetary target (reserve money) under a money targeting framework, which is what most developing countries are using.

2.   Empirical Literatures

Elsherif (2019) examined the relationship between financial inclusion and monetary policy transmission in Egypt for the period 2000 to 2017 using time series data. The study employed a vector error correction model (VECM) and include commercial bank branches, ATMs, domestic credit, account ownership, and depositors with the commercial bank as variables in the analysis. The result shows that financial inclusion and monetary policy of a long-run relationship. The reaction of policy effectiveness to the positive financial inclusion shock is statistically significant.

Ebenezer, Joshua, Kofi, and Agyapomaa (2019) investigated the dynamic and bi-causal link between monetary policy and financial inclusion in sub-Saharan Africa using panel data. Variables used in the study include MPR, ATM, CBB, CBA, Browers from commercial banks, depositors from commercial banks, inflation exchange rate, and GDP and employed Panel VAR. The findings suggest that a bi-causal relationship exists between monetary policy and financial inclusion. Specifically, it is evident that monetary policy affects financial inclusion, and financial inclusion is also influenced by monetary policy. The policy implication of this study is that the effectiveness of monetary policy depends on financial inclusion. Hence, the efforts of governments in sub-Saharan African countries should aim at policies that enhance financial inclusion for the effective implementation of monetary policy.

Usman and Adigun (2019) assessed the relationship between financial inclusion and money supply in Nigeria from 1981 to 2016. Total loans of rural banks, a total deposit of rural banks, the number of Automated Teller Machines (ATM) per 100,000 adults, and the total number of commercial

bank branches are the variables included in the model. The study employed the Multiple Regression and Error Correction Model and the result revealed important positive relationships between currency supply and total loan of rural banks (t=4.651, p=0.001), total credit to individuals(t=4.427, p=0.0001), number of bank branches (t=1.734, p=0.094) and the number of ATMs per 100,000 adults(t=3.605, p=0.0012). Suggested that the Central Bank of Nigeria (CBN) should implement financial policies that will generate a positive investment climate through market-based interest rates that will inspire investments and absolutely impact the money supply and hence lead to rising in the financial inclusion level.

Anthony-Orji, Orji, Ogbuabor, and Onoh, (2019) investigated the impact of monetary policy shocks on financial inclusion in Nigeria using the Vector Autoregression Model (VAR). Financial inclusion, interest rate, money supply, and deposit rates of bank deposits are the variables in the model. Findings of the study reveal that shocks to minimum rediscount rate, interest rate, broad money supply, and deposit rates of deposit banks all have a significant impact on financial inclusion in Nigeria. The study recommends that there is a need to adopt effective monetary policy measures that will increase financial inclusion in the country.

Ebenezer (2018) examined the relationship between financial inclusion, monetary policy, financial sector development, and financial regulation in Sub-Saharan Africa using Panel data. The study employed Panel VAR and includes MPR, financial inclusion, real exchange rate, GDP, and inflation as variables in the model. The findings indicate that there is a reverse causality between financial sector development and financial inclusion in both the Sub-Sahara Africa countries sample and the full sample. Financial inclusion is a driver of financial sector development and vice versa.

Brownbridge, Bwire, Rubatsimbira, and Grace (2017) investigated the strength of the impulse response of inflation to the monetary policy variable using the consumer price index (CPI), nominal exchange rate, and nominal gross domestic product (GDP) and the policy interest rate as variables in the analysis. The study employed panel vector error correction (PVEC) methodology and panel vector auto-regressions (PVARs). The results show that countries with higher levels of financial inclusion depict stronger impulse responses, although this does not necessarily mean that higher levels of financial inclusion are the cause of stronger monetary transmission mechanisms as the degree of financial inclusion may be associated with other aspects of development which also affect the monetary transmission mechanism.

Harley, Adegoke, and Adegbola (2017) examined the empirical study on the role of financial inclusion in economic growth and poverty reduction in a developing economy using panel data analysis ranges from 2006 to 2015 using

a log-linear model specification framework. The results show that the records of active ATMs, bank branches and government expenditures selected from three African countries were the most robust predictors of financial inclusion on poverty reduction in a developing economy. The result shows that a one percent increase in the ratio of active ATMs will lead to about a 0.0082 per cent increase in the gross domestic product and a reduction of poverty in developing economies. According to them, an indicator shows that most of the ATMs in developing economies are outdated and thus required a technological upgrade to have a significant impact in rural areas. The coefficient of determination was very high as it showed that about 92 per cent of the total variations in the real growth rate of the gross domestic product are explained by all the independent variables in the model. Consequently, the researchers recommended that Government should focus on poverty reduction through a focus on infrastructural development that will enhance banking services.

Okoye, Erin and Modebe (2017), in their study, investigated the outcome of financial inclusion on economic growth and development in Nigeria over the period 1986 to 2015 using the Ordinary Least Squares technique. They measured financial inclusion in the study using a loan to deposit ratio, financial deepening indicators, loans to rural areas, and branch networks. Measures of financial deepening adopted in the study are ratios of private sector credit to GDP and broad money supply to GDP. Economic growth was proxied as growth in GDP over successive periods while per capita income was adopted as a measure of poverty, hence an index of development. The study showed that credit delivery to the private sector has not significantly supported economic growth in Nigeria and that financial inclusion has promoted poverty alleviation in Nigeria through rural credit delivery. The paper recommended that the monetary authorities should deepen financial inclusion efforts through enhanced credit delivery to the private sector as well as strengthen the regulatory framework to ensure efficient and effective resource allocation and utilization.

Evans (2016) investigated financial inclusion and monetary policy effectiveness in Africa, Monetary policy effectiveness, financial inclusion, money supply, and interest rate are the variables included in the model. The Panel VECM approach was adopted in the analysis and the result shows that financial inclusion and monetary policy effectiveness in a long-run relationship. On the other hand, the positive interest rate has a positive and statistically significant permanent effect on the level of monetary policy effectiveness.

Nandru, Byram, and Rentala (2016) examined the impact of ownership of a bank account and use of banking services as determinants of financial inclusion using cross-sectional data and used Ownership of account, income level, age, gender, employment status, and educational level as variables in the

model. The study employed the logit model and found that income level and education have a significant impact on financial inclusion as measured by the ownership of a bank account.

Lenka and Bairwa, (2016) investigated the impact of financial inclusion on the monetary policy of South Asian Association for Regional Cooperation (SAARC) countries from 2004 –2013. The study employed inflation rate, commercial bank branch, ATMs, Outstanding loans from commercial banks (% of GDP), outstanding deposits with commercial banks (% of GDP), commercial bank lending IR, and Foreign Exchange rate as variables and adopted FEM, REM, and Panel-corrected standard errors. The result of the study indicates that financial inclusion, exchange rate, and interest rate are negatively associated with inflation in SAARC countries.

Hung (2015) analyzed the relationship between financial inclusion and monetary policy in Vietnam from 2004 to 2015 using time series data, variables included in the model are; Inflation rate, financial inclusion index, commercial bank branch, ATMs, interest rate, and exchange rate. The study employed a vector error correction model (VECM) and found an increase in the financial inclusion index would lower inflation, which is used as a proxy for the effectiveness of the monetary policy. In addition, the lending interest rate of banks is in negative relation to the inflation in Vietnam.

Mbutor and Uba (2013) examined the impact of financial inclusion on monetary policy in Nigeria using time series data and including banks' lending rates, loans and advances of commercial banks, rural branch deposits and loans, exchange rates, and several bank branches. The study adopted the Ordinary least square model (OLS). The result of the study supports the notion that growing financial inclusion would improve the effectiveness of the monetary policy.

3.   Methodology
3.1.   Model Specification

The dynamic model was an important model for the research on financial inclusion because countries are heterogeneous in their targeted monetary policies. Additionally, besides, the dynamic model is advantageous because most financial inclusion and monetary policy research had issues with endogeneity, and several explanatory variables may be correlated with the unobservable country-specific effects. Therefore, the present study employed a specified dynamic panel model and applied the two-step system generalized method of moment (GMM) estimation technique. GMM improved efficiency, specifically when the dependent variable was persistent (Arrelano and Bover, 1995).

$$GDP = \ ATM + \ CBB + MS + \ EXRATE + INF + INT + U_{it} \quad ....(3.1)$$

Where:
GDP = Gross Domestic Product
ATM = Automated Teller Machine per 100,000 adults
CBB = Bank Branch per 100,000 adults
EXRATE = Exchange rate
INF = Inflation Rate
INT = Interest rate
MS = Money supply
This Model is adopted from the work of Gretta (2017), Elsharif (2019), Evans (2016) and Mbutor &Uba (2013) with little Modifications

3.2.   Generalize method of moment (GMM)

The difference GMM started by estimating the model in differences and included lagged values of the explained and the explanatory variables as internal instruments. First, the model specification started with a specification on level equation such as

$$Y_{it} = \lambda Y_{it-1} + \gamma X_{it} + \eta_{it} + \mu_{it}, \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots (3.2)$$

Where Y (explained variable) is a function of its past values. The models added explanatory variables X which are assumed to be weakly exogenous and firm-fixed effects. Second, after transforming model 7 into the first difference, it becomes:

$$\Delta Y_{it} = \lambda \Delta Y_{it-1} + \gamma \Delta X_{it} + \Delta \mu_{it}, \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots \dots (3.3)$$

The transformation in model 7 into the first difference eliminated the firm-specific effects (η_i). However, there was a new endogeneity problem as a result of the correlation between the lagged explained variable (Y_{it-1}) and the different error term μ_{it}, as well as the possibility that some independent variables were endogenous. As such, these problems were solved via higher-order lags of the explained variable such as Y_{it-2} as instruments for Y_{it-1} and higher-order lags for the explanatory variables such as X_{it-2} as instruments (Arellano and Bond, 1991). Additionally, the difference GMM estimators provided consistent and unbiased estimators when this moment conditions were sustained and were valid.

4.   Empirical Results and Discussion
4.1.   Descriptive statistics

Table 4.1 Descriptive statistics

Statistics	RGDP	ATM	BB	EXRATE	INF	INT	MS
Mean	11.48542	42.78506	11.63781	100.0076	5.751479	8.106063	70.80946
Median	11.49771	28.61229	10.41000	55.06000	4.900000	4.902500	66.20537
Std. Dev.	0.551690	35.45064	5.106473	115.5296	4.273271	7.930438	33.64109
Skewness	0.527789	0.863422	0.483056	0.725886	0.609119	0.982633	0.559499
Kurtosis	3.222985	2.554154	2.343337	5.473502	7.998533	6.475035	2.370498
Jarque-Bera	8.196273	22.39791	9.608923	126.9819	248.8693	195.7527	11.60770
Probability	0.356127	0.291314	0.938193	0.421786	0.423217	0.858632	0.643016
Observations	170	170	170	170	170	170	170

Source: researcher computation using E-views 10.

Table 4.1 indicates the result of descriptive statistics of the study, it indicates that the standard deviations of the variables employed are far away from their means except for money supply (33.64109). The Skewness of the distribution in the table shows positive values for all the variables under study such as gross domestic product, Automated Teller Machines, bank branches, exchange rate, inflation rate, interest rate, and money supply. This indicates that these variables are skewed to the right and are normally distributed. The Kurtosis in the table shows that real gross domestic product Automated Teller Machines, bank branches, and money supply are normally distributed while exchange rate, inflation rate, and interest rate are not normally distributed because their Kurtosis values are greater than 3.

The Jarque-Bera test for normality is also estimated. It indicates that all the variables employed are normally distributed because their p-values are greater than 5 %.

4.2.   Panel unit root test
4.2.1.   Levin Lin and Chu, Breitung, and Im Pesaran and Shin unit root test

Table 4.2 Levin Lin and Chu, Breitung, and Im Pesaran and Shin unit root test

Variables	Test at Level			Test at first difference		
	LLC PV	Breitung PV	IPS PV	LLC PV	Breitung PV	IPS PV
RGDP	0.0000*	0.1532	0.0256*	-	0.0210*	-
ATM	1.0000	0.3829	0.6794	0.0000**	0.0032**	0.0313**
BB	1.0000	0.6860	0.5767	0.0000	0.0335	0.0404
EXRATE	0.0000*	0.0000*	0.0005*	-	-	-
INF	0.0846	0.9669	0.9381	0.0031**	0.0091*	0.0221*
INT	0.0000	0.0035	0.0003	-	-	-
MS	0.0006	1.0000	0.5918	0.0000**	0.0000**	0.0166**

Source: Researcher computation using E-views 10.
*The asterisks *, ** indicate rejection of the null hypothesis at 10% and 5% levels respectively.*

Table 4.2 indicates the panel unit root test of Levin Lin and the Chu (LLC), Breitung, and I'm Pesaran and Shin (IPS) unit root test, the tests show that real gross domestic product is stationary at a level under LLC and IPS tests while in Breitung test is stationary at first difference. Furthermore, from table 4.2 the result shows that Automated Teller Machines, Bank branches, inflation rate, and money supply are stationary at first difference i.e. they are I(1) process. In contrast, exchange rate and interest rate are stationary at level i.e. they are I(0) processes. Therefore, based on the Levin Lin and Chu, Breitung, and I'm Pesaran and Shin unit root test there is a mixture of the order of integration of the variables under study.

4.3.   Panel Cointegration

Table 4.3 Kao panel Cointegration Test

ADF t-statistic	Probability
-0.426438	0.3349*

Source: *Researcher computation using E-views 10.*

Table 4.3 presents the result of the Kao residual panel cointegration test. The result confirmed the absence of cointegration amongst the variables in the model as the ADF t-statistics probability value is significant at 1%. Therefore, we cannot reject the null hypothesis and concludes that no long-run relationship exists, because the p-value is greater than 5.

4.4.   Generalized Method of Moment (GMM)

Table 4.4 Generalized Method of Moment (GMM)

Variables	Coefficient	Standard Error	T-statistics	P-Value
LGDP(-1)	0.367426	0.087044	4.221148	0.0000
BB	0.006845	0.006635	1.031606	0.0001
ATM	0.000834	0.000549	1.520773	0.0753
INT	-0.000577	0.002069	-0.278780	0.0000
INFL	-0.006214	0.001608	-3.863470	0.0000
LMS	-0.063585	0.016922	-3.757524	0.0000
EXRATE	0.000192	0.000363	0.528215	0.0737
Arellano-Bond Serial correlation test				
AR(1)				0.4580
AR(2)				0.6250
J-statistic				1.326017
Prob(J-statistic)				0.506148

Source: *Researcher computation using E-views 10.*

Table 4.4 indicates the Generalized Method of Moment (GMM) result of the estimated model in the study, the result shows that the dependent variable (real gross domestic product) at lag 1 has a positive and statistically significant, which means that the dependent variable depends largely on itself. Bank branches indicate positive but statistically significant effects on the real gross domestic product in the selected developing countries, this implies that an increase in bank branches by a single digit will result in an increase in the real gross domestic product in the selected developing countries. This is concurring with the finding of Harley et al (2017). Automated Teller Machine indicates positive but statistically insignificant effects on the real gross domestic product in the selected developing countries, meaning that an increase in Automated Teller Machine will bring about an increase in the real gross domestic product in the selected developing countries. This conforms to the economic apriori expectation which establishes the positive relationship between Automated Teller Machine and real gross domestic product in developing countries. The positive finding is similar to the finding of Harley et al (2017). Interest rate indicates negative but statistically significant effects on the real gross domestic product in the selected developing countries, this means that an increase in interest rate will result in a decrease in the real gross domestic product in developing countries. The inflation rate indicates negative but statistically significant effects on the real gross domestic product in the selected developing countries, by implication an increase in the inflation rate in developing countries will result in a decrease in their real gross domestic product. Money supply indicates negative but statistically significant effects on the real gross domestic product in the selected developing countries, this means that an increase in money supply in developing countries will result in a decrease in their real gross domestic product. The exchange rate shows positive but statistically insignificant effects on the real gross domestic product in the selected developing countries, this implies that an N1 increase in the exchange rate will bring about an increase in the real gross domestic product in the selected developing countries. This concurred with the economic apriori expectation which assumed the positive relationship between exchange rate and real gross domestic product.

The Arrelano and Bond serial correlation test shows that both AR (1) and AR (2) p-values are greater than 5%, this means that we cannot reject the null hypothesis and conclude that model has no serial correlation problem. In another word, the model is free from serial correlation problems. Furthermore, the J-statistic in the table which tests the over-identification restriction in the model is close to zero and its corresponding p-value is far from zero, this indicates the good fitness of the model.

Conclusion and Recommendations

The study examines the relationship between Financial Inclusion and monetary policy on Economic growth: Evidence from Panel Data Draw from a Sample of Developing Countries from 2010 to 2020 and employed the following variables; real gross domestic product, bank branches, Automated Teller Machines, exchange rate, inflation rate, interest rate, and money supply. The panel unit root tests show that real gross domestic product, exchange rate and interest rate are stationary at level i.e they are I(0) process. Automated Teller Machines, Bank branches, inflation rate, and money supply are stationary at first difference i.e they are I(1) process. The Generalized Method of Moment (GMM) results show that bank branches have a positive but statistically significant effect on real gross domestic product in the selected developing countries. The automated Teller Machine has a positive but statistically insignificant effect on real gross domestic product in the selected developing countries. The interest rate has a negative but statistically significant effect on real gross domestic product in the selected developing countries. The inflation rate has a negatively but statistically significant effect on real gross domestic product in the selected developing countries. Money supply has a negative but statistically significant effect on real gross domestic product in the selected developing countries. The exchange rate has a negatively and statistically insignificant effect on real gross domestic product in the selected developing countries. Based on this the study concluded that financial inclusion has a positive and significant effect on economic growth in developing countries for the period under study while monetary policy has a negative effect on economic growth in developing countries for the period under study. The study recommends that Government should ensure that commercial banks perform a perfect banking system and ensure that customer satisfaction is met in terms of providing varieties of ATMs, opening new branches, etc by so doing economic growth could be achieved in developing countries. In taking austerity measures on the economy the central authority should not employ only monetary policy but rather a combination of fiscal policy in order to stabilize the economy and achieve higher economic growth in developing economies.

References:

1. Ajide, K. B. (2017) Determinants of Financial Inclusion in Sub-Saharan Africa Countries: Does Institutional Infrastructure Matter? CBN Journal of Applied Statistics 8(2), 69-89.
2. Akudugu, M. A. (2013) Determinants of Financial Inclusion in Western Africa: Insights from
3. Allen, F., Demirguc-Kunt, A., Klapper, L.F., & Martinez, P.M.S. (2016). The Foundations of Financial Inclusion: Understanding

Ownership and Use of Formal Accounts. World Bank Policy research working paper, 6290 http://documents.worldbank.org/curated/en/348241468329061640

4. Anthony-Orji, O. I., Orji, A., Ogbuabor, J. E. & Onoh, J. E. (2019) Financial Inclusion and Monetary Policy Shocks Nexus in Nigeria: A New Empirical Evidence. Journal of Academic Research in Economics, 11(2), 364 – 388.

5. Arellano, M., & Bover, O. (1995). Another Look at the Instrumental Variable association with Human Development: A Cross Country Analysis. IIMB

6. Avais, M. (2014).Financial innovation and poverty reduction.International Journal of Scientific and Research Publications, 4(1), 2250–3153.

7. Brownbridge, M., Bwire, T., Rubatsimbira, D. & Grace A. T. (2017) The Impact of Financial Inclusion on the Interest Rate Channel of the Monetary Policy Transmission Mechanism.Working Paper No. 05.

8. Chu, l. K. (2019) Determinants of financial inclusions: comparing high, middle, and low-income Countries. Economic Bulletin, Vol. 39, issue 2, PP.1449-1457. Ghana. Research Journal of Finance and Accounting, 4(8), 1-9.

9. Demirguc-Kunt, A., & Levine, R. (2008).Finance and economic opportunity.The World Bank.

10. Demirguc-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2018). The Global Findex Database 2017: Measuring Financial Inclusion and the Fintech Revolution. The World Bank.Accessed through:DOI: 10.1596/978-1-4648-1259-0

11. Ebenezer B. A. (2018) Financial inclusion, monetary policy, financial sector development and financial regulation in Sub-Saharan Africa.

12. Ebenezer B. A., Joshua Y. A., Kofi A. O. & Agyapomaa, G. (2019): Monetary Policy and Financial Inclusion in Sub-Sahara Africa: A Panel VAR Approach. Journal of African Business, 1-24.

13. EFInA Report. (2012), EFInAx – Access to Financial Services in Nigeria 2012 Survey. Available from: http://www.efina.org.ng/assets/

14. Elsayed, A. L. and Elatroush, I. M. (2019) Determinants Of Financial Inclusion In Middle–Income Countries. International Journal of Social Science and Economic Research, 04, (03), 2455-8834.

15. Elsherif, M. (2019) The relationship between financial inclusion and monetary policy transmission: the case of Egypt. International Academic Conference, London. DOI: 10.20472/IAC.2019.045.014

16. Evans, O. (2016) The Effectiveness of Monetary Policy in Africa: Modeling the Impact of Financial Inclusion. Iran. Economic Review, 20(3), 327-337.

17. Gretta S. (2017) Financial inclusion and growth. The Business and Management Review, 8(4), 434 – 441.

18. Harley, T. W., Adegoke, A. J. & Adegbola D. (2017) Role of Financial Inclusion in Economic Growth And Poverty Reduction in a Developing Economy. Internal Journal of Research in Economics and Social Sciences (IJRESS), 7(5), 265-271.

19. Hung, B. D. (2015) Financial inclusion and the effectiveness of monetary policy in Vietnam: An empirical analysis.

20. International Monetary Fund (2015b).Nigeria – Selected Issues Paper. IMF Country Report 15/85. Washington. Available at: https ://www.imf.org/exter nal/pubs/ft/scr/2015/cr158 5.pdf

21. Lei, T. T., Dang, N. D.L., Nguyen, T.D.T., Vu, T. S. & Tran, M. D. (2019) Determinants of financial inclusion :comparative study of Asian countries. Asian Economic and Financial Review. 9(10), 1107-1123.

22. Lenka, S. K. & Bairwa, A. K. (2016) Does financial inclusion affect monetary policy in SAARC countries?, Cogent Economics & Finance, 4(1), 1-8 1127011, DOI:10.1080/23322039.2015.1127011

23. Mader, P. (2018). Contesting financial inclusion.Development and Change, 49(2), PP. 461–483.

24. Management Review.

25. Mbutor, M. O. & Uba, I. A. (2013).“The Impact of Financial Inclusion on Monetary policy in Nigeria. Journal of Economic and International Finance. 5(8), 318-326.

26. Nandru, P. Byram, A. & Rentala, S. A. (2016) Determinants of Financial Inclusion: Evidence From Account Ownership and use Of Banking Services. International Journal of Entrepreneurship and Development Studies (IJEDS) 4(2), 141-155.

27. Oji, C. K. (2015).Promoting Financial Inclusion for Inclusive Growth in Africa.Occasional Paper 210. Economic Diplomacy Programme.South African Institute of International Affairs.African Perspectives.Global Insights.

28. Okoye, K. A., Erin, O. & Modebe, N. J. (2017) Financial Inclusion as a Strategy For Enhanced Economic Growth and Development. Journal of Internet Banking and Commerce, 22(8), 1 – 14.

29. Siddik, M. N. A. (2017). Does financial inclusion promote women empowerment? Evidence from Bangladesh. Applied Economics and Finance, 4(4), 169–177.

30. Soumaré, I., Tchana, F. T. & Kengne, T. M. (2016) Analysis of The Determinants of Financial Inclusion In Central And West Africa. World Bank, published in the Transnational Corporations Review 8(4), 12-08.

31. Thathsarani, U. S., Wei, J., & Samaraweera, G. (2021) Financial Inclusion's Role in Economic Growth and Human Capital in South Asia: An Econometric Approach. MDPI sustainability.
32. Usman, O. A. & Adigun, O. (2019) A Cointegration Analysis of the Relationship between Money Supply and Financial inclusion in Nigeria. *International Journal of Business and General Management (IJBGM), 8(4), 7-20.*

Appendix

Descriptive statistics

	LGDP	ATM	BA	BB	EXRATE	INF	INT	MS
Mean	11.48542	42.78506	361.5987	11.63781	100.0076	5.751479	8.106063	70.80946
Median	11.49771	28.61229	130.2200	10.41000	55.06000	4.900000	4.902500	66.20537
Maximum	12.45796	124.2953	2133.160	25.73000	590.2300	29.50000	39.65424	163.7435
Minimum	10.00016	2.053480	3.197033	4.300000	2.620000	-1.100000	0.500000	16.33246
Std. Dev.	0.551690	35.45064	445.0615	5.106473	115.5296	4.273271	7.930438	33.64109
Skewness	-0.527789	0.863422	1.639316	0.483056	1.725886	1.609119	1.982633	0.559499
Kurtosis	3.222985	2.554154	6.002713	2.343337	5.473502	7.998533	6.475035	2.370498
Jarque-Bera	8.196273	22.39791	139.1836	9.608923	126.9819	248.8693	195.7527	11.60770
Probability	0.356127	0.291314	0.174891	0.938193	0.421786	0.423217	0.858632	0.003016
Sum	1941.036	7230.674	61110.18	1966.791	16901.29	972.0000	1369.925	11966.80
Sum Sq. Dev.	51.13284	211133.7	33277397	4380.779	2242311.	3067.822	10565.83	190129.5
Observations	170	170	170	170	170	170	170	169

Panel unit root test

Panel unit root test: Summary
Series: GDP
Date: 01/11/22   Time: 10:46
Sample: 2010 2020
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 2
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-11.9004	0.0000	22	176
Breitung t-stat	-1.02292	0.1532	22	154
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.95033	0.0256	22	176
ADF - Fisher Chi-square	83.8056	0.0003	22	176
PP - Fisher Chi-square	41.9822	0.5585	22	220

** Probabilities for Fisher tests are computed using an asymptotic Chi
   -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(GDP)
Date: 01/11/22   Time: 10:48
Sample: 2010 2020
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 2
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-7.19357	0.0000	22	154
Breitung t-stat	-2.03400	0.0210	22	132
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.04066	0.5162	22	154
ADF - Fisher Chi-square	47.9386	0.3161	22	154
PP - Fisher Chi-square	51.2856	0.0096	22	198

** Probabilities for Fisher tests are computed using an asymptotic Chi
   -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: ATM
Date: 01/11/22   Time: 10:49
Sample: 2010 2020
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 2
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	33.0553	1.0000	21	161
Breitung t-stat	-0.29778	0.3829	21	140
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.46608	0.6794	21	161
ADF - Fisher Chi-square	32.9587	0.8398	21	161
PP - Fisher Chi-square	217.466	0.0000	21	203

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(ATM)
Date: 01/11/22   Time: 10:49
Sample: 2010 2020
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 2
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	58.9147	0.0000	14	98
Breitung t-stat	-3.26356	0.0032	14	84
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.27590	0.0313	14	98
ADF - Fisher Chi-square	34.6299	0.0009	14	98
PP - Fisher Chi-square	226.003	0.0000	14	126

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: BB
Date: 01/11/22   Time: 10:51
Sample: 2010 2020
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 2
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	16.7576	1.0000	21	161
Breitung t-stat	0.48447	0.6860	21	140
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.19353	0.5767	21	161
ADF - Fisher Chi-square	53.0215	0.1185	21	161
PP - Fisher Chi-square	229.767	0.1324	21	203

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(BB)
Date: 01/11/22   Time: 10:52
Sample: 2010 2020
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 2
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	38.4822	0.0000	14	98
Breitung t-stat	-0.86508	0.0335	14	84
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.95243	0.0404	14	98
ADF - Fisher Chi-square	45.2434	0.0208	14	98
PP - Fisher Chi-square	224.189	0.0000	14	126

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: EXRATE
Date: 01/11/22   Time: 10:52
Sample: 2010 2020
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 2
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-12.5364	0.0000	22	175
Breitung t-stat	4.11906	0.0000	22	153
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.97222	0.0005	22	175
ADF - Fisher Chi-square	47.7053	0.0245	22	175
PP - Fisher Chi-square	67.3963	0.0132	22	219

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(EXRATE)
Date: 01/11/22   Time: 10:53
Sample: 2010 2020
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 2
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	2.00775	0.9777	21	147
Breitung t-stat	3.42059	0.9997	21	126
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.37162	0.6449	21	147
ADF - Fisher Chi-square	41.5588	0.4902	21	147
PP - Fisher Chi-square	112.832	0.0000	21	189

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: INF
Date: 01/11/22   Time: 10:54
Sample: 2010 2020
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 2
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-1.37448	0.0846	23	183
Breitung t-stat	1.83748	0.9669	23	160
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	1.53902	0.9381	23	183
ADF - Fisher Chi-square	24.2608	0.9965	23	183
PP - Fisher Chi-square	69.4410	0.3144	23	229

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(INF)
Date: 01/11/22   Time: 10:55
Sample: 2010 2020
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 2
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-0.66477	0.0031	22	154
Breitung t-stat	0.73579	0.0091	22	132
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.19647	0.0221	22	154
ADF - Fisher Chi-square	48.8721	0.0037	22	154
PP - Fisher Chi-square	195.616	0.0000	22	198

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: INT
Date: 01/11/22   Time: 10:56
Sample: 2010 2020
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 2
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.05797	0.0000	19	150
Breitung t-stat	1.93452	0.0035	19	131
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.41056	0.0003	19	150
ADF - Fisher Chi-square	31.7713	0.0018	19	150
PP - Fisher Chi-square	40.4600	0.0022	19	188

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(INT)
Date: 01/11/22   Time: 10:56
Sample: 2010 2020
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 2
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.48760	0.0002	17	119
Breitung t-stat	1.42006	0.9222	17	102
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.54172	0.7060	17	119
ADF - Fisher Chi-square	25.9935	0.8357	17	119
PP - Fisher Chi-square	103.185	0.0000	17	153

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: MS
Date: 01/11/22   Time: 10:57
Sample: 2010 2020
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 2
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.22602	0.0006	23	181
Breitung t-stat	5.26311	1.0000	23	158
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.23225	0.5918	23	181
ADF - Fisher Chi-square	46.0907	0.4685	23	181
PP - Fisher Chi-square	62.3881	0.0640	23	227

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(MS)
Date: 01/11/22   Time: 10:58
Sample: 2010 2020
Exogenous variables: Individual effects, individual linear trends
User-specified lags: 2
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	5.08212	0.0000	20	140
Breitung t-stat	7.48499	0.0000	20	120
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.57272	0.0166	20	140
ADF - Fisher Chi-square	36.1942	0.0423	20	140
PP - Fisher Chi-square	68.8020	0.0031	20	180

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Kao Residual Cointegration Test
Series: GDP ATM BA BB EXRATE INF INT MS
Date: 01/11/22   Time: 11:13
Sample: 2010 2020
Included observations: 253
Null Hypothesis: No Cointegration
Trend assumption: No deterministic trend
User-specified lag length: 1
Newey-West automatic bandwidth selection and Bartlett kernel

	t-Statistic	Prob.
ADF	-0.426438	0.3349

Residual variance	7.14E+21
HAC variance	6.82E+21

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RESID)
Method: Least Squares
Date: 01/11/22   Time: 11:13
Sample (adjusted): 2012 2020
Included observations: 124 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID(-1)	-0.530172	0.094468	-5.612180	0.0000
D(RESID(-1))	0.163166	0.114762	1.421777	0.1576

R-squared	0.205759	Mean dependent var	-7.13E+09
Adjusted R-squared	0.199249	S.D. dependent var	1.00E+11
S.E. of regression	8.97E+10	Akaike info criterion	53.29239
Sum squared resid	9.81E+23	Schwarz criterion	53.33788
Log likelihood	-3302.128	Hannan-Quinn criter.	53.31087
Durbin-Watson stat	1.660413		

Fixed and Random effets models
Dependent Variable: LGDP
Method: Panel Generalized Method of Moments
Transformation: First Differences
Date: 03/12/22   Time: 21:43
Sample (adjusted): 2012 2020
Periods included: 9
Cross-sections included: 21
Total panel (unbalanced) observations: 133
White period instrument weighting matrix
White period standard errors & covariance (d.f. corrected)
Instrument specification: @DYN(LGDP,-2)
Constant added to instrument list

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LGDP(-1)	0.367426	0.087044	4.221148	0.0000
BB	0.006845	0.006635	1.031606	0.0001
ATM	0.000834	0.000549	1.520773	0.0753
INT	-0.000577	0.002069	-0.278780	0.0000
INFL	-0.006214	0.001608	-3.863470	0.0000
LMS	-0.063585	0.016922	-3.757524	0.0000
EXRATE	0.000192	0.000363	0.528215	0.0737

Effects Specification

Cross-section fixed (first differences)

Mean dependent var	0.010965	S.D. dependent var	0.037678
S.E. of regression	0.038762	Sum squared resid	0.189315
J-statistic	1.326017	Instrument rank	21
Prob(J-statistic)	0.506148		

Arellano-Bond Serial Correlation Test
Equation: Untitled
Date: 03/12/22   Time: 21:46
Sample: 2010 2020
Included observations: 137

Test order	m-Statistic	rho	SE(rho)	Prob.
AR(1)	-0.742160	-48582700	65461260	0.4580
AR(2)	-0.488786	-2701900	55279600	0.6250

Consumer Responces to CSR in Greek Banking Sector: Does CSR Really Matter?

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Abstract

This paper focuses on investigating the impact of Corporate Social Responsibility on consumers' preferences and loyalty in the banking sector. The researchers examined the main concepts associated with CSR and how it is related with the choice and the retention of customers to a specific bank. 67 individuals participated in a qualitative research, which was conducted through semi-structured interviews. The purpose of the research was to analyze the extent to which CSR actions affect customers' choice and loyalty to a bank. The main conclusions that emerged reveal that although the satisfaction and commitment, as well as the positive perception of consumers depends on the trust created by the banks, customers in Greece still believe that the CSR actions implemented by banks only contribute to increasing their organizational profits through the improved corporate reputation and recognition. It is thus evident that CSR does not have a significant impact on customers' attraction and loyalty. This paper also identified that one of the major problems in the banking sector is the lack of public confidence in the way banks operate and the special role they play in modern societies.

1.   Introduction

Every organization, especially in the private sector, seeks to maximize the wealth of its shareholders (Mayer, 2018). On the other hand, an organization's actions has a direct impact on the wider environment, both social and physical (Devie et al., 2019). Therefore, companies in the context of their decisions must consider the various social groups, the environment, the conflicting interests, the social needs, the social goals, and changes. The banking system plays a key role in the everyday transactions of people. More so, they assist in the management of capital and savings and in the creation of wealth. Banks also affect the economies of entire countries, since they determine the size of investments around the world. The current challenges that individuals have to face, not only in Greek society but globally, include the fair distribution of wealth, employment, environmental pollution, education for all, and dealing with health crises. This is something that has emerged, especially with the current COVID-19 pandemic. The social face of organizations is most commonly expressed through their Corporate Social Responsibility (CSR) actions. In general, it is accepted that these actions help organizations to build a responsible corporate image, which further enhances their reputation and competitive advantage. Furthermore, social responsible actions create trust for customers and employees and are positively related with loyalty. However, in the case of banks, these findings cannot be generalized.

The present study intends to examine Corporate Social Responsibility in the banking sector as well as its impact on consumers' preference and loyalty in a specific bank among other competitive ones. An attempt is made to determine whether a bank's CSR actions affect consumer behavior and preference as well as the choice of cooperating with a specific bank. Now that the banking system is changing and restructuring in a prolonged economic and humanitarian crisis, it is of particular interest to explore the perceptions that society has formed about the social face of banks, given the growing interest in the behaviors and actions of the environment, employment, and quality of life. The study also seeks to clarify the concept and content of Corporate Social Responsibility and to investigate the impact of CSR actions on the Greek consumer. For this reason, a secondary research was implemented with the use of secondary sources (relevant literature, articles, studies). 37 individuals participated in a primary survey, which was conducted through semi-structured interviews. The dimensions of Corporate Social Responsibility as perceived by consumers will be identified. Also, consumers' perceptions of CSR as well as their attitude towards banks' CSR actions will be explored in a

reasoned manner. More specifically, the objectives of the research refer to the investigation of:
- The impact of CSR in attracting new customers.
- The impact of CSR on consumer loyalty.
- The CSR as a means of enhancing customers' feelings of trust and security.

The banking industry is a particularly important sector in which the satisfaction of each customer is associated with the efficiency of each service or product offered to him/her. This implies that there are different degrees of satisfaction (Mercer, 2003). According to many researchers (Darzi & Bhat, 2018; Fida et al., 2020; Aramburu & Pescador, 2019), banks worldwide try to develop good relationships with their customers with the aim of their retention and loyalty to the organization, especially through their CSR actions (Stanaland et al., 2011). Additionally, banks need to focus on meeting the financial needs of organizations in order to operate smoothly. Corporate Social Responsibility enhances this effort as a means of competitive advantage and differentiation (Saiz & Pilorge, 2012). Thus, the two main criteria for starting the research refer to the importance and trust of the banking sector for consumers, as well as the importance of CSR and the value it offers to them. Therefore, the research questions are stated as follows:
1) How does CSR impact on the attraction and loyalty of customers in the banking sector?
2) Which CSR actions are most important for customers to prefer and continue their cooperation with a bank?

The significance of the present study is in twofold. Firstly, the conclusions that emerged will enrich the Greek and international existing literature on the concept and application of CSR, which has attracted the interest of the academic community but has not been thoroughly investigated in terms of its implementation by the banking sector. Secondly, the perceptions of the consumers will be reflected as they exist during the current period and will give the direction that CSR actions should be implemented by banks to keep pace with changing societal expectations.

2.   Literature Review
2.1.   Definition and Debate on CSR
The development of CSR has its roots in 1960, when economic and legal aspects appeared. Afterwards, it was developed mainly in 1970 (Carroll, 1999). Although there are different approaches to the definition of CSR (Garriga & Mele, 2004), most scholars refer to it with different meanings. In general, Corporate Social Responsibility is referred to as a commitment for

companies in order to shape their socio-ethical behavior and optimize the quality of work standards so as to exert high influence on financial issues (Hahn et al., 2018; Gond & Nyberg, 2017). The Green Paper of European Commission defines CSR as the concept of involving companies in voluntary acts with social and environmental content. Bowen's book (1953) is considered the beginning of the modern literature on Corporate Social Responsibility, since he is also known as the "father" of CSR. Therefore, he introduced a first approach that refers to the entrepreneurs and the obligation they have towards the society in order to achieve the desired actions and goals. According to Luo and Bhattacharya (2006), CSR first developed in the United Kingdom and the United States and subsequently in Greece. For this reason, it was embraced to describe corporate actions and initiatives. Another view of CSR theory is that of Becker- Olsen et al. (2006), who argue that CSR is a motivator and one of the most effective and reliable tools for businesses to improve their image to society. It is also regarded as a significant part of an organizational strategy (Dathe et al., 2022). The first global CSR strategy was announced by the Commission of the European Communities in 2001 with the aim of defining this concept in order for companies to implement this strategy in social and environmental issues in combination with the contacts they have with their stakeholders (Hoffman, 2018). It is observed that many of the CSR definitions do not have common characteristics and consist of different factors (Tauringana & Chithambo, 2015). Brown and Dacin (1997) wrote that CSR defines and represents the activities as well as the profile of a company. Another definition of Hohner (2007) refers to CSR as a business policy concerning activities and actions of educational, environmental, and cultural content (external CSR), as well as actions in favor of employees' rights, health and safety rules (internal CSR). Therefore, organizations incorporate social environmental and voluntary concerns into their business activities (Fahy et al., 2005). During the 60's, an effort was made to finally understand what Corporate Social Responsibility meant for society and business (Carroll, 1999). By the end of the decade, CSR was mainly related with charities, better working conditions for employees, and improvements in customer relationships (Heald, 1970). In the 1970s, Carroll (1979) gave a definition of CSR that consisted of four points or responsibilities within a framework (called "Carroll's CSR pyramid") that explains how and why organizations should take social responsibility. It referred to the economic, legal, ethical, and philanthropic expectations that a society has from organizations. In the next decade, Freeman's (1984) contribution to the concept of stakeholders was also considered important since they were seen as individuals who can be influenced and also influence a company to achieve its goals (Goodpaster, 1991).

The challenges of Corporate Social Responsibility and its real purpose started from the beginning of its development (Latapí Agudelo et al., 2019). However, there have been different definitions and perceptions of its true meaning. One of the scholars who discussed the main purpose of CSR was Friedman (1962), who strongly supported that the sole responsibility of companies is to increase the profits of shareholders and owners (Jahn & Brühl, 2018). For Friedman and his supporters, CSR is not the responsibility of companies since these are considered issues to be resolved by the free market and even if it cannot intervene, it is of a legal and governmental nature. The same opinion is shared by Davis (1973), who also expressed his own view against CSR while arguing that companies are incapable of organizing social actions due to lack of appropriate means. This is because business executives are more focused on financial issues and do not have the appropriate training to take on social responsibilities. In conclusion, he questioned that if companies have enough power, why give them the opportunity for more. Nevertheless, the theory of Hayek (1969) argues that any CSR action within a business can mislead it from its core objectives. Brummer (1991) examines various approaches to CSR definitions and proposes some relevant types of corporate behavior. He starts from voluntary acts that go beyond the legal framework of the company and continues with the execution of actions under the conditions of responsibility of each company. He also refers to the theory of "social contract" and "social legitimacy", arguing that few companies can compete with these theories (Steiner & Steiner, 2000). Another well-founded theory of Kotler and Lee (2005) reveals that CSR signifies the improvement and commitment of society through business processes, which refers to the obligation of companies to undertake voluntary acts that are not based on law and rules.

Considering the increasing importance of CSR practices in the way businesses conduct themselves and the rising trend of adopting such practices and communicating them to the stakeholders involved, the knowledge produced about corporate CSR practices can help in the creation and enrichment of best practices. This can be communicated and advertised to the wider population of the country's businesses (Sahinidis & Kavoura, 2014). Therefore, it is concluded that companies deliberately delimit CSR actions and its importance is not so familiar to the citizens. As a result, it is treated with suspiciousness even though they defend this initiative. The ultimate goal is not to judge the philosophy of CSR, but to give a general view of how both citizens and businesses perceive it. This view externalizes the difficulty faced by Greek companies not only in including CSR in their actions, but also in convincing society that they can manage to operate in this way.

2.2.   CSR in Banking Sector

Although CSR is general for all organizations, it deals with more complex issues in the field of banking as banks have to quickly respond and satisfy customers' needs with their policy. They also play a vital role in each country's economy (Farcane & Bureana, 2015). In essence, banks do not rely on proving their social activities since the importance of their social role is their own banking activity. However, banks have been researching social and environmental issues since 1990 and they have incorporated these activities to add value to their policies. They played a leading role in the risks of pollution, while they also focused on financial incentives and gave access to affordable and short-term credit for low-income consumers (Smprini & Ouzouni, 2010). In addition, banks developed collaborations with institutions and various organizations and bodies in order to publish reports of their corporate social responsibility actions in the context of their social contribution. As a result, banks run programs supporting environmental, educational, and cultural voluntary economic activities in non-profit organizations, but also in vulnerable groups. For example, in terms of environmental protection, these organizations contribute to energy savings by reducing electricity consumption and paper recycling management (Venturelli et al., 2018). A survey conducted in the Bangladeshi banking industry found that the main benefits of the implementation of CSR were initially the improvement in staff recruitment, the improvement in the way that decisions were made within the bank, and the reduction of costs (Wu et al., 2017). In addition, Bihari and Pradhan (2011) examined the relationship between corporate social responsibility and banking performance in India. The results were positive for CSR since it proved its contribution to the overall performance and reputation of the banks towards their consumers and the whole society of India. Therefore, in order for banks to be able to build their public image, they would have to be socially responsible (Aramburu & Pescador, 2019). As a result, they would initially attract high-performance and quality employees, expand their customer base, and attract more investors by encouraging them with greater market growth so as to gain the trust of a wider audience (Kostyuk et al., 2010; Hoang, 2014). Furthermore, several academic authors such as Hackethal et al. (2005) and Grove et al. (2011) have also investigated the application of CSR in the banking industry. Specifically, Hackethal et al. (2005) have identified three areas in which banking policy emphasizes:

- In the human resources
- In liquidity control
- In lending

Regarding the human resources, the emphasis is placed on the defense of the employees within the banks and on the development of their skills for a

greater productivity. However, in liquidity control, the policy concentrates on the shares in order to control the liquidity in the market. In conclusion, Hackethal et al. (2005) confirms that a CSR policy in the banking sector should be able to change strategy if the vision of the policy is to be effective and to be able to survive in continuous changes at the global level. A viable bank should set more and more specific sustainability development goals beyond its expectations of customer and shareholder satisfaction (Landgren & Catasus, 2000). This is because banks are directly involved with the economy and their actions can significantly affect both the economy itself and the society. In recent years, CSR has been increasingly accepted by companies and is now considered one of the most important objects of competitive advantage (Saeidi et al., 2018). More specifically, it enables banks to take initiatives to improve their environmental and social behavior, as well as their image. Benn, Abratt, and Kleyn (2016) pointed that the risk of creating an unwanted corporate reputation is associated with decisions that take into account the claims of stakeholders, which are conflicting with liability to society as a whole. The findings of Benn et al. (2016) indicate that senior executives should not put corporate reputation at risk by setting priorities that could undermine the confidence of stakeholders and threaten the legitimacy of their claims. This confirms the theory that corporate reputation is a function of complex relationships and exchanges between organizations and stakeholders. Fatma and Rahman (2016) further suggest that corporate ability has a strong effect on customer's purchase intention, while CSR activities were found to exert influence on customers' purchase intention in cases where they were aware of such activities being conducted. Therefore, it is equally important for banks not only to take CSR actions but also to communicate them effectively.

However, there is still a significant percentage of consumers who believe that banks are not socially aware (Jonathan, 2006; Pomering & Dolnicar, 2009; Bhaskaran & Hardley, 2002). For example, the findings of Jahan and Shahria (2021) revealed that expense, responsiveness, and relative advantage do not have a significant influence, while security and convenience have insignificant influence on customers' satisfaction. Although they are not directly related with their loyalty, satisfaction and loyalty are strongly related with each other. According to the research of Chomvilailuk and Butcher (2014), bank consumers in Australia found that the existing perceptions of socially responsible performance had a negative effect on purchase intentions in the banking sector.

An interesting and important variable is recognized in various scientific disciplines, which is the trust of customers towards companies. Businesses rely on CSR actions to enhance their reputation and economic growth. Today, organizations realize that customers will be motivated and will

feel a greater need for loyalty towards them. However, if consumers are positively or negatively affected by those business activities, it is based on the characteristics of each organization and the resources it has to convince the consumer (Brown & Dacin, 1997). Therefore, consumers will prefer companies with a strategy and culture that enhance security and trust and create an even more positive opinion to the public (Bhattacharya & Sen, 2003). Another issue related with CSR actions and their impact on consumer behavior is the size of organization. Specifically, Green and Peloza (2014) pointed that, although their interview findings generally suggest that small firms benefit from CSR engagement because of positive attributions that consumers hold, there were also identified opportunities for large firms to develop positive attributions amongst consumers. Furthermore, they found that consumers are often willing to accept socially irresponsible behavior by small firms while showing very little tolerance for similar transgressions by large firms.

It is also important for banks to improve their reputation and recognition as a sensitized category of business, with the support of their consumers and employees. Most companies now focus on environmental and social issues by creating more value and showing that their concern is not only customer service and their financial criteria but also their ethical satisfaction (Carrasco, 2007). Creating such values in loyal customers becomes even more necessary because loyal and satisfied customers are more resistant to malicious comments and negative views (Carroll, 2015). Banks are often met with suspicion and negative criticism from the superficially socially responsible company and the company that targets CSR actions to increase its profits without much social contribution. On the other hand, it is certain that CSR actions help and enhance both consumer's confidence and employee's confidence in the company they work for (Hansen et al., 2011). Specifically for the banking sector, an empirical study by Bolton (2013) regarding the relationship between CSR, financial performance, and risk in US banks during the period 1998 - 2010, confirmed that the banks participating in CSR activities tend to have better financial results and a better reputation. It is noted, however, that all CSR actions do not add the same value to the financial results, but the greatest impact seems to have those actions that are directly related to the core activities of the bank and are part of its business mission. The same conclusion is reached by a large number of researchers who support the positive relationship between CSR actions and the financial results of banks and their corporate reputation (Brown & Dacin, 1997; Becker-Olsen, Cudmore & Hill, 2005). In the research of Ellen, Webb, and Mohr (2006), there was a difference in the attitude of consumers regarding the motivations that lead a company to take CSR actions. Consumers were more positive in CSR actions that were evaluated as part of the business strategy or were inspired by the organizational values. Furthermore, in this study, the buying

behavior of consumers is influenced by the view they have about the CSR actions. Finally, another study of Lee, Park, Rapert, and Newman (2012), which examined the relevance between consumer perceptions and the CSR actions of a company and its impact on consumer behavior, suggests that there is a positive correlation between the actions perceived as harmonized with the personal beliefs of the consumer and the degree of consumer loyalty to the company.

Generally, in comparison with other sectors, the banking sector responded relatively slowly to CSR challenges. Initially, the perception was that it was about environmental and social issues (Viganò-Nicolai, 2009). However, CSR helps to increase and legitimize the economic performance of the sector and also appears as the integration of the fundamental principles of business ethics (Scholtens, 2006). In Greece, the four big banks have incorporated the concept of CSR in their vision and mission, which has given great importance to their relationship with society. With the above formulations, the banks have accepted their social responsibility and are committed to implementing actions that stem from their vision and mission. Thus, they specialize through their strategy for the benefit of their various stakeholders.

3. Methodology

The methodology concerns the approaches, the techniques, the means, and the way in which a specific topic is investigated (Hakim, 2012). It defines the process that the researcher has chosen to start with and complete his/her research. The ultimate purpose of the present study is to find out how CSR in the banking sector can affect consumer preference and loyalty and whether potential actions can strengthen their sense of trust in the banks that already cooperate or intend to cooperate. The research process used the "research onion" tool developed by Saunders et al. (2007), which illustrates the stages involved in the development of a research project (Figure 1). In other words, the onion's layers give a more detailed description of the stages of a research process. This tool provides an effective development through which a research methodology can be designed. Its usefulness lies in its adaptability to almost any type of research methodology and can be used in a variety of contexts (Bryman & Cramer, 2012). Saunders et al. (2012) noted that while using the research onion, the researcher has to go from the outer layer to the inner layer. When viewed from the outside, each layer of onion describes a more detailed stage of the research process (Saunders et al., 2007). The following figure (Figure 1) presents the layers of the research onion that was considered very useful for conducting the research in a logical way.
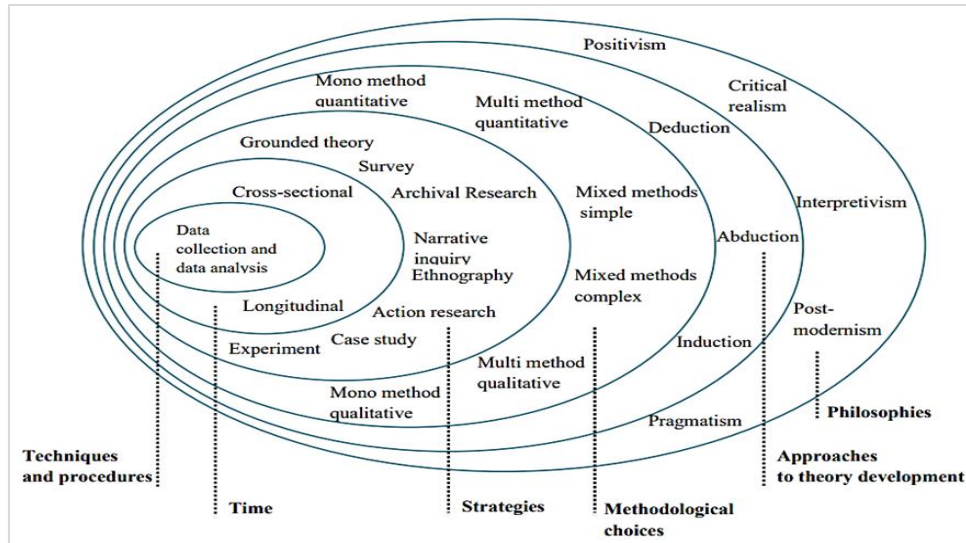
Figure 1. The research "onion" according to Saunders et al. (2016) as cited in Saunders et Al. (2015)

As for the *philosophy* described in this graph, this study was based mainly on *epistemology*. Epistemology is mainly used in scientific research and helps to find information that can be proved without a doubt.

Regarding the *research approach*, there are two recognized types: the inductive and the deductive approach. While inductive reasoning aims at developing a theory, deductive reasoning aims at testing an existing theory (Soiferman, 2010). The present study, however, followed the *deductive* approach. The *research strategy* used is the *survey* since it is one of the best and most economical research strategies that enable the collection of rich and reliable data. Additionally, with regard to the fourth layer of the onion, the *single method* was chosen as it allows the collection of a type of information either by quantitative or qualitative methodology.

The *cross-sectional approach* is used since the cross-sectional time horizon has already been defined and the data must be collected. This approach is used when the research concerns the study of a specific phenomenon at a specific time.

Regarding the sixth and final layer of the research onion, the data collection was implemented through the *interview* and *qualitative research*. A main characteristic of the qualitative method is its reference to the species, i.e., to the character of the phenomenon (Kvale, 1996). This type of research explores human motivation through the understanding of consumer views and perceptions. This is because it can be used to study a section of the population to explain their choices and thoughts based on the perception of ideas they hold, which vary between different sections of the population (Creswell, 1998). According to Lincoln and Cuba (1985), the qualitative method is

characterized by a normal directional flow and is not so much influenced by the individual researcher. Therefore, the researcher is able to understand and penetrate the personality of consumers. In the present study, *semi-structured interviews* were selected and categorized into *non-standard interviews*. In non-standard interviews, the researcher prepares a series of questions that he/she would like to be asked, which is included in his/her research. The difference between this type and the traditional semi-structured interviews is that some of the interviews in the present study were done through email, while others were conducted through phone. Thus, there was no direct personal contact with the respondents due to the conditions of the current pandemic. According to Meho (2006), email interviews can replace interpersonal ones when the sample is in a different geographical area from the researcher. The interviews took place during the period of October 2020 to April 2021.

4. Results
4.1 Interview Design

1. *Selection of respondents:* The first step was the selection of the respondents. The researchers managed to communicate with 67 individuals who are bank customers. The respondents were all adults and majority of them (48%) were between 41-50 years old, while the minority (6.3%) were under the age of 30. 72.1% were men while 27.9% were women. Regarding the education level, 49.3% holds a master's degree and 43.9% holds a bachelor's degree. The basic criteria taken into account for the selection of the respondents were not specific as the only element that should be taken into account was their coordination with one of the big four Greek banks. As a result, the convenient sampling was followed.

2. *Preparation, interview planning:* The second step was the creation of the interview questions. The interview questions arose after the completion of the literature review to better answer the main research questions. The interviews created were based on three thematic axes/themes that coincided with the purpose of the research findings and research questions (see Table 1). Each theme consisted of specific questions for data collection.

   - The first theme consisted of *7 questions* related to the recognition of CSR by consumers and whether they knew CSR programs of the banks they cooperate with.
   - The second theme consisted of *6 questions* based on consumer's criteria in choosing a bank. The aim was to indicate whether CSR was one of the main criteria for choosing a bank. Emphasis was also placed on the question of whether CSR

actions benefited themselves as customers or only the banks as organizations.

- The third theme consisted of *5 questions* related to the feeling and attraction of consumers due to CSR actions performed by their banks. The variables of loyalty, safety, and trust played a major role here as they are very important elements related to consumer behaviors (Rita, Oliveira & Farisa, 2019).

Table 1. The thematic axes

Thematic Axis 1	
Recognition of CSR by the consumers	7 questions
Thematic Axis 2	
CSR as a bank selection criterion	6 questions
Thematic Axis 3	
The effect of CSR on creating loyalty in the banking sector	5 questions

4.2   Data analysis

The analysis of the interviews was carried out through the content analysis. This is a process that refers to a continuous interpretation of the findings which decodes the discussions that take place within an interview (Maguire & Delahunt, 2017). The first step is the recording and storage of data from the interviews, so that the frequent data are listed and can be categorized and later analyzed. According to Downe - Wamboldt (1992) and Morgan (1993), thematic analysis uses a descriptive approach both in data coding and in the interpretation of code quantitative measurements. For this research, thematic analysis was used because it is a more specialized framework of analysis for searching and finding thematic units through texts and data. Through the data, it focuses on a topic related to a research question and can be expressed in a phrase or word and included in the coding. It can also be researched through the expressions and ideas that arise based on the research questions (Braun & Clarke, 2006). Thematic analysis provides a purely qualitative, detailed view of the data (Braun & Clarke, 2006; Assarroudi, Heshmati Nabavi, Armat, Ebadi & Vaismoradi, 2018). Below (Figure 2) are the initial codes that emerged from the answers of the interviews.
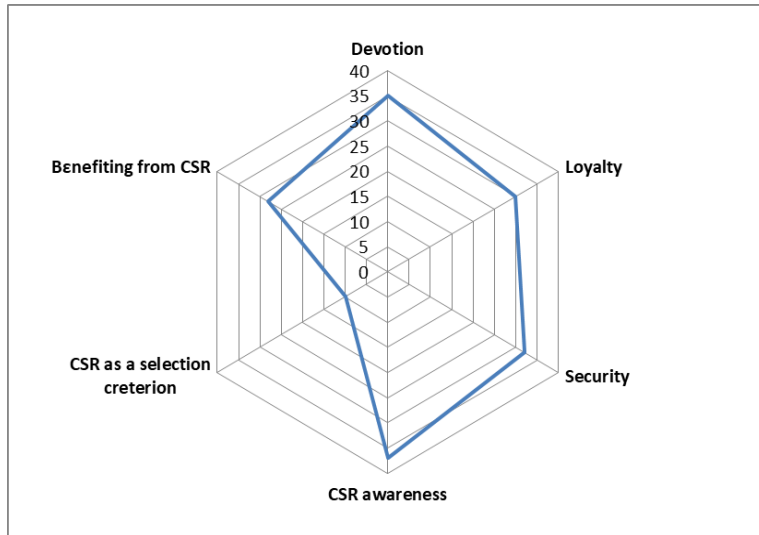
Figure 2. Initial codes from answers

The following paragraphs present the analysis of the participants' answers based on each question (Q).

Q1, "*on the importance of CSR and how it relates to consumers*", was initially answered by the various concepts and definitions of the literature. It was found that Corporate Social Responsibility has evolved over time and companies choose it to compete in the market, as well as to offer social outcomes. In terms of loyalty, although with a small difference, few respondents answered positively to whether CSR actions can be a reason to remain loyal to their bank. However, majority did not consider it an important reason to stay or to change their bank. The result of the question whether they knew the concept of Corporate Social Responsibility was positive since everyone knows it and many of them referred to terms such as "sustainable development" and "environmental protection". Most respondents mentioned an environmental action, which means that CSR has been formulated in the minds of the consumers as an action to protect the environment. Other topics mentioned by the minority of respondents (R) include the following examples:

- **R32** referred to CSR as "*actions such as sponsorships in the culture and arts as any collaborations for sustainable development*". This is in contrast to **R58** who was not aware of CSR actions of his bank.
- Respectively, **R11** stated that "*he was interested in the actions for the awarding of excellent pupils-students",* while **R45** stated that "*he is interested in CSR actions in the arts and culture"*.

Another question was asked if CSR is a reason for loyalty to the bank that respondents prefer. Here, 34 out of 37 answered "No", claiming that CSR

is not a reason for their loyalty to a bank but the services they receive, the privacy offered by their bank, as well as whether it offers them online services and internet or mobile banking options. From these data, it seems that customers do not emphasize CSR's importance so much. For instance, **R22** stated that "*the reason for my loyalty was the bonus programs offered by my bank as well as the security of my privacy*". The same opinion comes from other respondents. Many respondents (58) also pointed the importance and impact of "quality and fast services" on their loyalty. However, when asked about security issues, i.e., whether they believe that the CSR actions carried out by their banks may increase the sense of security, the vast majority (63) answered "Yes". This result shows that although CSR is not a reason for customers to remain loyal, it creates a sense of security. This is probably because their banks show a more socially and environmentally friendly profile, and this makes customers trust them more. Some of the respondents' answers are outlined below:

- **R36** said "*I would be interested in working with another bank that would run more CSR programs and that would provide me with greater security*".
- Similarly, **R24** stated that "*I feel more secure knowing that my bank is environmentally and socially aware, through CSR actions*". This is in contrast to **R63** who stated that "*CSR actions do not increase my sense of security*".

Results were also obtained from the next question whether CSR is the criterion of customers' choice for a bank in the future and whether CSR was the criterion for their cooperation with their current bank. All respondents answered that CSR actions are not a selection criterion and they focused again on the criteria of fast services and security in financial transactions. This is probably due to the fact that while they know CSR, they still believe that organizations and mainly banks "use" CSR actions as a way to attract more customers and not because they are really socially responsible. Furthermore, the past financial crisis pointed the need for more financial security and development. In addition, emphasis was placed on the question of whether they feel that they receive benefits from the CSR actions. Interestingly, 65 out of 67 believe that only the banks gain some benefits, which is mainly associated with better financial results and reputation.

According to Gibs (2007), each code resulting from the answers can intersect and record specific passages that explain the theory itself by linking their meaning and the code to a name. As a result, anything that is repeated in the text is categorized so that a set of ideas on the subject can be found and analyzed. In addition, the approach of the present research is inductive as the data of the interviews have been codified and grouped in relation to the

research questions that have been formed in 3 thematic axes. Table 2 shows the codes that emerged from the most common answers given by the respondents. As to whether CSR is a term that people know its meaning, the resulting codes are mainly associated with *environmental issues*. Also, many answers created codes such as *the strengthening of corporate reputation, donations, social activities, and sponsorships in education.* For example, **R64** during the telephone communication claimed that "*I know CSR as a voluntary act of companies, mainly environmental ones"*. However, it was understood that the respondent had previously studied and memorized a definition of CSR and he was not aware of its real meaning. The next category highlighted important codes and information on a bank's actual cooperation criteria. The words *"security", "reliability", "fast service"*, and "*payrolls*" were repeated. In conclusion, the criteria of consumers mainly focus on their financial benefits and their financial security. Some of the respondents also mentioned that "*bonus packages*" and some "*better financial offers*" could make them change their bank, which confirms that the main concern of most of the respondents is their financial benefits. The third category refers to the rasons for attracting the respondents and what they feel about the CSR actions of their banks. Therefore, regardless of whether everyone knew the importance of CSR, what has emerged shows that although CSR is not a criterion for selection and loyalty, it nevertheless creates a positive perception and a positive impression on the bank they cooperate with. More so, they stated that they are willing to trust it even more because CSR actions make banks look socially and environmentally responsible. It was also found that the majority of responses showed more interest in CSR actions related to the human factor (e.g., support for vulnerable groups, employee benefits) and less for environmental issues such as recycling actions.

Table 2. Codes from answers

WHAT CSR MEANS FOR CUSTOMERS	COOPERATION CRITERIA WITH A BANK	CUSTOMERS' FEELINGS ABOUT CSR
Environmental protection	Financial issues	Social offer
Social actions	Security	A positive company's profile
Better brand name and reputation	Security in transactions	An incentive to remain at this bank
Charities	Fast services	Responsible organizations
Sponsorships	Internet banking and mobile banking services	Increased trust

Based on these codes, a thematic map (Figure 3) was created in order to summarize the important results and data as well as to codify the findings of the present study (Braun & Clarke, 2006).
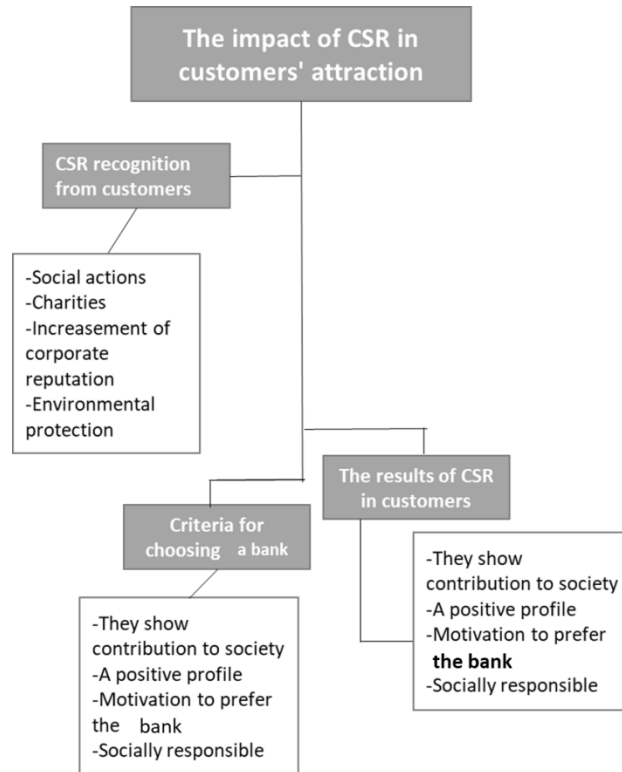
Figure 3. The thematic map

5.   Discussion and Conclusion

The present study investigated the role of Corporate Social Responsibility in the banking sector. From the various concepts and definitions of CSR literature, it is found that Corporate Social Responsibility has evolved over time and companies choose it today to strengthen their corporate image and to attract consumers. It further serves as a means of social and environmental contribution. The implementation of CSR includes many fields with a multidimensional character that can be implemented with a variety of actions.

The research questions were based on CSR and the impact that it has on the banking sector in terms of attracting and creating loyal customers. After the completion of the research, which was conducted through 67 semi-structured interviews, it seems that customers' first contact with their banks was due to their jobs (payroll bank accounts) and the suggestion of the related bank by their relatives. As for the motivation for their retention, the answers showed that majority of the respondents stated that it was not CSR but the reliability of the bank, the security of their transactions (Jahan & Shahria, 2021), as well as the immediate and fast services. In terms of how attractive

the CSR actions of their banks are, security was the most important issue they mentioned. This further proved that CSR is not a strong incentive for attracting them and for creating loyalty to a bank. However, most of the respondents knew the term of Corporate Social Responsibility and some of the CSR actions implemented by their banks. Although CSR is not a strong incentive to be loyal and to choose one bank or change it with another competitive one, they stated that they have a positive view and a sense of greater trust and security since these organizations attract high-skilled employees who ensure a greater productivity and quality in their services (Klan et al., 2018; Wu et al., 2017; Bihari & Pradhan, 2011; Aramburu & Pescador, 2019; Marconi, 2012; Kostyuk et al., 2010; Hoang, 2014). The responses here highlighted the importance of human-related CSR actions (e.g., charities, donations, education awards, cultural activities, etc.), while the minority referred to the importance of environmental actions.

Furthermore, the data from the primary research showed that loyalty and consumer attraction is not affected by bank's CSR actions. This confirms the perception of Davis (1973), who argued that most companies are not competent to support such actions due to lack of specific resources and knowledge. The results are also confirmed by the vast majority of studies in the field of CSR in the banking sector, which showed that these actions do not have a significant impact on consumer behavior and loyalty even though they enhance their sense of trust (Jonathan, 2006; Pomering & Dolnicar, 2009; Bhaskaran & Hardley, 2002; Chomvilailuk & Butcher, 2014; Green & Peloza, 2014; Bhattacharya & Sen, 2003). Although satisfaction and commitment, as well as negative or positive perceptions of consumers, depend on the trust generated by the organization (Sirdeshmukh et al., 2002), the CSR actions implemented by the banks are considered because of the increase of organizational profits and corporate reputation and recognition. This finding that CSR actions benefit only banks and not their customers is also supported by literature (Carroll, 2015; Lee, Park, Rapert & Newman, 2012; Brown & Dacin, 1997; Becker-Olsen, Cudmore & Hill, 2005; Ellen, Webb & Mohr, 2006; Bolton, 2013).

In conclusion, the issue of Corporate Social Responsibility may be unknown to many individuals but is an interesting topic that needs further study especially in the banking sector. For more specific results, scientific research could be conducted on the actions implemented by specific banks and for a particular consumer audience. Another suggestion is the analysis of new aspects of CSR, which combines qualitative and quantitative research. Finally, a survey of the views of executives and employees is also suggested as this would highlight the recognition of CSR by employees and whether their involvement can improve the transmissibility of CSR actions to consumers,

which will maintain a competitive advantage and perhaps a faster recognition of Corporate Social Responsibility by the consumers at the banking sector.

References:
1. Aramburu, I. A. & Pescador, I. G. (2019). The effects of corporate social responsibility on customer loyalty: The mediating effect of reputation in cooperative banks versus commercial banks in the Basque country. *Journal of business ethics*, *154*(3), 701-719.
2. Assarroudi, A., Heshmati Nabavi, F., Armat, M. R., Ebadi, A., & Vaismoradi, M. (2018). Directed qualitative content analysis: the description and elaboration of its underpinning methods and data analysis process. *Journal of Research in Nursing*, *23*(1), 42-55.
3. Becker-Olsen, K. L., Cudmore, B. A., & Hill, R. P. (2006). The impact of perceived corporate social responsibility on consumer behavior. *Journal of business research*, *59*(1), 46-53.
4. Benn, S., Abratt, R., & Kleyn, N. (2016). Reducing reputational risk: Evaluating stakeholder salience and prioritising stakeholder claims. *Marketing Intelligence & Planning*.
5. Bhaskaran, S. & Hardley, F. (2002). Buyer beliefs, attitudes and behaviour: foods with therapeutic claims. *Journal of Consumer Marketing*.
6. Bhat, S. A., Darzi, M. A., & Parrey, S. H. (2018). Antecedents of customer loyalty in banking sector: a mediational study. *Vikalpa*, *43*(2), 92-105.
7. Bihari, S. C. & Pradhan, S. (2011). CSR and performance: the story of banks in India. *Journal of Transnational Management*, *16*(1), 20-35.
8. Bolton, B. J. (2013). Corporate social responsibility and bank performance. *Available at SSRN 2277912*.
9. Bowen, H. (1953). Social Responsibilities of the Businessman. New York: Harper
10. Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, *3*(2), 77-101.
11. Brown, T. J. & Dacin, P. A. (1997). The company and the product: Corporate associations and consumer product responses. *Journal of marketing*, *61*(1), 68-84.
12. Brummer, J. J. (1991). Corporate responsibility and legitimacy: An interdisciplinary analysis.
13. Bryman, A. & Cramer, D. (2012). *Quantitative data analysis with IBM SPSS 17, 18 & 19: A guide for social scientists*. Routledge.
14. Carrasco, I. (2007). Corporate social responsibility, values, and cooperation. *International Advances in Economic Research*, *13*(4), 454-460.

15. Carroll, A. B. (1999). Corporate social responsibility: Evolution of a definitional construct. *Business & society*, *38*(3), 268-295.

16. Carroll, A. B. (1979). A three-dimensional conceptual model of corporate performance. *Academy of management review*, *4*(4), 497-505.

17. Chomvilailuk, R. & Butcher, K. (2014). Effects of quality and corporate social responsibility on loyalty. *The Service Industries Journal*, *34*(11), 938-954.

18. Creswell, J. W. (1998). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage.

19. Darzi, M. A. & Bhat, S. A. (2018). Personnel capability and customer satisfaction as predictors of customer retention in the banking sector: A mediated-moderation study. *International journal of bank marketing*.

20. Dathe, T., Dathe, R., Dathe, I., & Helmold, M. (2022). Stakeholder der CSR. In *Corporate Social Responsibility (CSR), Sustainability and Environmental Social Governance (ESG)* (pp. 143-148). Springer, Cham.

21. Davis, K. (1973). The case for and against business assumption of social responsibilities. *Academy of Management journal*, *16*(2), 312-322.

22. Devie, D., Liman, L. P., Tarigan, J., & Jie, F. (2019). Corporate social responsibility, financial performance and risk in Indonesian natural resources industry. *Social Responsibility Journal*.

23. Downe-Wamboldt, B. (1992). Content analysis: method, applications, and issues. *Health care for women international*, *13*(3), 313-321.

24. Ellen, P. S., Webb, D. J., & Mohr, L. A. (2006). Building corporate associations: Consumer attributions for corporate socially responsible programs. *Journal of the academy of Marketing Science*, *34*(2), 147-157.

25. Fahy, M., Roche, J., & Weiner, A. (2005). *Beyond governance: Creating corporate value through performance, conformance and* responsibility. New York, NY: John Wiley and Sons, Inc

26. Fandos-Roig, J. C., Sánchez-García, J., Tena-Monferrer, S., & Callarisa-Fiol, L. J. (2020). Does CSR help to retain customers in a service company?. *Sustainability*, *13*(1), 300.

27. Farcane, N. & Bureana, E. (2015). History of" Corporate social responsibility" concept. *Annales Universitatis Apulensis: Series Oeconomica*, *17*(2), 31.

28. Fatma, M. & Rahman, Z. (2016). The CSR's influence on customer responses in Indian banking sector. *Journal of Retailing and Consumer Services*, *29*, 49-57.

29. Fida, B. A., Ahmed, U., Al-Balushi, Y., & Singh, D. (2020). Impact of service quality on customer loyalty and customer satisfaction in islamic banks in the Sultanate of Oman. *Sage Open*, *10*(2), 2158244020919517.

30. Freeman, R. E. (1984). Strategic Management: A Stakeholder Approach, Boston, Pitman. *Lukas, Janina (2017): Ethik als Standard in der Beschaffung. Werte und Normen als Gestaltungsausgangspunkt von Nicht-Regierungs-Organisationen. Wiesbaden: Springer Gabler*.

31. Friedman, M. (1962). Excerpts from Milton Friedman, Capitalism and Freedom. *Chapter*, *1*, 7-17.

32. Garriga, E. & Melé, D. (2004). Corporate social responsibility theories: Mapping the territory. *Journal of business ethics*, *53*(1), 51-71.

33. Gond, J. P. & Nyberg, D. (2017). Materializing power to recover corporate social responsibility. *Organization Studies*, *38*(8), 1127-1148

34. Goodpaster, K. E. (1991). Business ethics and stakeholder analysis. *Business ethics quarterly*, 53-73.

35. Green, T. & Peloza, J. (2014). How do consumers infer corporate social responsibility? The role of organisation size. *Journal of Consumer Behaviour*, *13*(4), 282-293.

36. Grove, H., Patelli, L., Victoravich, L. M., & Xu, P. (2011). Corporate governance and performance in the wake of the financial crisis: Evidence from US commercial banks. *Corporate Governance: An International Review*, *19*(5), 418-436.

37. Hackethal, A., Schmidt, R. H., & Tyrell, M. (2005). Banks and German Corporate Governance: on the way to a capital market-based system?. *Corporate Governance: An International Review*, *13*(3), 397-407.

38. Hahn, T., Pinkse, J., Preuss, L., & Figge, F. (2015). Tensions in corporate sustainability: Towards an integrative framework. *Journal of Business Ethics, 127*(2), 297–316. doi:10.1007/s10551-014-2047-5.

39. Hakim, C. (2012). *Research design: Succesful designs for social economics research*. Routledge.

40. Hansen, S. D., Dunford, B. B., Boss, A. D., Boss, R. W., & Angermeier, I. (2011). Corporate social responsibility and the benefits of employee trust: A cross-disciplinary perspective. *Journal of business ethics*, *102*(1), 29-45.

41. Hayek, F. A. (1969). The corporation in a democratic society: in whose interest ought it and will it be run. *Business Strategy. Harmondsworth: Penguin Books*, *225*.

42. Heald, M. (1970). *The social responsibilities of business: Company and community 1900-1960*. Transaction Publishers.

43. Hoang, T. (2014, November). CSR IN BANKING SECTOR A LITERATURE REVIEW AND NEW RESEARCH DIRECTIONS. International Journal of Economics, Commerce and Management, 2(11).

44. Hoffmann, J. (2018). Talking into (non) existence: Denying or constituting paradoxes of Corporate Social Responsibility. *Human Relations*, *71*(5), 668-691.

45. Hohner, P. (2007). An overview of CSR. *Corporate Social Responsibility, An Implementation guide for business*, 1-12.

46. Jahan, N. & Shahria, G. (2021). Factors effecting customer satisfaction of mobile banking in Bangladesh: a study on young users' perspective. *South Asian Journal of Marketing*.

47. Jahn, J. & Brühl, R. (2018). How Friedman's view on individual freedom relates to stakeholder theory and social contract theory. *Journal of Business Ethics*, *153*(1), 41-52.

48. Jonathan, A. (2006). Banking Sector Efficiency in Namibia.

49. Kefis, V. & Xanthopoulou, P. (2014). Redefining CSR as an Innovative Tool in Crisis Times: the Greek Approach. *International Journal of Science and Research Methodology,* 4(4), 150-166.

50. Kostyuk, A., Kostyuk, H., Mozghovyi, Y., & Kravchenko, Y. (2013). Corporate Social Responsibility index for Ukrainian banks: The essentials for implementation. *Available at SSRN 2542097*.

51. Kotler, P. & Lee, N. (2005). Best of breed: When it comes to gaining a market edge while supporting a social cause,"corporate social marketing" leads the pack. *Social marketing quarterly*, *11*(3-4), 91-103.

52. Kvale, S. (1996). The 1,000-page question. *Qualitative inquiry*, *2*(3), 275-284.

53. Latapí Agudelo, M. A., Jóhannsdóttir, L., & Davídsdóttir, B. (2019). A literature review of the history and evolution of corporate social responsibility. *International Journal of Corporate Social Responsibility*, *4*(1), 1-23.

54. Lee, E. M., Park, S. Y., Rapert, M. I., & Newman, C. L. (2012). Does perceived consumer fit matter in corporate social responsibility issues?. *Journal of business research*, *65*(11), 1558-1564.

55. Lundgren, M. & Catasús, B. (2000). The banks' impact on the natural environment–on the space between 'what is' and 'what if'. *Business Strategy and the Environment*, *9*(3), 186-195.

56. Luo, X. & Bhattacharya, C. B. (2006). Corporate social responsibility, customer satisfaction, and market value. *Journal of marketing*, *70*(4), 1-18.

57. Maguire, M. & Delahunt, B. (2017). Doing a thematic analysis: A practical, step-by-step guide for learning and teaching scholars. *All Ireland Journal of Higher Education*, *9*(3).

58. Mayer, C. (2018). *Prosperity: Better business makes the greater good*. Oxford University Press.

59. Meho, L. I. (2006). E-mail interviewing in qualitative research: A methodological discussion. *Journal of the American society for information science and technology*, *57*(10), 1284-1295.

60. Mercer, J. J. (2003). *Corporate social responsibility and its importance to consumers*. The Claremont Graduate University.

61. Morgan, D. L. (1993). Qualitative content analysis: a guide to paths not taken. *Qualitative health research*, *3*(1), 112-121

62. Pomering, A. & Dolnicar, S. (2009). Assessing the prerequisite of successful CSR implementation: are consumers aware of CSR initiatives?. *Journal of business ethics*, *85*(2), 285-301.

63. Rita, P., Oliveira, T., & Farisa, A. (2019). The impact of e-service quality and customer satisfaction on customer behavior in online shopping. *Heliyon*, *5*(10), e02690.

64. Saeidi, S. P., Sofian, S., Saeidi, P., Saeidi, S. P., & Saaeidi, S. A. (2015). How does corporate social responsibility contribute to firm financial performance? The mediating role of competitive advantage, reputation, and customer satisfaction. *Journal of business research*, *68*(2), 341-350.

65. Sahinidis, A. G. & Kavoura, A. (2014). Exploring corporate social responsibility practices of Greek companies. *Zeszyty Naukowe Małopolskiej Wyższej Szkoły Ekonomicznej w Tarnowie*, (2 (25)), 185-193.

66. Saiz, B. S. & Pilorge, P. (2012). Understanding Customer Behavior in Retail Banking: The İmpact of the Credit Crisis Across Europe, Ernst&Young.

67. Saunders, M., Lewis, P., & Thornhill, A. (2007). Research methods. *Business Students 4th edition Pearson Education Limited, England*.

68. Saunders, M., Lewis, P., & Thornhill, A. (2012). Research Methods for Business Students. 6th edition, Pearson Education Limited.

69. Scholtens, B. (2006). Finance as a driver of corporate social responsibility. *Journal of business ethics*, *68*(1), 19-33.

70. Sirdeshmukh, D., Singh, J., & Sabol, B. (2002). Consumer trust, value, and loyalty in relational exchanges. *Journal of marketing*, *66*(1), 15-37.

71. Smprini, V.A. & Ouzouni, F.M. (2009). Financial Performance and Corporate Social Responsibility: An Empirical Investigation in the Banking Industry. International Hellenic University, pp.1-39, Assessed on 18th March 2014, available at: http://www.ihu.edu.gr/gateway/expertise/publications/pub000071.html

72. Soiferman, L. K. (2010). Compare and Contrast Inductive and Deductive Research Approaches. *Online Submission*.

73. Stanaland, A. J., Lwin, M. O., & Murphy, P. E. (2011). Consumer perceptions of the antecedents and consequences of corporate social responsibility. *Journal of business ethics*, *102*(1), 47-55.

74. Steiner, G. A. & Steiner, J. F. (1991). *Business, government and society* (pp. 230-41). New York.

75. Tauringana, V. & Chithambo, L. (2015). The effect of DEFRA guidance on greenhouse gas disclosure. *The British Accounting Review*, *47*(4), 425-444.

76. Venturelli, A., Cosma, S., & Leopizzi, R. (2018). Stakeholder engagement: An evaluation of European banks. *Corporate Social Responsibility and Environmental Management*, *25*(4), 690-703.

77. Wu, M. W., Shen, C. H., & Chen, T. H. (2017). Application of multi-level matching between financial performance and corporate social responsibility in the banking industry. *Review of Quantitative Finance and Accounting*, *49*(1), 29-63.

78. Xanthopoulou, P. (2015). How crisis affects Corporate Social Responsibility in Greece. Business *and Social Science Research Conference: Paris 2015*

The Adoption of Artificial Intelligence in Newsrooms in Kenya: a Multi-case Study

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Abstract
        The deployment of Artificial Intelligence (AI) in newsrooms is gaining prominence worldwide, with the technology being used to enhance the processes of news gathering, packaging, and distribution. The study was guided by two research questions: what factors drive/hinder(s) the adoption of AI or lack of it in newsrooms in Kenya? Moreover, what opportunities do journalists feel are offered by adopting AI in newsrooms in Kenya? A qualitative research approach and descriptive research design were employed to investigate the adoption of AI in newsrooms in Kenya. British Broadcasting Corporation (BBC-Africa) and Radio Africa Group (RAG) media organizations were the target population. As a research strategy, a multi-case method was employed. The researchers conducted in-depth interviews with newsroom-based participants. A purposive sampling technique was used to select participants for the research. Collected data were analyzed

thematically. The paper identified six factors driving the adoption of AI or lack of it: management buy-in, cost, technical skills, clarity of user case, perception, and company structure. Further, the study identified three challenges presented by adopting AI: lack of quality data, ethical concerns, and unpredictability of the technology's impact. The study concludes that AI offers excellent opportunities for newsrooms in Kenya to explore. Still, some obstacles need to be addressed before they can benefit fully from the technology. The study projects that human and automated journalism will become closely integrated in the future and recommends that newsrooms in Kenya prepare to embrace AI by laying the foundation for its adoption. Media schools should update curricula to prepare journalists to work with emerging technologies such as AI. Further research is needed to identify the specific skill sets required for Kenyan digital journalists to embrace AI fully. Scholars should investigate how AI can shape new business models given shrinking revenues in the media.

Introduction

The future and survival of news media business models depend on a company's flexibility and adaptability to emerging technologies, mainly digital technologies and artificial intelligence (AI). The tremendous advancement in communication technologies and integration of artificial intelligence in recent years has dramatically affected the news journalism ecosystems. Traditional media houses have undergone significant reorganization and modifications of newsrooms operations, field and investigative operations, news gathering and writing, and news dissemination and customer engagement by integrating AI and digital technologies. There are three levels of AI integration in media houses depending on the automation of various tasks in the three stages of the news production process: research, production, and dissemination (Munoriyarwa et al., 2021). Further, Munoriyarwa et al. posit that the three levels are: (i) Holistic AI appropriation - where most of the news production functions have been delegated to AI with limited journalist functions, (ii) Technological appropriation - where technological hardware equipped with AI features is used in news gathering but editing and writing still used by humans, and (iii) Partial appropriation - where AI is used for specific functions at different levels of the news production process, and there is considerable human-AI interaction. Most media houses in developed countries have successfully transitioned to the full and partial appropriation of AI, while in developing countries, media houses

are still struggling with integrating AI (Mutsvairo et al., 2020). Nonetheless, the technological breakthroughs in the last decade have ushered massive changes in the profession of journalism, the news-making process, and news business models. Scholars have looked at the long-term viability of traditional news media revenue models in the face of social media's expansion, market fragmentation, and a highly linked and fast-moving news sector (Dwivedi et al., 2021). Facebook, YouTube, Google, Twitter, and Instagram, as well as digital native news media platforms, have significantly impacted how news is gathered, presented, and distributed (Dowd, 2020; Harper, 2010). Indeed, in today's technology era, a news journalist competes with nearly everyone who owns a digital device and can share information. As aforementioned, the news media industry in the global north is miles and bounds ahead of the global south regarding research and the use of AI in newsrooms. However, with the technological advancement and rise of competing digital native news media, the local traditional and international traditional media houses with branches in the global south have had to "...reflect on the deeper meaning and mission of journalism, as well as the structure and ethics of the news industry in the era of AI…." (Hagendorff, 2020, p.57) within perpetually changing developing world contexts and embrace the integration of AI in news production systems albeit with varying degrees of success and challenges.

In a perpetually changing news ecosystem, embracing and integrating AI use alongside other emerging technologies in news media serves to increase profitability by increasing the efficiency of the news production process. Research has shown that traditional media houses that have been able to integrate and use AI-based news production solutions have reported improvements in producing accurate and objective news items (Pedrero-Esteban & Pérez-Escoda, 2021; Zayani, 2021). Media houses in the global south are also working to catch up with this development. There have been reports of increased use of AI in investigative and data journalism by utilizing machine learning, computer vision, speech recognition, planning, scheduling, optimization, and robotic technologies (Pedrero-Esteban & Pérez-Escoda, 2021; Zayani, 2021). Importantly, investigative and data journalists can use AI technologies like bots and drones with facial recognition to collect data and evidence from safe distances. When they have to tie the pieces of a story together to create interactive videos and infographics, they must use AI-based training programs for graphics, translations, transcription, and video editing.AI has thus been seen as a critical player in elevating the voice of the global south (Pedrero-Esteban & Pérez-Escoda, 2021; Zayani, 2021).

Studies have shown that even with digitalization and the rise of social media remains to be an essential part of public life (Bruhn et al., 2012), and the role of ethical and skilled journalism to provide factual, timely, and relevant news content is indispensable (Ward, 2018). However, digital

innovations and social media have greatly influenced public social life, including news seeking and consumption behaviors. Indeed, a new news consumer has emerged (Mitchell et al., 2016), one that wants to and can access news in the most convenient times and ways. News items come in diverse forms; weblinks, images, videos, social media posts, written articles shared through social media, Chatting apps (WhatsApp, telegram, etc.), emails, News Apps, or text messages. In this context, family, friends, and people with large social media followings, often termed influencers and celebrities play a more significant role in influencing news consumption behaviors. Despite all these changes, the present-day news consumer still inclines toward traditional news media platforms for news credibility. It, therefore, has been an issue of the traditional news media to consciously integrate audience-focus technological advances that would assure the consumer reliable, credible, and timely news content (Anger, 2018).

Although the emergence of AI and social media has altered the news media landscape and consumption, ethical and professional journalism remains critical in providing reliable, timely, and relevant news information (Nwanyanwu & Nwanyanwu, 2021). From the early times of adoption of AI and the embracement of emerging technologies by media houses in the mid-2000s, the biggest fear in the industry was the future of journalism, given that machines could be programmed to execute any function as humans (Jamil, 2021; Miroshnichenko, 2018; Munoriyarwa et al., 2021; Mutsvairo et al., 2020). Additionally, ethical questions around biased algorithms, data protection, surveillance, and privacy concerns, hacking robots, and lack of clear policies and guidelines on the use, control, and regulation of AI use, especially in the global south, continue to present socio-political barriers to AI integration (Monti, 2019). Nonetheless, AI provides invaluable opportunities for multi-disciplinary collaborations between humans and machines and across different disciplines, including IT, data science, and journalism.

Besides the challenges mentioned above and fears of AI adoption, newsrooms in the African context are affected by other factors. Poor IT infrastructure and skilled technical personnel have limited its wide application in Africa. However, this seems to be changing with emerging digital and cloud-based technologies that have brought the costs down and availability of learning opportunities for people interested in AI and computational journalism (Chege, 2022a; Kothari & Cruikshank, 2022; Mabweazara & Mare, 2021). In Africa, some news organizations have employed AI in their operations to add value to the process of gathering news and disseminating content. Zimbabwe's Controvert Media has been using robots to generate news articles and publish them on the internet (Chronicle, 2017).

East Africa's Nation Media Group (NMG) uses its website's interactive bot named Nation Kiki (NMG, 2018) to engage followers through

automated alerts and conversations. However, Kiki is no longer in use. The organization has also experimented with Augmented Reality (AR) - a prominent type of technology closely related to AI, which happened during the live unveiling of its new *Nation. Africa* platform (NMG, 2020). AR is an immersive technology in which digital elements such as images, sounds, and text are superimposed over real-life scenes (Houston, 2021). AR uses three-dimensional (3D) imagery to put one in the cinematographer's shoes. To experience it, the viewer needs to have a smartphone or an AR-enabled digital device (Pavlik, 2020). Beyond these two instances, it is unclear whether there is any more use of AI and AR in the media organization or other newsrooms in Kenya.

In this study thus, we sought to examine the barriers, facilitators, and opportunities of adopting AI and its use in the news in the African context. Specifically, we seek to answer two questions: (i) What factors drive or hinder(s) the adoption of AI or lack of it in newsrooms in Kenya? (ii) What opportunities do journalists feel are offered by adopting AI in newsrooms in Kenya?

Methodology

The study adopted a qualitative research approach. This approach helps gain fresh insights into a topic if little research is available (Akhtar, 2016). Qualitative research allowed the researchers to go beyond a surface-level comprehension of the problem to a deeper understanding. Further, it provided a chance to elicit the viewpoints and experiences of the participants, as well as get a better insight into the problem from the perspective of the study participants (Daymon & Holloway, 2010). The researchers adopted a descriptive research design. Babbie (2016) posits that descriptive research design attempts to collect data to describe phenomena, conditions, or populations methodically. It focuses on the research problem's what, when, where, and how rather than the why (Babbie, 2016). Therefore, this study's descriptive research design aided in describing the adoption of AI in newsrooms in Kenya, the factors that drive or hinders its adoption, and the opportunities journalists feel they are offered by adopting AI in the Kenyan newsrooms.

The target population for this study was personnel working in the digital departments of two media houses (BBC and RAG) in Kenya. The rationale is that AI is most likely employed in this segment. Further, the targeted media companies were chosen for the strength of their digital platforms, which include several websites and social media accounts, in addition to traditional journalistic content collecting, packaging, and publication models. The criteria for inclusion in the study were whether they have worked for at least one year as reporters (online writers, social media

journalists), sub-editors, editors (content/growth), graphic designers, and software engineers or web developers. Having this in mind, then, BBC has ten registered journalists in the "Nairobi Digital Hub" while RAG has 35 journalists (MCK, 2020). The two media enterprises' digital sections employ a total of 45 journalists. From this targeted population, 12 key interview informants were obtained (6 from BBC and six RAG). This formed the sample size of the study. Choosing an appropriate sample size in qualitative research has been a conceptual debate (Vasileiou et al., 2018). It is not straightforward, but for a diverse group such as the one targeted in this study, a sample size of between 12 to 20 is recommended (Daymon & Holloway, 2010).

Purposive sampling was utilized in the study to obtain the 12 key interview informants. Therefore, the researchers selected participants and sites to examine because they can help him/her better comprehend the research problem and core phenomena in the study (Creswell & Poth, 2018). In other words, the participants have knowledge, skills, expertise, and experience on the study problem.

The researchers employed a multi-case strategy and in-depth interviews with key informants to generate data. A case study is a methodological strategy that entails an in-depth examination of an expressly limited entity using various data gathering methods to comprehensively obtain information on how the entity runs or performs (Mills et al., 2010). Mills et al. further argue that case study research in which numerous instrumental bounded situations are selected to generate a more in-depth knowledge of the phenomenon than a single case can offer is a multiple-case study or collective case study. The study focused on two media houses operating in the same environment but with different outlooks and approaches. One of the media organizations under study has an international focus (BBC), while the other has a national outlook (RAG). Therefore, the multi-case method was suitable because it helped put the participants' experiences into perspective and helped the researchers understand the adoption of AI in the two distinct settings.

In-depth interviews were used to help better understand the extent of the adoption of AI in newsrooms in Kenya and the opportunities presented by adopting the technology. Hammond and Wellington (2012) note that the interviewing technique allows for probing perspectives and clarifying issues from the participants. This is especially useful for a subject as new as AI in newsrooms in Kenya. Interviews with the key informants were conducted until they reached saturation point by the ninth interview. However, the researchers continued until the eleventh interview to triangulate and confirm the first-hand accounts of interactions with AI systems in newsrooms. Saturation has been widely accepted as a methodological principle when conducting qualitative research (Saunders et al., 2018). It occurs when a further collection of data is

unnecessary since data is redundant, and any additional data may not lead to new themes (Given, 2016).

Data were recorded using the strategy of taking notes during the interviews. This made data analysis easier because the data was readily available and had already been sorted by the interviewer into relevant categories.

The data were analyzed using a thematic analysis technique. Data analysis is the systematic process of transcribing, compiling, coding, and publishing data so that it is understandable and available to the reader for purposes of interpretation and discussion. Address the research objectives involves assigning categories and grouping emergent topics into themes (Jwan & Ong'ondo, 2011). The following steps were included in the analysis (thematic) framework: (a) familiarisation, (b) coding and producing themes, (c) indexing and charting, and (d) mapping and interpretation. Following the analysis, the data was presented in the form of themes.

The Researchers complied with all necessary ethical research requirements. The study was conducted at BBC and RAG newsrooms within Nairobi County from June 2021 to February 2022.

Findings and Discussions

In this study, we aimed to understand the extent of the use of AI in newsrooms in Kenya, establish the factors that drive or hinder the adoption of AI in the newsrooms, and explore the opportunities that AI presents to news journalists in African contexts. In the study, we conducted in-depth interviews with 12 Key informants (journalists) drawn from two major media houses operating in Kenya. The media houses are - BBC-Africa and a locally owned Radio Africa Group. Between these two media houses, they run three television stations, seven radio stations, two newspapers, and four online news outlets. The TV stations are BBC international, Kiss TV, and East TV. BBC International is a 24-hour international news network broadcasting from Kenya and other African countries in Kenya. The Kenyan office usually covers the East, central, and horn of Africa. Kiss TV and East TV are owned by RAG and reach Kenyan urban youth and Asian communities, respectively (https://radioafricagroup.co.ke/tv-stations/). The BBC has BBC Radio and BBC Kiswahili radio stations, while the RAG runs five radio stations (Kiss 100, Classic 105, East FM, Radio Jambo, and Smooth FM). Kiss100 and Classic105, broadcast in English and targeted youths and the general population, respectively. East FM targets the Asian communities, Radio Jambo broadcasts in Kiswahili with a national listenership, and Smooth Fm targets affluent and successful women who are settled in life and focus heavily on family, health, and education (https://radioafricagroup.co.ke/radio-stations/). The BBC also has vibrant online broadcasting and interactive news

websites. RAG runs two newspapers; The Star newspaper, both online and print, and *Mpasho,* an online entertainment news outlet. Both media houses are also actively engaged in social media platforms for news outlets and audience engagement. The interviewees included reporters, editors, producers,

The use of AI in Kenyan Newsrooms

AI is gaining prominence in newsrooms in different parts of the world (De Sibandze, 2019). According to this study, newsrooms in Kenya are catching up by adopting the technology in varying degrees to meet different needs – from gathering news to packaging it to ensure that it is appealing to the users to publishing it in a manner that will attract audiences to their online platforms as has been the case in newsrooms in other countries in the world (Thurman et al., 2019). The study identified key factors that are either driving the implementation of AI or the lack of it in newsrooms in Kenya. These include management buy-in, cost, technical skills, clarity of user case, perception, and company structure. Further, the study identified three challenges presented by adopting AI: lack of quality data, ethical concerns, and unpredictability of the technology's impact. The study concludes that AI offers excellent opportunities for newsrooms in Kenya to explore. However, some obstacles must be addressed before they can fully benefit from the technology. The study projects that human and automated journalism will become closely integrated in the future and recommends that newsrooms in Kenya prepare to embrace AI by laying the foundation for its adoption.

The key informants interviewed in the study were well conversant with the term AI, recognizing it as the use of computer technologies to mimic human intelligence and perform human-like tasks without or with minimal human intervention. However, some interviewed journalists described how they use technology (AI) daily. Nevertheless, they do not recognize it as AI, highlighting a technological gap among practicing journalists. There is a disconnect between the increased AI use in producing and disseminating news while the news gathering still depends on traditional methods. Even among those who were well conversant with the use of AI, gaps in data mining and management expertise, programming, and proper integration of AI in journalism operations (from newsgathering to packaging and publishing of content) were highlighted as critical challenges. This also presented opportunities for media houses to pursue cross-collaboration between media houses, the AI, and the IT industries to improve the adoption and integration of AI in newsrooms.

When asked how AI had been used in the newsrooms, the responses from the key informants indicated that AI had been used in three main ways. One is in news gathering and content generation through identifying information trends to identify potential breaking news using flagging alerts,

data analytics, and machine learning for investigative and business news. While the respondents noted that full integration of AI use in the newsroom is/has been a slow process, they also noted that this slow integration of AI has been speeding up in the recent past. Soon survival of the news media in Kenya, and software engineers like in other countries, will depend on how best the media houses can adapt to and integrate emerging technologies in the news production processes of research, production, and dissemination (Belair-Gagnon & Revers, 2018).

The use of flagging alerts and robotic journalists (bots) has been gaining use in the recent past, especially for scanning social media and other news platforms to map potential breaking news in contexts of conflicts and recently with limited movement due to COVID-19 restrictions (Carlson, 2015; Schapals & Porlezza, 2020). Eight of the study key informants noted that AI was used to identify topics or issues that audiences are talking about online. The information was then used to craft stories likely to attract audiences to the organization's website or social media platforms. One participant pointed out that some of the tools used to achieve this goal were not owned by the specific newsrooms, such as Google Trends, which analyses the popularity of issues being searched online by users in different regions. According to one participant, their organization used tools like Data Miner and Crowd Tangle to track online conversations, reactions to specific tweets, and the pieces of information making more impressions:

> *We use the tools to look at social chatter, what people think about which tweets, and which pieces of information have gotten much attention, and then try and pick that information and then relate it to news happening in the region.*

Since the sampled media houses work across different languages and target varying populations in terms of age, education, and socio-economic status, automation – auto-translation, auto writing, and auto design - has eased the recreation of one story for different languages and contexts without having the writers or designers to make multiple templates. As one of the participants noted:

> *To replicate the English version to Kiswahili, I need to run the plugin, which translates automatically. And then, you know, I just do a few edits design-wise because maybe some languages may have run over the text.*

The adoption of AI in news gathering has eased the process of news production itself. However, this has not made humans indispensable. Careful analysis and assessment of content clarity, quality, and biases are required

with these emergent technologies (Carlson, 2015). For instance, some of the study participants for the BBC-Africa, which broadcasts in over 12 languages in the East and Horn of Africa, argued that human intervention was needed to check whether the auto-translation was successful because sometimes there could be hitches. They said that:

> *Most of our languages are wordier compared to English. So that requires the eye of the designer or the journalists. It is easier than when we had to translate content manually. However, we still have to develop language databases to help with translation. A challenge for us in Africa is that we don't have a database of the native languages we broadcast.*

This highlights a limitation of AI concerning languages and a long acknowledgment of inbuilt biases in AI technologies that easily reproduce racial, gender, and class biases. As Marconi (2020) notes, AI can make mistakes that originate from biased data that was used to train it, pointing out that the outcome of AI models is only as good as the input data. Reproduction of these biases in the news content may carry potential financial, legal, and social liabilities. However, factors determining the newsworthiness of specific contents are also deeply socio-political and difficult to encode in most AI technologies (Stray, 2019). Furthermore, this may explain why we saw only partial appropriation of AI – the use of AI for only specific purposes (Munoriyarwa et al., 2021) - in the media houses that were engaged in this study.

AI has also been instrumental in driving management, efficient interrogation, and integration of data-driven analyses and visual storytelling in newsrooms (Mutsvairo et al., 2020). In this study, data visualization and presentation appeared as the other key use of AI in newsrooms in Kenya. In this case, the respondents described how they could develop single graphic templates that are used to automatically replicate, revise and repost visual contents based on prevailing news ecosystems. For instance, during the COVID-19 pandemic, both BBC and RAG utilized in-house developed and open-source software to gather local, regional, and global updates on infection and death rates, automatically conduct statistical and thematic analysis, and create user-friendly visual infographics.

We also established that AI is used in news dissemination to enhance online audiences' engagement and interaction with content. Firstly, AI was employed to automate sharing and scheduling of content on social media. Both media houses used bots that automatically picked stories from the system and shared them on social media platforms such as Twitter, Instagram, and Facebook. According to one participant from the BBC-Africa, the tool uses an algorithm to check the traffic on the organization's main website. It picks the

most popular stories for sharing on social media. This ensures that the most relevant stories are shared to push for more online reach and attract more traffic. Secondly, AI is used to develop user-generated social media content to piece together details of how an event unfolded as reported online by eyewitnesses. As one respondent noted, this has been interesting to watch as a reporter, whereby the news consumers have been drawn in as active participants in the news-making process. However, it has necessitated the need to employ more scrutiny and verification of these contents for validity and reliability in the age of misinformation and fake news (Rashidian et al., 2019). Beyond just improving the customer experience, AI has also been used to evaluate the performance of news consumption, especially on online platforms. This was a response to changing audience consumption habits in recent years, making online engagement a key parameter for measuring newsroom performance. Before digital disruption occurred, newsrooms would measure performances by the number of newspaper copies sold and the number of people listening to the radio or watching television. However, competition for reach in the online space has made it increasingly crucial for newsroom operators in Kenya to use tools that can help in attracting traffic to their online content, retain audiences on the page, and increase their ability to share with others on social media. The use of machine learning in this context has been used in other countries to crunch large datasets on consumer trends and online behavior to evaluate user engagement and content performance and inform strategies to improve content quality.

Barriers and facilitators of adoption and use of AI in Kenyan media houses

The research identified several factors driving the adoption of AI or lack of it in newsrooms in Kenya. According to the study key informants, management buy-in (willingness of the leadership of a news organization to adopt AI) plays a massive role in determining the adoption of AI in the newsrooms. For organizations with competing priorities, sometimes AI may not be seen as a worthwhile investment primarily due to initial investment costs in terms of infrastructure, training of staff, and required reorganization of news operations. In the current precarious economic climate:

> *You find people (leadership) worried about other things right now, like being concerned about the day-to-day running and ensuring that everything works within the organization.*

One of the respondents, on the extent of adoption of AI in the newsroom, has also been influenced by the AI skepticism from mid-level management (editors and producers) who noted:

> *They are afraid that AI will replace skilled humans with invaluable experience in journalism. But we also must acknowledge that ethical and practical issues are yet to be fully addressed before fully integrating automated news-making.*

This cynicism is not new, and similar sentiments have been seen in studies in South Africa (Munoriyarwa et al., 2021) and Nigeria (Guanah et al., 2020; Nwanyanwu & Nwanyanwu, 2021). However, where company structure, leadership, and culture are open to innovation and trying novel technologies, the implementation of AI has been successful and eased the work of journalists and other production team members. For instance, automating and scheduling dissemination of news have helped tackle the challenges of limited human resources and ensured that news is delivered timely, their performance is monitored, and using robot journalists, the headlines can be edited automatically to improve users' experience.

The cost of developing, implementing, and managing AI also emerged as an important factor influencing AI adoption. As a senior manager at RAG noted, the initial cost of setting up the IT infrastructure, training and hiring the right talent, and required reorganization of the newsrooms is quite high, and the companies have to make a cost-benefit analysis to assess the feasibility of and sustainability of its use against other competing interests. For the case of BBC, adoption of the AI seemed easier since technology and skills transfer from the parent company was more accessible, while for some of the media outlets under RAG:

> *First, you must consider the return on investment in this thing? ... One of the things that I have seen from my organization as an obstacle is the cost factor.*

Indeed as (Munoriyarwa et al., 2021) noted in their study on the use of AI in South African newsrooms, media houses with well-endowed international parent companies were able to adapt and integrate a holistic use of AI than local media houses. Thus, it is unsurprising that the BBC - Africa had diverse, successful use of AI in the newsrooms compared to RAG.

The availability of people with the right technical skills to develop and manage AI systems emerged as a key factor driving the adoption of AI systems. This was because different AI models will require different skill sets. The study participants highlighted an existing gap between developers and most newsroom staff. To this end, most journalists have limited technical skills to create AI models, yet they form the most significant percentage of newsroom employees. One participant gave a glimpse of how their team is structured to factor in talent with the right technical skills:

> *This organization is a bit more equipped… our visual journalism team includes four members, three of whom are not journalists but a software developer, a social media visual artist, and the User Experience, User Interface (UX/UI) expert.*

Moreover, the talent with the right skill is in demand from other industries and not just the media, and some of those organizations have the capacity and budget to pay for the right talent. One participant narrated a particular experience with hiring a developer for their newsroom:

> *When our developer left, it took almost three years to have them replaced. And then when we got a new one, they were poached by a competitor just after four months.*

This is not only a challenge that media houses face but since the expansion of remote working, even non-media local companies and tech start-ups are competing with international companies that can offer remarkably high salaries to local talent with options for remote working (Roussi, 2021).

Finally, the study participants highlighted the need for deliberate cross-collaboration between the management, tech specialists, and journalists to promote the adoption of AI. According to one of the study participants, this would ensure all team members with diverse backgrounds and roles in the news-making process are well informed of the needs and working of the others. This will enhance creativity and skills transfer. This co-learning should extend to senior management. Njoki Chege notes in her column on the Nation Daily that retooling and reskilling editors mean nothing if senior leadership and boards do not appreciate the value of AI (Chege, 2022b).

The perception of individual journalists on the impact of AI on their jobs was also identified as a factor that can drive the implementation of AI or lack of it in newsrooms in Kenya. Most participants interviewed for this study said the digital disruption witnessed in recent years had prompted them to think beyond their traditional roles and focus on what more they could offer. This means they are more open to adopting new technologies in their work. Brokensha (2020), and Kim and Kim (2018) note that most journalists view AI as more of a friend rather than a foe and that adoption of the technology will make their work easier and help improve the quality of their reporting (Guanah et al., 2020). Some participants stated that AI could mean job losses in some sectors in the newsroom, which is in line with the argument by Lindén (2017), who observes that certain roles in the newsroom could be eliminated by large-scale application of AI. The roles that face elimination by the deployment of AI include entry-level journalism jobs such as interpreting company financial reports, interviewing the authorities, and making reports after watching sports

competitions. However, as some jobs face the threat of extinction, other jobs are also created. This finding supports Miroshnichenko's (2018) view that other jobs that were non-existent before would be created by adopting the technology (AI) in newsrooms. These roles include software engineers, data miners, analysts, and coders. This study found that some of these roles have already been created in newsrooms in Kenya that are keen on adopting AI. Some interviewees were data analysts, while others were software and web developers.

Opportunities

Despite the challenges posed by adopting AI in newsrooms in Kenya, the study also established that there are opportunities for exploration presented by the technology (AI). These opportunities are data mining and management, journalism operations from newsgathering to packaging and publishing content, and partnerships for collaborations between media houses and other organizations. Gadzala (2018) posits that the deployment of AI in the African context will depend on certain factors being put in place by the implementors:

> *Opportunities for AI in Africa remain confined to a handful of countries where critical factors for success are quickly coming together to bypass outstanding challenges and bottlenecks. These factors are converging more gradually or not at all in other African countries. Despite enthusiasm about AI being able to help African countries "leapfrog" their economic development, progress in certain areas in data availability and privacy; skills and training; in digital infrastructure must first happen before AI can be meaningfully mastered and deployed.*

This study established a gap in finding quality data to train AI models locally compared to western countries. This comes when the west is looking to countries such as Kenya to help them refine data for their AI systems. Kshetri (2020) notes that big companies in the west, such as Amazon, Microsoft, and others, are turning to develop countries such as India, the Philippines, and Kenya for data labeling to improve training for their AI models to enhance shopper's online experience and improve on technology for self-driving cars. News organizations in Kenya can jump on this opportunity to label and digitize data to implement AI for themselves and sell the data to external bodies at a profit. This study suggests that newsrooms in Kenya are well positioned to fill the gap in the lack of quality data since they have large volumes of data that can only be found in such organizations, and they can earn extra income through it.

The areas in which newsrooms in Kenya are deploying AI are few compared to how the technology is being deployed in other newsrooms located in different parts of the world. AI has been deployed to transcribe video-to-text (Norton, 2017) and deal with misinformation (Biswal & Gouda, 2020), areas where AI is yet to be deployed in Kenyan newsrooms as established by this study. AI has also been used to personalize content in newsrooms in twelve European countries, including Germany, the Netherlands, and Finland, where algorithms are being used to deliver 'tailor-made' content to users (Bodó, 2019). A robot has been deployed to read the news in China (Baraniuk, 2018), while in Zimbabwe, AI has been used to automatically generate news articles (Chronicle, 2017). Although the circumstances in newsrooms in those other parts of the world may be different from the Kenyan context, how AI has been applied indicates many potential areas where newsrooms in Kenya can explore AI. Most journalists interviewed indicated that the translation of stories, text, and videos from English to local languages or even local languages to English can come in handy in how fast the journalists write and publish stories online. The study's findings are consistent with research conducted in Pakistani newsrooms that journalists were optimistic that AI could transform the practice of journalism (Jamil, 2021). The study identified tracking social media posts and other sources for breaking or developing news stories and trending topics as a potential area where AI can be applied. The information gathered can develop news stories that resonate well with the audience and increase engagement on the channel's digital platforms.

Conclusion

The study confirms that newsrooms in Kenya are catching up with their counterparts in other parts of the world by deploying AI to enhance their news processes: from news gathering to content packaging and distribution. The deployment of AI indicates some acceptance of the technology in the newsrooms. The research forms a basis for understanding how AI has been adopted in newsrooms in Kenya and can be used to draw comparisons on the deployment of the technology in the media sector in other developing countries.

The study concludes that AI offers great opportunities for newsrooms in Kenya to explore as they navigate the disruption brought about by digital platforms in consuming content and income-generating models. However, some obstacles need to be addressed for the media organizations to benefit fully from AI. These obstacles include the cost of the technology, the lack of quality data to train AI models, and the lack of technical skills to implement and maintain the systems.

The study projects that human and automated journalism will become closely integrated in the future. Under the present circumstances, as highlighted in this study, AI may not be a threat to existing journalism roles in the newsroom due to the likely challenges that its implementation may face. This position could change as AI deployment factors become more favorable in the coming years. Adoption of the technology will be witnessed in more ways in the country's media landscape to varying degrees of success. Therefore, journalists in Kenya need to acknowledge how AI is changing the division of labor in media in other parts of the world and adequately prepare to respond when that happens. Journalists who do routine tasks which are likely to be taken up by AI can equip themselves to handle the change by gaining new skill sets and getting accustomed to roles that AI algorithms cannot perform, such as investigative reporting, in-depth analysis, interpreting data, and explaining the reasons behind certain occurrences in the society

References:
1. Akhtar, I. (2016). Research Design. *Research in Social Science: Interdisciplinary Perspectives*, 68–84. http://dx.doi.org/10.2139/ssrn.2862445
2. Anger, J. (2018). *Time to step away from the "bright, shiny things"? Towards a sustainable model of journalism innovation in an era of perpetual change*. http://digitaltransmedia.digitaltransformers.cat/wp-content/uploads/2018/12/Posetti_Towards_a_Sustainable_model_of_Journalism_FINAL.pdf
3. Babbie, E. R. (2016). *The practice of social research* (14th ed). Cengage Learning.
4. Belair-Gagnon, V., & Revers, M. (2018). 13. The Sociology of Journalism. In *Journalism* (pp. 257–280). https://doi.org/10.1515/9781501500084-013
5. Bruhn, M., Schoenmueller, V., & Schäfer, D. B. (2012). Are social media replacing traditional media in terms of brand equity creation? *Management Research Review*, *35*(9), 770–790. https://doi.org/10.1108/01409171211255948
6. Carlson, M. (2015). The Robotic Reporter. *Digital Journalism*, *3*(3), 416–431. https://doi.org/10.1080/21670811.2014.976412
7. Chege, N. (2022a, March 4). *AI technology is the lifeblood of new media*. Nation. https://nation.africa/kenya/blogs-opinion/opinion/ai-technology-the-lifeblood-of-new-media-3737200
8. Chege, N. (2022b, March 18). *Attitude change key to AI buy-in in newsrooms*. Nation. https://nation.africa/kenya/blogs-opinion/opinion/attitude-change-key-ai-buy-in-newsrooms-3753038

9. Creswell, J. W., & Poth, C. N. (2018). *Qualitative inquiry & research design: Choosing among five approaches* (4th ed). SAGE.

10. Daymon, C., & Holloway, I. (2010). *Qualitative Research Methods in Public Relations and Marketing Communications* (2nd ed.). Routledge. https://doi.org/10.4324/9780203846544

11. Dowd, C. (2020). The impacts of integrated media systems and social media in news. In *Digital Journalism, Drones, and Automation* (pp. 13–31). https://doi.org/10.1093/oso/9780190655860.003.0002

12. Dwivedi, Y. K., Ismagilova, E., Hughes, D. L., Carlson, J., Filieri, R., Jacobson, J., Jain, V., Karjaluoto, H., Kefi, H., Krishen, A. S., Kumar, V., Rahman, M. M., Raman, R., Rauschnabel, P. A., Rowley, J., Salo, J., Tran, G. A., & Wang, Y. (2021). Setting the future of digital and social media marketing research: Perspectives and research propositions. *International Journal of Information Management*, *59*, 102168. https://doi.org/10.1016/j.ijinfomgt.2020.102168

13. Given, L. M. (2016). *100 Questions (and answers) about qualitative research*. SAGE publications.

14. Guanah, J. S., Agbanu, V. N., & Obi, I. (2020). Artificial Intelligence and Journalism Practice in Nigeria: Perception of Journalists in Benin City, Edo State. In *International Review of Humanities Studies*, 5 (2), 698 – 715. https://doi.org/10.7454/irhs.v0i0.268

15. Hagendorff, T. (2020). The ethics of AI ethics: An evaluation of guidelines. *Minds and Machines*, *30*(1), 99–120. https://doi.org/10.1007/s11023-020-09517-8

16. Hammond, M., & Wellington, J. (2012). *Research Methods: The Key Concepts* (1st ed.). Routledge. https://doi.org/10.4324/9780203097625

17. Harper, R. A. (2010). The social media revolution: Exploring the impact on journalism and news media organizations. *Inquiries Journal*, *2*(03). http://www.inquiriesjournal.com/articles/202/the-social-media-revolution-exploring-the-impact-on-journalism-and-news-media-organizations

18. Jamil, S. (2021). Artificial Intelligence and Journalistic Practice: The Crossroads of Obstacles and Opportunities for the Pakistani Journalists. *Journalism Practice*, *15*(10), 1400 -1422. https://doi.org/10.1080/17512786.2020.1788412

19. Jwan, J. O., & Ong'ondo, C. O. (2011). *Qualitative Research: An Introduction to Principles and Techniques.* Eldoret, Kenya: Moi University Press.

20. Kothari, A., & Cruikshank, S. A. (2022). Artificial Intelligence and Journalism: An Agenda for Journalism Research in Africa. *African Journalism Studies*, *43*(1), 17 – 33. https://doi.org/10.1080/23743670.2021.1999840

21. Mabweazara, H. M., & Mare, A. (2021). Participatory journalism in the age of artificial intelligence, chatbots, algorithms and editorial analytics. In H. M. Mabweazara & A. Mare (Eds.), *Participatory Journalism in Africa: Digital News Engagement and User Agency in the South* (1ˢᵗ ed., pp. 65–83). https://doi.org/10.4324/9780429242908-4

22. Marconi, F. (2020). *Newsmakers: Artificial Intelligence and the Future of Journalism*. Columbia University Press. https://play.google.com/store/books/details?id=1MqWDwAAQBAJ

23. Media Council of Kenya. (2020). Status of the Media Survey, November 2020 Report. https://mediacouncil.or.ke/

24. Miguel Pedrero-Esteban, L., & Pérez-Escoda, A. (2021). Democracy and digitisation: Ethical Implications of AI in the Personalisation of Content through Voice Interfaces. *Recerca*, *26*(2). http://search.ebscohost.com/login.aspx?direct=true&profile=ehost&scope=site&authtype=crawler&jrnl=11306149&AN=152785444&h=YKaqV7wSIzQFKQV%2BhdX3sHPyRwf8r1kXNgv3emr2oFJIznwNALZDY9ezZebEvExCBDg7j80Q60oL1RyMnGl3Uw%3D%3D&crl=c

25. Mills, A. J., Durepos, G., & Wiebe, E. (Eds.). (2010). *Encyclopaedia of case study research*. SAGE Publications.

26. Miroshnichenko, A. (2018). AI to Bypass Creativity. Will Robots Replace Journalists? (The Answer Is "Yes"). *In Information,* 9(7),183. https://doi.org/10.3390/info9070183

27. Mitchell, A., Gottfried, J., Barthel, M., & Shearer, E. (2016, July 7). *The modern news consumer: News attitudes and practices in the digital era*. Pew Research Center. https://apo.org.au/node/65498

28. Monti, M. (2019). *Automated Journalism and Freedom of Information: Ethical and Juridical Problems Related to AI in the Press Field*. https://papers.ssrn.com/abstract=3318460

29. Munoriyarwa, A., Chiumbu, S., & Motsaathebe, G. (2021). Artificial intelligence practices in everyday news production: The case of South Africa's mainstream newsrooms. *Journalism Practice*, 1–19. https://doi.org/10.1080/17512786.2021.1984976

30. Mutsvairo, B., Bebawi, S., & Borges-Rey, E. (2020). *Data Journalism in the Global South*. Springer Nature. https://play.google.com/store/books/details?id=4KbNDwAAQBAJ

31. Nwanyanwu, N. C., & Nwanyanwu, M. (2021). Utilization of Artificial Intelligence in Journalism in Nigeria. *KIU Journal of Social Sciences*, *7*(2), 205–212. https://www.ijhumas.com/ojs/index.php/kiujoss/article/view/1239

32. Rashidian, N., Brown, P. D., Hansen, E., Bell, E. J., & Albright, J. R.

(2019). *Friend and foe: The Platform Press at the heart of journalism*. Columbia University. https://doi.org/10.7916/D8-15PQ-X415

33. Roussi, A. (2021, October 25). A Big Tech talent war threatens Kenya's start-ups. *Financial Times*.

34. Saunders, B., Sim, J., Kingstone, T., Baker, S., Waterfield, J., Bartlam, B., Burroughs, H., & Jinks, C. (2018). Saturation in qualitative research: exploring its conceptualization and operationalization. *Quality and Quantity*, *52*(4), 1893–1907. https://doi.org/10.1007/s11135-017-0574-8

35. Schapals, A. K., & Porlezza, C. (2020). Assistance or resistance? Evaluating the intersection of automated journalism and journalistic role conceptions. *Media and Communication*, *8*(3), 16–26. https://doi.org/10.17645/mac. v8i3.3054

36. Stray, J. (2019). Making Artificial Intelligence Work for Investigative Journalism. *Digital Journalism*, *7*(8), 1076–1097. https://doi.org/10.1080/21670811.2019.1630289

37. Thurman, N., Lewis, S. C., & Kunert, J. (2019). Algorithms, Automation, and News. *Digital Journalism*, *7*(8), 980–992. https://doi.org/10.1080/21670811.2019.1685395

38. Vasileiou, K., Barnett, J., Thorpe, S., & Young, T. (2018). Characterising and justifying sample size sufficiency in interview-based studies: systematic analysis of qualitative health research over a 15-year period. *BMC Medical Research Methodology*, *18*(1), 1 - 18. DOI: 10.1186/s12874-018-0594-7

39. Ward, S. J. A. (2018). *Ethical Journalism in a Populist Age: The Democratically Engaged Journalist*. Rowman & Littlefield. https://play.google.com/store/books/details?id=pbRqDwAAQBAJ

40. Zayani, M. (2021). Digital Journalism, Social Media Platforms, and Audience Engagement: The Case of AJ+. *Digital Journalism*, *9*(1), 24 - 41. https://doi.org/10.1080/21670811.2020.1816140

Relación entre las Habilidades Blandas y la Inserción Laboral de Egresados de Ingeniería Industrial del Tecnológico de Tierra Blanca

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Resumen

El desarrollo de habilidades blandas es un desafío actual para las instituciones educativas quienes preparan a los futuros profesionistas que se insertarán al campo laboral. La inserción laboral se reconoce como el proceso de incorporación a la actividad económica, en el caso de los jóvenes, constituye un tema de especial preocupación en los gobiernos de todos los niveles debido a que las tasas de desempleo juvenil reflejan una incapacidad del mercado para absorber la nueva mano de obra que aportan los jóvenes dejándolos en posición vulnerable. El objetivo de la investigación es analizar

la relación que guardan las habilidades blandas con la inserción laboral de los egresados de Ingeniería Industrial del Tecnológico Nacional de México campus Tierra Blanca. Los autores realizan un estudio con enfoque cuantitativo no experimental (observacional), descriptivo, correlacional, comparativo y de corte transversal. Aplican, a una muestra de 105 egresados, un instrumento elaborado con base en la literatura, integrado de 27 ítems, 7 de información sociodemográfica y 20 con escala de Likert, validado por juicio de 5 expertos en recursos humanos; con una fiabilidad de 0.901 dada por el alfa de Cronbach. Utilizan la prueba de correlación de Spearman para validar la relación entre habilidades blandas e inserción laboral y pruebas de comparación (U-Mann Whitney) entre inserción laboral y variables sociodemográficas. Los resultados presentan una relación entre habilidades blandas e inserción laboral de $r_s = 0.442$ y $p < 0.01$. Las pruebas de comparación muestran que no existe diferencia entre inserción laboral y sexo $U=1104$ y $p > 0.05$; inserción laboral y titulación $U=1349$ y $p > 0.05$; y no existe relación entre inserción laboral y edad $r_s = -0.008$ y $p > 0.05$. Se concluye que las habilidades blandas (habilidades cognitivas, interpersonales y el control emocional) influyen moderadamente en la inserción laboral sumando al hecho de ser referentes para los empleadores actualmente. El sexo, la titulación y la edad no influyen en la inserción laboral, permitiendo igualdad de oportunidades.

Palabras clave: Habilidades blandas, inserción laboral, mercado laboral, empleadores, profesionistas

Relationship between the Soft skills and the Labor Insertion of Industrial Engineering Graduates from Technological of Tierra Blanca

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Abstract
　　The development of soft skills is a current challengue for educational institutions who prepare future professionals who will enter the labor field. Labor insertion is recognized as the process of incorporation into economic activity, in the case of young people, it is an issue of special concern in governments at all levels because youth unemployment rates reflect an inability of the market to absorb the new workforce provided by young people, leaving them in a vulnerable position. The objective of the research is to analyze the relationship between soft skills and the labor insertion of Industrial Engineering graduates from National Technological of Mexico, campus Tierra Blanca. The authors carry out a study with a non-experimental (observational) quantitative approach, descriptive, correlational, comparative, and cross-sectional. They apply to a sample of 105 graduates, an instrument elaborated based on the literature, integrated with 27 items, 7 of sociodemographic information and 20 with Likert scale, validated by the judgment of 5 experts in human resources; with a reliability of 0.901 given by the Cronbach's alpha. They use Spearman's correlation test to validate the relationship between soft skills and labor insertion and comparison test (U-Mann Whitney) between labor insertion and sociodemographic variables. The results present a relationship between soft skills and labor insertion of $r_s=0.442$ and $p<0.01$. The comparison tests show that there is no difference between labor insertion

and sex U=1104 and p>0.05; labor insertion and degree U=1349 and p>0.05; and there is no relationship between labor insertion and age r_s=-0.008 and p>0.05. It is concluded that soft skills (cognitive skills, interpersonal skills, and emotional control) moderately influence labor insertion, adding to the fact that they are currently references for employers. Sex, degree, and age do not influence labor insertion, allowing equal opportunities.

Keywords: Soft skills, labor insertion, labor market, employers, professionals

Introducción

Los cambios del mundo actual auspiciados en gran parte por los avances tecnológicos y la competencia, exigen organizaciones flexibles y con respuesta rápida de adaptación. Las organizaciones, sin importar su giro, deben reestructurar su gestión estratégica para que ante la incertidumbre se empodere a la organización, se beneficie a los colaboradores y se maximice la productividad; el camino para ello apunta a una mejora en el talento humano (Colina y Albites, 2020).

Las habilidades blandas, como constructo, aparecieron en los años noventa con términos tales como "habilidades del siglo XXI", "competencias del siglo XXI" y "nuevas habilidades básicas" (Murnane y Levy, 1996; Pellegrino y Hilton, 2012; Soland, Hamilton y Stecher, 2013; como se citan en García 2018); "habilidades blandas o *soft skills*" fueron los últimos términos en hacer su aparición (Hekman y Kautz, 2012). Todos estos términos hacen alusión a aquellas habilidades que pueden hacer la diferencia entre un trabajador exitoso y otro que no lo es. Las habilidades blandas también se denominan habilidades no cognitivas, habilidades socioemocionales, habilidades relacionales, competencias nucleares, habilidades transversales, habilidades genéricas o competencias para la empleabilidad y representan a aquellas capacidades adaptativas, cognitivas y comportamentales por medio de las cuales las personas se desenvuelven y responden a las necesidades de los contextos sociales, culturales e históricos en los que se mueven (Ortega *et al*., 2016).

Anteriormente, las organizaciones se enfocaban en las habilidades duras (*hard skills*, de naturaleza técnica y facilidad de evaluar en un periodo corto), sin embargo, a medida que enfrentan un campo de batalla competitivo cambiante, las necesidades del conjunto de habilidades de los empleados también están evolucionando (Espinoza y Gallegos, 2020), de tal manera que los empleadores exigen más requisitos al momento de contratar personal y no basta solo el conocimiento sino también tener desarrolladas las habilidades blandas (*soft skills*) (Canossa, 2019), dichas habilidades comprenden la de comunicación interpersonal que permiten a los empleados trabajar y comprender a los miembros del equipo (Dean y East, 2019) entre otras.

Los resultados de una encuesta realizada a 192 altos ejecutivos de América Latina (Fiszbein *et al.*, 2016), mostraron que los empleadores perciben a las habilidades blandas como importantes y valiosas de tal manera que se presenta una relación directamente proporcional que se resume a mayores habilidades blandas que posee un candidato mayores y mejores serán sus perspectivas de empleo (García, 2018), esta percepción sobre las habilidades blandas también se encontró en 2,832 empleadores en nueve países (Alemania, Arabia Saudita, Brasil, Estados Unidos, India, Marruecos, México, Turquía y Reino Unido) quienes calificaron a la capacidad para trabajar en equipo y las habilidades de comunicación oral como las más importantes que deben tener los empleados (Fiszbein *et al.*, 2016), con respecto al salario se llega a presentar una diferencia de hasta dos dólares por día entre los trabajadores que tienen y los que no tienen estas habilidades (Acosta *et al.*, 2017).

La literatura ofrece estudios cuyos resultados muestran una falta de alineación entre las necesidades del mercado laboral y las habilidades desarrolladas por los profesionistas que buscan insertarse en el mismo; también se encuentran estudios que apuntan a que las habilidades blandas son necesarias para el éxito en la inserción laboral (Pieterse y Van Eekelen, 2016; Ávalos *et al*., 2021). El Instituto Global McKinsey predice que, para el 2030 en Estados Unidos y Europa Occidental, disminuirá la demanda de trabajos que requieran capacidades manuales y cognitivas básicas y aumentará la demanda de aquellos que requieran capacidades cognitivas avanzadas y socioemocionales (Blázquez, Masclans y Canals, 2019); es decir, los profesionales que cuenten con habilidades blandas tendrán mayor posibilidad laboral.

Para Cobo y Moravec (2011), las habilidades blandas se erigen como pilar fundamental para los procesos de inserción laboral generando un especial interés en seleccionar a profesionistas con habilidades tales como liderazgo, comunicación, que practiquen valores y sepan trabajar en equipo (Tito y Serrano, 2016).

De acuerdo con Blanco (2010), la inserción laboral es el acceso al mercado de trabajo, involucra el proceso de transición de la vida de formación (académica) a la productiva (García y Cárdenas, 2018). En tal proceso convergen la empleabilidad y la ocupabilidad.

La empleabilidad supone la probabilidad de inserción laboral mediante las características que presentan las personas que pretenden ocupar una vacante, pudiendo también definirse como la oportunidad de acceder a un empleo que cumpla con las expectativas, formación y trayectoria profesional del postulante (Mamani, 2019). Desde el punto de vista empresarial se usa como herramienta para evaluar la idoneidad de un candidato para un puesto de trabajo determinado (Bermúdez *et al*., 2020). La ocupabilidad se define

como la posibilidad de inserción dependiendo las oportunidades en el mundo laboral. De manera resumida puede decirse que la empleabilidad está enfocada en la persona y sus características y la ocupabilidad en el contexto.

La inserción laboral de los jóvenes se constituye un tema de especial preocupación en los gobiernos de todos los niveles (García y Cárdenas, 2018), originando la intervención de diferentes organismos supranacionales quienes buscan generar economías competitivas (Ruíz, 2006; OCDE, 2012) para el crecimiento económico y social en donde la educación superior se identifica como ámbito clave (Moreno y Ruíz, 2009; Briceño, 2010; Caballero *et al*., 2014; Barragán, nd). La inserción de jóvenes al mercado laboral afecta un significativo grupo de egresados universitarios quienes al culminar sus estudios enfrentan dificultades para ingresar oportunamente a éste (Pineda y Moreno, 2019). Los inconvenientes de los universitarios para encontrar un empleo los han convertido en un colectivo altamente vulnerable que, en ocasiones, puede verse abocado a la exclusión social (Izquierdo, Escarbajal y Latorre, 2016). Las tasas de desempleo juvenil reflejan una incapacidad del mercado para absorber la nueva mano de obra que aportan los jóvenes (Zuñiga y Soriano, 2019), mundialmente, van en incremento reportando una alza significativa en el año 2020 en comparación cifras de años anteriores (DANE, 2020; Jiménez *et al*., 2020). De acuerdo con el Banco Interamericano de Desarrollo (BID) muchos de los jóvenes que intentan vincularse al mercado laboral fallan en su intento por dos causas principalmente: no contar con los requerimientos básicos del sector productivo y la forma de búsqueda de empleo. La primera debido a que los sistemas educativos poseen grandes deficiencias la segunda por basarse principalmente en métodos informales como contactos personales (Serna *et al.*, 2019).

En el contexto actual del mercado laboral, los empleadores buscan en los nuevos profesionistas las habilidades favorables y funcionales a la productividad de sus instituciones para contratarlos y aprovechar las ventajas que estos ofrecen. Por su parte, las universidades deben identificar los factores que facilitan la inserción laboral de sus egresados y contribuir a que ésta se dé de manera eficiente (Martínez y González, 2019; Pérez y Pinto, 2020) traduciendo dichos factores en una gestión de programas pertinentes que doten de formación competente a los futuros profesionistas (Macianskiene, 2016). Los estudios de inserción laboral se convierten en poderosas fuentes de información al generar conocimiento sobre las necesidades y opiniones que al respecto de la formación de los estudiantes demandan los empleadores, por supuesto, es importante señalar que dichas necesidades están en constante cambio como consecuencia de los avances tecnológicos, la competencia en el mercado globalizado y hasta los acontecimientos de salud como la reciente pandemia COVID-19.

Tres estudios europeos interesantes sobre el análisis de la inserción laboral son Careers after Higher Education: A European Research Survey (CHEErS), Research on the Flexible Professional in the Knowledge Society (REFLEX) y The Professional Flexible in the Knowledge Society (PROFLEX). Dichos estudios permiten conocer lo que sucede con los graduados en el mercado laboral y brindan información en tres vertientes: 1) Mejora de la calidad de las organizaciones de educación superior; 2) Inserción laboral y 3) Enfoque de la formación por competencias (Carot *et al*., 2011; García y Cárdenas, 2018).

La vinculación entre inserción laboral y organizaciones de educación radica en que las segundas deben gestionar a la primera a través de acciones encaminadas a fomentar las competencias tanto duras como blandas (*hard skills* y *soft skills*) entre su alumnado de tal manera que al concluir su formación académica éste puede acceder a oportunidades de empleo (Martínez y González, 2019).

A pesar de los numerosos estudios que han abordado el tema de habilidades blandas e inserción laboral, mismos que van dejando evidencia empírica sobre la importancia de éstas para una adecuada inserción laboral, el camino que indique específicamente cuáles son las habilidades blandas requeridas por carrera es un campo poco o nada explorado (Ibarrarán *et al*., 2014; Espinoza y Gallegos, 2019; Hernández y Neri, 2020; Capcha y Rodríguez, 2020).

La presente investigación tiene como objetivo analizar la relación que guardan las habilidades blandas con la inserción laboral de los egresados de la carrera de Ingeniería Industrial del Tecnológico Nacional de México campus Tierra Blanca.

Métodología

Se realizó una investigación con enfoque cuantitativo no experimental (observacional), bajo un estudio descriptivo, correlacional, comparativo y de corte transversal en un grupo de egresados de Ingeniería Industrial del Tecnológico Nacional de México campus Tierra Blanca para analizar la relación entre habilidades blandas e inserción laboral. Los participantes fueron los (las) ingenieros industriales cuyas generaciones se graduaron en 2019 y 2020, elegidos de manera intencional no probabilística; se conformó un grupo de 105 egresados.

Se elaboró un instrumento estructurado con base en información obtenida de repositorios académicos como Redalyc, Recolecta, Scielo, Sciendo, SSRN, Google Académico, etc., posteriormente fue enviado para su revisión y validez de contenido a cinco expertos en el área de recursos humanos cuya experiencia laboral en la administración de personal oscila entre los 8 y 12 años, cuentan con maestría y doctorado y actualmente se

encuentran activos en dicha área. El juicio de los expertos avaló que el instrumento tiene claridez, coherencia, relevancia y suficiencia (Escobar y Cuervo, 2008).

El instrumento contiene dos secciones; la primera corresponde a información sociodemográfica de los participantes, tales como edad, situación laboral, empresa donde labora, nivel jerárquico que ocupa, dirección de la empresa; con un total de siete ítems. La segunda sección comprende 20 ítems distribuidos en dos factores: inserción laboral (empleabilidad y ocupabilidad) y habilidades blandas (habilidades cognitivas, habilidades interpersonales y habilidades para el control emocional) con Escala Likert de cinco opciones de respuesta, 5. Totalmente de acuerdo, 4. De acuerdo, 3. Ni en desacuerdo ni de acuerdo, 2. En desacuerdo, 1. Totalmente en desacuerdo.

La fiabilidad del instrumento fue validada con el coeficiente Alpha de Cronbach con resultado de 0.901 (Tabla 1).

Tabla 1. *Análisis de confiabilidad*

Estadísticas de confiabilidad de la escala	
	Crobach's α
Escala	0.901

El instrumento fue aplicado a los egresados durante los meses de septiembre y octubre 2021. Al término de la recopilación de datos se procedió a la captura y análisis de la información, para examinar los resultados obtenidos se aplicó la prueba de normalidad verificando que los datos no tiene una distribución normal; se utilizó la prueba de correlación de Rho de Sperman para corroborar las relaciones y la pruena U de Mann Whitney para validar las diferencias significativas. Para las pruebas de normalidad se utilizó el SPSS v. 23 y para obtener los estadísticos de frecuencia, correlación y pruebas de comparación el programa Jamovi v. 2.2.5 (para Mac OSX).

Resultados

La proporción por género de los participantes fue de 62 hombres (59 %) y 43 mujeres (41 %) (Tabla 2), con una edad promedio de 26.8 (DE=3.85) Valor mínimo de 21 y valor máximo de 46, (Tabla 3). De ellos, 76 (72.4 %) se encuentran laborando y 29 (27.6 %) no lo están, de los que están laborando 35 (46 %) están titulados y 41 aún no tramitan su título (54 %) (Tabla 4). De los que están laborando y no están titulados, 3 se encuentran en puestos gerenciales y 9 en puestos de jefatura.

Tabla 2. *Frecuencias de género*

Nivel	Conteo	% de Total	% Acumulativo
Hombre	62	59.0	59.0
Mujer	43	41.0	100.0

Tabla 3. *Descriptivos de edad*

	Edad
N	105
Perdidos	0
Media	26.8
Media de error estándar	0.376
Mediana	26
Moda	25
Desviación estándar	3.85
Mínimo	21
Máximo	46

Tabla 4. *Frecuencia de participantes que se encuentran laborando con su nivel jerárquico y su estatus de titulación*

Laborando	Nivel jerárquico	Titulado	
		Sí	No
Sí	Técnico	10	11
	Otro	11	18
	Jefatura	12	9
	Gerencia	2	3

En pruebas de normalidad se obtuvo un valor de p <0.05 que demuestra que los datos se distribuyen de forma no normal (Tabla 5).

Tabla 5. *Pruebas de normalidad*

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Estadístico	gl	Sig.	Estadístico	gl	Sig.
IL	.149	105	000	.970	105	.017
HB	.105	105	.006	.935	105	.000
a. Corrección de significación de Lilliefors						

Para validar la hipótesis de la relación entre las variables de habilidades blandas e inserción laboral se utilizó una Correlación de Spearman. Siendo la hipótesis alternativa:

Ha: Existe una relación significativa entre habilidades blandas e inserción laboral en los egresados de Ingeniería Industrial del campus Tierra Blanca.

Los resultados indican que existe una relación media entre las variables habilidades blandas (HB) e inserción laboral (IL) con una correlación positiva de 0.442 (Tabla 6).

Tabla 6. *Matriz de correlación*

Correlation Matrix			
		IL	HB
IL	Spearman's rho	_	
	p-value	_	
HB	Spearman´s rho	0.442	_
	p-value	<.001	_

Para identificar las diferencias estadísticamente significativas se utilizaron pruebas de comparación (U-Mann Whitney) entre inserción laboral y las variables sociodemográficas de los 105 egresados de la carrera de ingeniería industrial del campus Tierra Blanca.

La inserción laboral (IL) con base en el género de los egresados (Tabla 7), no mostró diferencias estadísticamente significativas entre la mediana de los hombres y mujeres. U=1104 y valor de p>0.05 (Tabla 8).

Tabla 7. *Descriptivos de grupo: Género*

	Grupo	N	Media	Mediana	SD	SE
IL	Masculino	62	11.1	11.0	2.07	0.262
	Femenino	43	10.4	11.0	1.93	0.294

Tabla 8. *Prueba T de muestras independientes (IL vs Género)*

		Statistic	p	Mean difference	SE difference
IL	Mann-Whitney U	1104	0.131	1.000	

Así mismo, la IL con el status de titulación, no presentó diferencia significativa entre los egresados de la carrera de Ingeniería Industrial que están titulados y los que no están titulados (Tabla 9). U= 1349 y valor de p>0.05 (Tabla 10).

Tabla 9. *Descriptivos de grupo: Estatus de titulación*

	Grupo	N	Media	Mediana	SD	SE
IL	No titulado	57	10.8	11.0	2.08	0.275
	Titulado	48	10.8	11.0	2.00	0.288

Tabla 10. *Prueba T de muestras independientes (IL vs Estatus de titulación)*

		Statistic	p	Mean difference	SE difference
IL	Mann-Whitney U	1349	0.904	-278e-5	

Para identificar la relación entre inserción laboral y la variable sociodemográfica de edad se utilizó la prueba de correlación (Rho Spearman). Identificando que entre la inserción laboral y la edad no existe una relación significativa (valor de p>0.05) (Tabla 11).

Tabla 11. *Matriz de correlación de inserción laboral y edad*

Correlation Matrix			
		Edad	IL
Edad	Pearson´s r	—	
	p-value	—	
	Spearman´s rho	—	
	p-value	—	
IL	Pearson´s r	-0.053	—
	p-value	0.589	—
	Spearman´s rho	-0.008	—
	p-value	0.935	—

Discusión

La presente investigación contribuye con los estudios que analizan las habilidades blandas y la inserción laboral. El hallazgo de correlación positiva media entre habilidades blandas e inserción laboral coincide con los resultados de Capcha *et al.* (2020) y con los del Banco Mundial en su programa Programa Skills Toward Employability and Productivity (STEP) (Banco Mundial citado por Ávalos *et al.*, 2021).

El resultado del estudio con la correlación positiva abona a la causa de que las habilidades blandas son importantes para el éxito académico y de la vida, y pueden marcar la diferencia cuando los ingenieros jóvenes buscan oportunidades de trabajo en el mercado (López *et al.*, 2018; Hernández y Neri, 2020).

El estatus de titulación, se encontró, no está haciendo diferencia al momento de la inserción, situación semejante a la encontrada por Rusell y García (2015), ni tampoco parece ser referente importante para escalar dentro de las organizaciones. De la muestra estudiada en la presente investigación, el 54% de los egresados que se encuentran laborando no cuenta con título profesional y en el nivel gerencia se tienen más ingenieros industriales sin título que con él, esto lleva a replantear el proceso para la titulación y cuestionarse qué tan accesible es, cuáles son las áreas de oportunidad que deben aprovecharse dado que el indicador de eficiencia terminal es uno de los más valorados en una organización educativa y sin embargo al estudiantado, una vez insertado en el mercado laboral, y a los empleadores parece tener sin cuidado.

El sexo tampoco está siendo un referente de importancia para la inserción y coincide con los resultados de Gimeno *et al.* (2019) e Izquierdo y Farías (2018), lo que significa que los esfuerzos por la no discriminación están haciendo eco entre los empleadores permitiendo igualdad de oportunidades tanto a hombres como mujeres. Es importante señalar la relevancia de este hallazgo dado que los sujetos estudiados corresponden a una profesión tradicionalmente considerada para varones.

La edad no presenta diferencia significativa lo que sin duda se traduce en buenas noticias para la población adulta en cuanto a que las vacantes parecen apuntar hacia necesidades que poco o nada tienen que ver con esta variable ofreciendo igualdad en la oportunidad de competencia.

Conclusion

Los resultados del estudio mostraron que existe una relación media entre las variables habilidades blandas e inserción laboral, revelando la importancia de la reestructuración de programas de estudio de las Instituciones de Educación Superior que permitan la provisión y adquisición de las

habilidades blandas, principalmente para Instituciones de Educación Superior Tecnológica en donde existe mayor énfasis en las habilidades duras.

Trabajos a futuro

Partiendo de los resultados obtenidos en esta investigación se tiene que las habilidades blandas y la inserción laboral guardan relación moderada con una correlación positiva media por lo que se plantean diversas líneas de investigación futuras que sirvan de guía para sumar a la causa de la evidencia empírica dado que las habilidades blandas no son los únicos factores que pueden favorecer a la inserción de los egresados en el mercado laboral se requiere de un mayor análisis al respecto. Dentro de los factores que se han estudiado como favorecedores de la inserción laboral están los académicos formativos (Sifuentes, 2022); política nacional, calidad educativa, la red de contactos (Rusell y García, 2015), entre otros.

También resultará interesante, a partir de este trabajo, continuar con el estudio de las habilidades blandas en ingenieros industriales cuyos resultados sean mucho más específicos y de referencia a la gestión de tal carrera.

References:

1. Acosta, P., Igarashi, T., Olfindo, R., y Rutkowski, J. (2017). Demand for Socioemotional Skills in the Philippine Labor Market. *Developing Socioemotional Skills for the Philippines' Labor Market*, 21-34. DOI: 10.1596/978-1-4648-1191-3_ch2.
2. Ávalos, I., Patzi, S. y Bedregal, J. (2021). Aproximación a las habilidades blandas para la inserción profesional en ecosistemas creativos. *Compás Empresarial, 11*(33), 1-18. DOI: 10.52428/20758960.v11i33.158
3. Barragán, J. (nd). Impacto que tiene la inversión en Educación Superior sobre el Desarrollo Económico: Factor Crítico de Progreso Economico. *Daena: International Journal of Good Conscience 5*(1), 47- 57.
4. Bermúdez, E., Pérez, E. y Campos, B. (2020) Orientación profesional para la adquisición de las competencias laborales. *Revista Inclusiones, 7*(2), 40-74.
5. Blanco, J. (2013). Análisis de la inserción laboral de los egresados en pedagogía de la Universidades Catalanas. Barcelona: Economics feducation.
6. Blázquez, M., Masclans, R. y Canals, J. (2019). El futuro del empleo y las competencias profesionales del futuro: la perspectiva de las empresas. IESE Business School University of Navarra.

7. Briceño, A. (2010). La educación y su efecto en la formación del capital humano y el desarrollo económico de los países. *Apuntes del CENES, 30*(51), 45-59.

8. Caballero, G., López, J. y Lampón, J. (2014). La universidad y su implicación con la empleabilidad de sus graduados. *Revista Española de Investigaciones Sociológicas, 146*, 23- 46. DOI: 10.5477/cis/reis.146.23

9. Canossa, H. (2019). Habilidades blandas en el estudiantado universitario y la empleabilidad en Costa Rica. *Revista Académica Arjé, 2*(2), 5-13.

10. Capcha, D. y Rodríguez, G. (2020). Habilidades blandas e inserción laboral en egresados de la carrera profesional de Administración de Negocios FACAP-Tarma periodo 2016-2018. [Tesis de licenciatura] Universidad Nacional del Centro del Perú.

11. Carot, J., Conchado, A., Ginés, J. y Villa, L. (2011). La opinión de los graduados europeos sobre la universidad cinco años después de haber finalizado sus estudios. *Revista de Sociología, 96*(4), 1269-1285.

12. Cobo, C. y Moravec, J.W. (2011). Aprendizaje Invisible hacia una nueva ecología de la educación, 1a Ed., 1-239, Collección Transmedia XXI, Barcelona, España.

13. Colina, F. y Albites, J. (2020). Aprendizaje e innovación: retos en las organizaciones del siglo XXI. Desde el Sur, 12(1), 167-176. DOI: 10.21142/DES-1201-2020-0011

14. Dirección de Impuestos y Aduanas Nacionales (2020). ABC Mercado laboral. https://www.dane.gov.co/index.php/estadisticas-por-tema/mercado-laboral

15. Dean, S. y East, J. (2019). Soft skills needed for the 21st-Century workforce.17.

16. Escobar, J. y Cuervo. A. (2008). Validez de contenido y juicio de expertos: una aproximación a su utilización. *Avances en Medición*, 1(6), 27-36.

17. Espinoza, M. y Gallegos, D. (2020). Habilidades blandas en la educación y la empresa: Mapeo sistemático. *Revista Científica Uisrael, 7*(2), 41-58.

18. Fiszbein, A., C. Cosentino, y Cumsille B. (2016). *El desafío del desarrollo de habilidades en América Latina: Un diagnóstico de los problemas y soluciones de política pública.* Washington, dc: Diálogo Interamericano-Mathematica Policy Research.

19. García, B. (2018). Las habilidades socioemocionales, no cognitivas o "blandas": aproximaciones a su evaluación. *Revista Digital Universitaria, (19)*6, 1-17. DOI: 10.22201/codeic.16076079e.2018.v19n6.a5

20. García, M. y Cárdenas, E. (2018). La insercion laboral en la Educación Superior. La perspectiva latinoamericana. *Educación XXI, 2*1(2), 323-347. DOI: 10.5944/educXX1.16209

21. Gimeno, P., Gasull, V. y Savini, C. (2019). Estudio de la inserción laboral de las egresadas de las carreras de ingeniería. De las expectativas a la realidad. Segundo Congreso Latinoamericano de Ingenierías. Retos de la formación de ingenieros en la era digital. Cartagena de Indias, Colombia.

22. Heckman, J. y Katz, T. (2012). Hard evidence on soft skills (National Bureau of Economic Research Working Paper 18121). DOI: https://doi.org/10.3386/w18121.

23. Hernández, C. y Neri, J. (2020). Las habilidades blandas en estudiantes de ingeniería de tres instituciones públicas de educación superior. *RIDE Revista Iberoamericana para la Investigación y el Desarrollo Educativo, 10*(20), 1-24. DOI: 10.23913/ride.v10i20.678

24. Ibarraran, P., Ripani, L., Toboada, B., Villa, J. y García, B. (2014). Life skills, employability and training for disadvantaged youth: Evidence from randomized evaluation design. *IZA Journal of Labor & Development, 3*(1), 10.

25. Izquierdo, T., Escarbajal, A. y Latorre, A. (2016). Motivaciones que condicionan la formación y previenen la exclusión social de los futuros educadores. *Revista de Investigación Educativa, 34*(2), 385-397.

26. Izquierdo, T. y Farías, A. (2018). Empleabilidad y expectativa de logro en la inserción laboral de los estudiantes universitarios. *REOP, 29*(2), 29-40.

27. Jiménez, C., Peralta, J., Sánchez, E., Olvera, I. y Aceves, D. (2020). La situación del mercado laboral en México antes y durante la COVID-19. *Revista Internacional de Salarios Dignos, 2*(2), 1-14.

28. Macianskiene, N. (2016). Development of transversal skills in content and language integrated learning classes. *European Scientific Journal*, *1*2(1), 1-11. DOI: 10.19044/esj.2016.v12n1p 129

29. Mamani, O. (2019). Competencias e inserción laborales de los egresados de la Universidad de Moquegua 2012 al 2015. *Sincretismo*, 1, 35-42.

30. Martínez, P. y González, C. (2019). Competencias personales y participativas vinculantes a la inserción laboral de los universitarios: validación de una escala. *RELIEVE. Revista Electrónica de Investigación y Evaluación Educativa, 25*(1), 1-19. DOI: 10.7203/relieve.25.1.13164

31. Moreno, J. y Ruíz, P. (2009). *La Educación Superior y el desarrollo económico en América Latina*. México: Naciones Unidas, CEPAL.

32. OCDE (2012). *Better skills, Better jobs, Better lives: A Strategic Approach to skills Policies*. Publicación de la OCDE. DOI: 10.1787/9789264177338-en

33. Ortega, C., Febles, J., y Estrada, V. (2016). Una estrategia para la formación de competencias blandas desde edades tempranas. *Revista Cubana de Educación Superior, 35*(2), 35-41.

34. Pérez, O. y Pinto, R. (2020). Determinantes de la inserción laboral en egresados universitarios en México. *RIDE. Revista Iberoamericana para la Investigación y el Desarrollo Educativo, 11*(21), 1-16. DOI:10.23913/ride.v11i21.732

35. Pieterse, V. and van Eekelen, M. (2016). Which Are Harder? Soft Skills or Hard Skills? In Gruner, S. (ed.), *ICT Education. SACLA 2016* (pp 160-167). Cham, Switzerland: Springer. Retrieved from DOI: 10.1007/978-3-319- 47680-3_15

36. Pineda R. y Moreno, G. (2019). Instrumentos para la determinación de los factores de la inserción laboral en estudiantes universitarios. *Revista Científica Hallazgos21, 4*(2), 173-189.

37. Ruíz, M. (2006). la universidad y el mercado del aprendizaje claves para comprender el concepto de competencia. En M.A. Murga y M.P. Quicios (Coord.), La reforma de la Universidad. Cambios exigidos por la nueva Europa. (pp. 93-114). Madrid: Dykinson.

38. Rusell, L. y García, L. (2015). La importancia del diseño de estrategias congruentes con el contexto local para incrementar la inserción laboral de jóvenes: un análisis de impacto de redes sociales en el sureste de México. *European Scientific Journal*, 3, 87-96.

39. Serna, H., Alzate, J., Ramírez, D. y Castro, E. (2019). La inserción laboral de los jovénes en Colombia. Retos y perspectivas. *Revista Jurídicas, 16*(1), 42-61. DOI: 10.17151/jurid.2019.16.1.4.

40. Sifuentes, M. (2022). *Factores académico–formativos que se relacionan con la inserción laboral del estudiante de la facultad de ciencias de la educación de la Universidad Nacional de San Agustín, Arequipa, Perú, 2020* [Tesis doctoral, Universidad Nacional de San Agustín Arequipa]. Repositorio institucional de la UNSA http://repositorio.unsa.edu.pe/handle/20.500.12773/14077

41. Tito, M., y Serrano, B. (2016). Desarrollo de soft skills una alternativa a la escasez de talento humano. INNOVA, *Research Journal, 1*(12), 59-76.

42. Zuñiga, R. y Soriano, E. (2019). Influencia de la formación en las perspectivas de inserción laboral del colectivo joven. *Revista de Ciencias Sociales Nueva Época*, 46, 144-168.

Identity - an Influential Factor in Modernization of Healthcare Systems in Hungary and Serbia

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Abstract

The changing word and its economic trends are demanding adjustments in healthcare systems. The modernization of the healthcare appeared as global requirement, in connection with numerous changes in healthcare sector, including the financing and providing funds for unallayed services. Also, one of the crucial elements of the modernization is the development of the healthcare leadership and introducing elements of the shared leadership, in order to create an organizational culture, which can comply with the global changes resulting to economic and business transformations. Belonging to groups, families, and communities can empower leaders and increase commitment towards belonging. Through cultural humility, leaders are able to recognise and understand their own cultural self-identity and how this affects their leadership style. In this paper, the authors recognise that everyone has unique traditions, values, and beliefs (ethnic identity, language, religion, community, family ties), that everyone is connected to others, and that this greatly influences their leadership decisions. In order to provide a theoretical basis for the research, the authors aim to present a literature review of past research on identity as a factor influencing the modernization of healthcare (and leadership) in both Hungary and Serbia. Though there is a recognized need, opportunities for healthcare leadership development are limited both in Hungary and Serbia, including important limiting factors such as the fact that leaders are still sceptical about modern business and management elements in the healthcare sector. The ideal solution

would be the combination of the early and mid-to-late career development and the integration of both the organizational and leadership development. This paper focuses on describing the healthcare systems in the two countries and understanding the factors that need to be highlighted in terms of their modernisation, both in the system and in relation to healthcare leadership.

Keywords: Healthcare management, leadership, Hungarian, Serbian, identity, modernization, healthcare systems

Introduction

The healthcare system represents the infrastructure that provides healthcare services and manages programs for individuals, families, and communities in order to improve and maintain the health status of the population.

The healthcare system is one of the most sensitive areas of the social system. As one of the social fundamentals, it must take responsibility and act in accordance with the needs and requirements of the population (Freedman, 2005).

The stage of the economy (economic development) of a country greatly influences the health status of its population. Conversely, the current economic situation of the country and its potential for future economic development actively depends on the health status of the population. Thus, it can be stated that the health status of the population and the development of the healthcare system can serve as an indicator in assessing the current and future economic situation and potential of a given country at the international level.

This study show a comparison between the positions of the healthcare systems and their management in Hungary and Serbia based on secondary data generated from the literature review.

Healthcare reforms should include and apply the elements of the modern healthcare management. Healthcare management became the crucial part of the healthcare systems in the developed European countries. In the developing countries, such as Serbia, where social and economic reforms started 15-20 years ago, the healthcare management is still considered as a fairly novel phenomenon, and it takes great effort to integrate the elements of the modern management into the healthcare system. It is extremely important to follow the examples of developed European countries and especially the examples of the neighbouring countries, as well as the continuous comparison of the position of the Serbian healthcare system with the healthcare systems of other more developed countries. Certainly, it is important to keep in mind the current economic development of the country, the stage of the accomplished reforms, and to evaluate the achieved results accordingly. On

the other hand, in the case of Hungary, it may be useful to compare the progress in the improvement of the healthcare system with the less economically developed countries, e.g., Serbia. This could serve as evidence of the actual impact of the completed healthcare reforms and the development of the healthcare system compared to its previous state. Also, it could serve as the motivating factor in the further development. It is applicable for both countries as the comparison can increase the competitiveness of their healthcare systems and services and strengthen the role of the healthcare management.

Literature Review

The key challenge for all healthcare organisations is to ensure a continuously improving, high quality, safe, and compassionate healthcare. However, the position of healthcare managers can be defined as an authority role since they make important decisions and shape the organization. Such decisions are related to recruitment and development of staff, implementation of new technologies, allocation, and spending of the resources. Thompson (2007) stated that managers must consider two domains, external and internal. These internal domains reflect the operations inside the organization, where managers have most control.

Leadership is the most influential factor of the organisational culture, ensuring the necessary leadership behaviours, strategies, and qualities. Haslam et al. (2020) and majority of researchers reject pristine personality models of leadership, with most still advocating hybrid models in which the leaders refers to decontextualised personality as one of the most important components. In the case of leadership, there are several social and background factors that affect a leader's ability to impact others. Perhaps the most important of these are (a) the culture of the group being led and the culture of the wider society in which the group is located, (b) the nature of the institutions within which leadership takes place, and (c) the gender of the leaders themselves. Each of these factors is significant in its own right (Haslam et al., 2020).

The leader should be regarded as a prototype within the group. Leaders are seen to be "doing it for us". Their actions must serve the interests of the group. Leaders are supposed to "shape us". They do not simply work within the constraints of pre-existing identities handed down to them by others, but they are rather actively engaged in shaping a community. They are actively engaged in shaping a shared understanding of 'who we are'. Therefore, a large part of their success comes from their ability to represent themselves in terms that match members' understanding within the group. It is argued that leaders need to "make us matter". The point of leadership is not simply to express what the group thinks, but it is to translate the group's ideals, values, and

priorities into reality. What counts as success depends on how the group thinks reality should be shaped and to clarify what a leader needs to do to become successful. This is even more important because societies are currently facing enormous challenges. With various global developments - military technology, religious extremism, political conflict, environmental degradation, etc. - the difference between the right and the wrong kind of leadership is rightly said to be changing everything in the world. Instead, the world, in this case Hungary and Serbia, needs leaders who not only have the right goals, but who can motivate people to support them. It needs arguments that are based less on opinion and more on solid scientific evidence (Haslam et al., 2020). Also, the identity of the leader plays an extremely important role in shaping and interpreting this. It is crucial to understand who they are and who they want to be. Not only social identity but also a sense of national belonging and political convictions would help him to do this.

According to Drath et al. (2008), the basic leadership task is to ensure direction, alignment, and commitment within teams and organisations. Effective leaders in healthcare services are continually focused on safe, high quality, and compassionate care as their top priority. They should ensure that the voice of patients is heard at every level, and patients' experiences, concerns, needs, and feedbacks (positive and negative) are consistently considered (West, 2015). They should offer supportive, empathic, fair, respectful, compassionate, and empowering leadership.

Team leaders should create a strong sense of team identity and ensure shared leadership inside the teams, with all the members appropriately involved in decision making, in order to improve high quality patient care. Bezrukova et al. (2012) stated that such alignment has an important influence on the reduction of the effects of 'fault lines', defined as group and status differences, interfering with effective collaboration, which is a common problem in healthcare organisations. West (2013) claimed that cultures focused on the high-quality care require leadership which could ensure that there are clear and challenging objectives at all organizational levels. According to Ham (2014), this is different from target-driven cultures that are applied by some governments and organisations in order to drive changes with limited success. Boyatzis (1982) was focused on the competencies related to managerial effectiveness and found the following skills important for leaders: technical competence, which brings the respect of the followers (knowledge about the organisation, strategy, structure and processes, healthcare services, treatments and technologies); conceptual skills (understanding of the complex environments of organisations, both internal and external); and interpersonal skills (understanding the needs and feelings of followers, monitoring the effects of own behaviours and being aware of emotional reactions to others).

Objectives

Accepting the assumption that the changing world and its economic trends are demanding adjustments in the healthcare systems, which make the modernization of the healthcare a global requirement based on the analysis of the development of healthcare systems in Hungary and Serbia, it is important to put into consideration the phenomenon of healthcare management.

In response to these complex challenges, the aim of the current research is to serve as a useful material in the analysis of the management of healthcare systems, even as starting point for further research, primarily by answering the following questions:

What are the identification and assessment of the managerial competences, which are crucial for effective performance in healthcare systems, including possibilities for modernization and development of those competences?

What are the current prospects for learning and implementation of skills, competences, and new leadership models in healthcare systems in Hungary and Serbia?

Is there any correlation between identity and the new elements of the leadership?

Methods

The empirical literature review is more commonly called a systematic literature review and it examines past empirical studies to answer the author's research question. This literature review is a summary of research that has been conducted in the past on subject of identity as influential factor on modernization of healthcare in Hungary and Serbia, which helps in forming the theoretical basis of the research.

Due to the multidisciplinary topic, this paper focuses largely on providing empirical support for the unfolding theoretical basis that was introduced. Given the complex nature of the phenomena, leadership, on the one hand, can be a very creative sort of process, and on the other hand, the general psychological mechanisms are at work in the creation of effective leadership - this means assembling a range of evidence.

The authors have done the research and analysis of the results of the domestic (Hungarian and Serbian) and foreign literature on the subject. Data from secondary sources were used, e.g., publications in both Hungarian and Serbian languages, media appearances and statistical database, to present the current status of the investigated phenomenon.

One of authors main goals was to formulate the research problem as accurately as possible. Also, the collected data will support the preparation of the author's own survey, which is addressed as the next step in the research of healthcare leaders' identity.

The authors expect that during this explanatory research, it would be possible to determine whether there is a deterministic relationship between the given criteria. Since these social phenomena can be extremely complex in causation, there may be a stochastic relationship between the factors, in which case only a tendency-like relationship can be observed between the characteristics.

Leaders bring their life experiences, history, and culture into every role and context. Belonging to communities, groups, and families can be a source of strength and contribute to a sense of belonging. It can also be a basis for exclusion if leaders are not aware of how different cultures and beliefs affect their actions. Cultural humility requires leaders to recognise and understand their own cultural identity and how this affects their leadership style. Recognising that everyone has unique tradition, values, and beliefs (ethnic identity, language, religion, community, neighbourhood, and family ties) helps us to see how we can relate to each other, and it also influences our leadership decisions.

Results

The structure and functioning of healthcare systems are greatly influenced by the economic and political environment. Healthcare reforms are essential for the development of the healthcare service. Systematic approach and science-based techniques lead to the efficient healthcare management, which plays an important role in the reform process and improvement of the competitiveness of the healthcare systems. This provides the opportunity to the developing countries to enhance their healthcare and to reach the level of well-functioning systems of the developed countries.

In this current research, the situation in the healthcare systems of Hungary and Serbia were analysed and compared. Thus, these are two former socialist countries in which political regime changes, together with the shift in the structure of the economic systems that took place at different times, thereby resulting to differences in the economic growth rates over the past two decades. Hungary became an EU member state in 2004, while Serbia has undergone throughout major changes in the social system (including the healthcare system) since 2000. In March 2012, Serbia became a candidate for EU membership.

In both countries, the identification and assessment of the competences, knowledge, skills, attitudes and initiation of adequate training programs, and studies of professional development are essential for effective healthcare management, including leadership and providing proper healthcare service consequently.

Central and Eastern European (CEE) countries are facing increasing challenges in the provision of equitable and comprehensive healthcare for their

citizens, which is based on factors such as changing demographics and the continual launch of new premium priced medicines. Some CEE countries do well in this respect, but many do not, particularly in the Balkans (Brien et al. 2019). In the past 23 years, the post-socialist restructuring of health system funding and management patterns has brought many changes to small Balkan markets, putting them under increasing pressure to follow the advancing globalization (Jakovljevic, 2013). Dissatisfaction with healthcare remains widespread with restricted access to the healthcare. The process of enhancing this may require greater investment and a shift of focus in specific areas. Seven countries in the region rank below 70th globally in the aggregate health ranking, and average satisfaction levels with healthcare remain low at 57%, representing only a three-percentage point increase from a decade ago (Brien, 2019). Issues with quality and accessibility of healthcare services are not just a matter of underfunding. Socioeconomic inequalities in healthcare access are still growing across the region (Jakovljevic, 2013). Countries should learn from each other on how to address these challenges and maintain sustainable systems.

Healthcare Management in Serbia

Serbia is systematically rebuilding a stressed and severely underfunded healthcare system. Although the country's healthcare professionals are trained according to the global standards, outdated equipment and infrastructure impacted the quality of healthcare service delivery (The Healthcare IT System in Eastern Europe, 2008). The basic infrastructure and organization of the health system was inherited from the former Yugoslavia. However, general health reforms since 2000 have attempted to rehabilitate and modernize health facilities and equipment and to improve technology, supported by extensive international humanitarian aid (Bjegovic-Mikanovic et al., 2019).

Democratic changes in 2000 and the adoption of the Health Policy in 2002 initiated significant progress. The main aim of the reform programme, from 2004 to 2010, was to improve preventive healthcare services and to decrease rates of preventable diseases and total healthcare costs. After 2012, reforms focused on improving infrastructure and technology alongside implementing an integrated health information system.

The healthcare system in Serbia is based on compulsory health insurance, with contributions as the main source of financing and broad population coverage. The state owns majority of the healthcare facilities and equipment. The main purchaser of publicly funded health services is the National Health Insurance Fund (NHIF). National legislation allows private healthcare service, which is covered predominantly by private payments (Bjegovic-Mikanovic et al., 2019).

Healthcare management needs to improve production of health institutions, and the lack of financial resources in the healthcare system of Serbia imposes the necessity to improve hospital management (Gajic-Stevanovic, Aleksic, Stevanovic, & Zivkovic, 2014). This would include synthetic and trans-disciplinary approach to solve business problems, with a number of alternative solutions. Highly skilled management personnel are the best solution for improvements, including knowledge, skills, and the applications of the latest technologies.

Health managers should follow the latest trends in theory and practice and propose new models for efficient implementation of contemporary management trends in all health facilities (Aleksic, Stevanovic, & Gajic-Stevanovic, 2004). Positive results in healthcare quality improvement could be expected together with the improvement of managerial skills in the knowledge and innovation support, leadership, teamwork, and goal orientation. Teamwork of managers and physicians in all medical institutions is critical to improve the quality of health services for patients (Barker, 2001). Effective management of healthcare institutions is important to achieve balance between personal and clinical autonomy and create positive environment for efficient and effective functioning of the health facility (Martinov-Cvejin, 2009).

An important challenge in the Serbian healthcare system is the mismatch between the production and the employment capacities for healthcare professionals (especially physicians and nurses), which contributes to high unemployment and migration (Santric-Milicevic et al., 2015). So far, there was an entirely centralized staff's planning. Producing a realistic plan for human resources in Serbian healthcare system should be prioritized as an essential future action, since many Serbian healthcare professionals currently work in EU countries and there could be even bigger outmigration in the future (Gacevic et al., 2018).

Expectations that only internal reforms will improve the overall health system in Serbia are not realistic, since the financing of the healthcare system continues to be a large item for the Serbian budget, as well as a significant part of the public consumption. However, it is necessary to work on establishing an efficient and effective healthcare management and implementing it in an adequate manner by educated experts who are trained to apply modern methods and techniques. This would serve as the first step and measure in initiating and reorganizing the healthcare system management in Serbia.

Healthcare institutions would require new professionals who fully understand the healthcare system processes, organizational problems, and have sufficient knowledge to manage health facilities and to encourage the application of technology. An important aspect should focus on the development and implementation of the communication skills, competences

in managing human capital and information, and the methods for assessment of the organizational performance (especially the evaluation of the quality in healthcare).

Healthcare Management in Hungary

In the last 20 years, Hungarian state and its systems underwent significant, unique changes. Besides democratization and managing the immediate crises caused by the collapse of the economy in the early 1990s, there was a strong desire to build Western models of healthcare system and the necessary social and economic infrastructure (Szócska, Réthelyi, & Normand, 2005). The reform of healthcare services is still a priority in Hungary, but managing these changes is difficult due to the managerial inexperience.

Structural change is in progress in the Hungarian healthcare system and some efficiency gains have been reached. In October 2020, the Hungarian Parliament approved a new law regarding a significant pay rise to doctors, which will be implemented in several stages from January 1, 2021, to January 1, 2023. This, however, depends on the number of years spent in the healthcare service. The purpose of the law is to reorganize the healthcare system in order to separate public and private medical care and to change and improve the legal status of doctors employed in the public sector. This new law is considered as the most significant reform initiative in Hungarian healthcare so far (Albert, 2021).

Besides the proposed 'historic' pay increase, significant potential efficiency could be reached with better organization and management of health services, including dissemination and better incorporation of modern healthcare technologies (e.g., high number of acute care hospital beds in international comparison, regionally unequal access, mixed levels of progressive care and a nonuniform emergency service system with unequal access to the emergency room, heterogeneous quality of care, and unexploited opportunities of modern health technology including 1-day surgery, minimally invasive procedures, telemedicine).

The Political Shortcomings of Individualist Models

In addition to their significant theoretical deficiencies, many observers have argued that the engagement of researchers and public relations experts with individual leaders is politically problematic. Notably, they view this involvement as counterproductive because it is seen as perpetuating two disempowering biases. First, it implies that members of the public cannot hold leadership positions because they lack leadership qualities. This means that if they were capable enough, they would take high office. Second, it suggests that only individuals with special qualities are capable of envisioning and

achieving social progress. In this sense, Gary Gemmill and Judith Oakley (1992) argued that the very notion of leadership is an 'alienating social myth' that encourages complacency and passivity on the part of followers who, if they accept the view that social transformation is brought about only by the actions of outstanding individuals, will resign themselves to their lesser role and be restrained from pursuing change for themselves. Furthermore, the desire to discourage others from questioning the legitimacy of their authority may explain why those in leadership positions often enthusiastically support highly individualistic models of leadership (Bennis, 1995).

James Meindl and his colleagues have argued in this regard that leadership and charisma are simply romantic attributions that people make to explain the success of a group (Meindl, 1993). However, like most romantic perceptions, Meindl argues that they have no firm foundation. This type of argument is supported by the historical evidence that the figure of the individual leader was strongly promoted particularly in 19th century Europe (e.g., through portraits, statues, and biographies) to negate the threat to the ruling elites of various nations, which was posed by the prospect of popular revolution (Pears, 1994). In the early 20th century, the same concepts were appealed to defend opposition (McDougall, 1921).

Discussion

In the current research, two important studies related to healthcare management in Hungary have been highlighted. One of these was The Hospital Survey on Patient Safety Culture (HSOPSC), a rigorously designed tool that measures inpatient safety culture. In this survey, 371 healthcare workers from six Hungarian hospitals participated (including nurses, physicians, and other healthcare staff). The most important findings revealed that the healthcare staff works in the "crisis mode," while trying to accomplish too much and too quickly. The "blame culture" does not also facilitate patient safety improvements in Hungary (Granel et al., 2019).

Another important research was an international study on obstacles to compassion-giving among nursing and midwifery managers, which was conducted in 2020. This was a cross-sectional, exploratory, international online survey involving 1,217 participants from 17 countries. Managers' responses on open-ended questions related to barriers for providing compassion were entered and thematically analysed. The conclusion showed that the obstacles to compassion-giving among managers vary across countries and the understanding of the variations across countries and cultures is of crucial importance. Regarding Hungary, it should be highlighted that the fear of losing authority by giving compassion appears to drive some managers towards emphasizing rules, tasks, and results. Also, stress and burnout were outlined as barriers to compassion (Papadopoulos et al., 2020).

In order to simply investigate the current situation on the development of healthcare management and leadership in Hungary and Serbia, a search of internet sources on healthcare management/leadership related materials have been completed. This search was done in Google Browser and on Pubmed.gov database for relevant topics and keywords (Table 1). Based on the search results provided in the table below, it is obvious that the numbers of the documents related to healthcare management in Hungarian and Serbian language are not high, especially in the group of the scientific publications (PubMed.gov results). It is even more apparent if these numbers are compared to the numbers of the publications in English language. This fact may suggest two things: healthcare management is still on low level of development in these countries and/or when they talk and do research about it, they do it rather in English language. This means that they still refer to healthcare management as an international or foreign phenomenon and not as something that can be identified with.

Table 1. Google and PubMed.gov search on relevant topics/keywords (22-Sep-2021)
Source: Compiled by the authors based on Google Browser and PubMed.gov search results

Keyword	Number of Google results	Number of PubMed.gov results
Healthcare Management	5 200 000 000	694 328
Healthcare Leadership	623 000 000	25 439
Healthcare Manager	749 000 000	694 328
Egészségügyi menedzsment (EN: Healthcare management)	2 970 000	8
Healthcare Management Hungary	87 100 000	1 270
Egészségügyi menedzser (EN: Healthcare manager)	432 000	3
Egészségügyi szervező (EN: Healthcare organizer)	1 450 000	3
Healthcare Leadership Hungary	32 000 000	33
Menadzment u zdravstu (EN: Health Care management)	175 000	1
Healthcare Management Serbia	39 500 000	528
Liderstvo u zdravstvu (EN: Health Care Leadership)	12 000	39
Healthcare Leadership Serbia	10 800 000	16

One of the barriers in developing leadership in healthcare systems in Hungary and Serbia is the fact that some of current leaders are still sceptical about including modern management elements in the healthcare. The essential underlying cause of scepticism towards implementation of elements of management and collective leadership structure in the healthcare sector is the still ongoing process of political, economic, and social transition. This transition poses a lot of questions related to identity on population and individual level. Complex healthcare environments and the specific nature of modern healthcare work require modern approach in healthcare management and leadership. Work is distributed between different healthcare professionals (physicians, nurses, residents, and other clinical support staff) and artifacts (information technology, machines) and there is a specific structure in the relationships between them. This is a complex network of actors, and the crucial factor is understanding its complexity and its different aspects including management, continuity of care, nursing, and decision-making.

The Theoretical Background of Social Identity Approach and the Exploration of Personal Identity to Leadership

According to the social identity approach (Tajfel & Turner, 1979), individuals can classify themselves and act on the basis of both their personal identity (i.e., "I" and "me") and their different social identities (i.e., "we" and "us"). The consequences of individuals categorising based on social identities and the development of strong group identity attachment have been the focus of many research. These studies have, for example, confirmed the importance of social identity and social identification for a range of behaviours, including individuals' commitment to group projects (Haslam et al, 2013), productivity (Worchel et al., 1998), and participation in a variety of health-related behaviours and physical activity (Stevens et al., 2018). Much of this work attests to a key claim of social identity approaches that categorize oneself in terms of a particular social identity, which is associated with a desire to align personal behaviour with that of members within the group (Turner et al., 1987). Commonly, the strategic leadership literature focuses on facts, which make leaders unique as individuals (Finkelstein, Hambrick, & Cannella, 2009). Nevertheless, recent researchers have incrementally highlighted leadership as a social group process (Dinh et al., 2014). According to this context, leaders are significant not just because they are unique as individuals, highly charismatic or based on the precise position of power they hold, but rather because they think and act in terms of a bigger context. They should be able to nourish a shared identity with those they seek to persuade (Hogg, 2001; Hogg, van Knippenberg, & Rast, 2012). The modern research in leadership paid considerable attention to the bond that exists between personality traits and identity (Harrison, Leitch, & McAdam, 2015; Lord et al., 2017). The

social identity approach to leadership is seen as a method that is grounded in a sense of joint social identity between leaders and their employees (Ellemers, de Gilder, & Haslam, 2004). In line with these demands, this research points to the importance of leaders being seen as representatives of the group they want to lead (Barreto & Hogg, 2017). They embody the norms, values, and ideals that make the group different from other groups. At the same time, scholars have claimed that successful leaders do not simply cover received social identities, but instead actively attempt to create some kind of group identity (Augoustinos & de Garis, 2012). Among other things, leaders work as identity patrons to make social identity, enhance a sense of shared identity within the groups they lead, and make it their own. They typically do this by identifying shared norms and values or ideals that adapt members with their own agenda. The theoretical proposition that social identity includes all significant aspects of group behaviour is a theoretical basis for a novel analysis of leadership. Certainly, building on the foregoing knowledge, the social identity approach affirms that leadership is a constant, multidimensional course that focuses on leaders' abilities to represent, create, and incorporate a shared sense of social identity for group members (Haslam et al., 2020). This is because it is made by developing a shared sense of one group, which ensures that leaders can stimulate individuals' motivations and also exploit converted power. Meaningfully, from this context, successful leadership is a process of social influence that involves making followers want to contribute to shared goals.

There is limited data on impact of social identity and social identification to behaviours and commitment of leaders in healthcare systems of Hungary and Serbia. However, based on previous research results, it is obvious that in Hungary, the leaders are prepared for the renewal and development of the modern system of healthcare services. There is agreement among Hungarian health actors on the need to build a coherent, national approach to the healthcare system, considering all the interrelationships, interactions, and elements of the system (Lantos, 2010). Hence, this is a very similar situation in Serbia as well. The Serbian healthcare leaders are aware of the need to pay attention to professional capacity building, strengthening leadership skills and capacities, and using positive examples and experiences from best practices of foreign and developed countries in order to modernise the national healthcare system and improve the access to the system on all local levels (Mitrovic et al., 2013).

Limitations and Future Research

From a methodological standpoint, future research could aim to perform multilevel modelling to account for the nested structure of the data collected from the Serbian and Hungarian healthcare leaders' groups. This

would allow the calculation of the proportion of variance that can be considered at the individual and group level. However, since multilevel modelling requires at least 30 participants per group (Maas & Hox, 2005), and since the number of leaders in the health systems of both countries is often low, such studies would probably need to be conducted in large groups. Research will be considerably slower due to the current COVID-19 pandemic situation.

Conclusion

Although there is a well-defined need, modernization and development of healthcare leadership and leaders' skills is still limited in both Hungary and Serbia.

Developed and improved healthcare management and leadership would provide a significant support in the process of healthcare reforms in Serbia and necessary assistance in providing effective healthcare services in Hungary. More training programmes are needed - both early and mid-to-late career development.

One of the important barriers in modernization of healthcare management and development of leadership in Hungary and Serbia is the actuality that some of current leaders are still sceptical about implementation of the modern management elements (including collective leadership structure) into healthcare systems.

Explaining further the causality, one of underlying causes of scepticism is the still ongoing process of political, economic, and social transition. The transition itself raises questions related to identity on population and individual level.

There is insufficient data on impact of social identity and social identification to behaviours and commitment of leaders in healthcare systems of Hungary and Serbia, which does not allow to make further conclusions. However, clear connection could be established in both countries between recognising the need for developing an effective social health protection system and effort to improve the leadership in healthcare.

References:
1. Albert Fruzsina (2021). Hungary reforms its healthcare system: a useful step forward but which raises some concerns, ESPN Flash Report 14, European Social Policy Network (ESPN)
2. Aleksic, J., Stevanovic, I., & Gajic-Stevanovic, M. (2014). The role of managers in improving the health care system in Serbia. Serbian Dental Journal, 61(3), 142–148. https://doi.org/10.2298/sgs1403142a

3. Augoustinos, M., & de Garis, S. (2012). 'Too black or not black enough': Social identity complexity in the political rhetoric of Barack Obama. European Journal of Social Psychology, 42(5), 564–577. https://doi.org/10.1002/ejsp.1868

4. Baker, R. G. (2001). Healthcare Managers in the Complex World of Healthcare. Frontiers of Health Services Management, 18(2), 23–32. https://doi.org/10.1097/01974520-200110000-00005

5. Barreto, N. B., & Hogg, M. A. (2017). Evaluation of and support for group prototypical leaders: a meta-analysis of twenty years of empirical research. Social Influence, 12(1), 41–55. https://doi.org/10.1080/15534510.2017.1316771

6. Bennis Warren, G. (1995). An invented life: Reflections on leadership and change. Long Range Planning, 28(6), 121. https://doi.org/10.1016/0024-6301(95)91179-0

7. Bezrukova, K., Thatcher, S. M. B., Jehn, K. A., & Spell, C. S. (2012). The effects of alignments: Examining group faultlines, organizational cultures, and performance. Journal of Applied Psychology, 97(1), 77–92. https://doi.org/10.1037/a0023684

8. Bjegovic-Mikanovic, V., Vasic, M., Vukovic, D., Jankovic, J., Jovic-Vranes, A., Santric-Milicevic, M., Terzic-Supic, Z., & Hernández-Quevedo, C. (2019). Serbia: Health system review. Health Systems in Transition, WHO Regional Office for Europe 21(3): i-211. https://apps.who.int/iris/bitstream/handle/10665/331644/HiT-21-3-2019-eng.pdf

9. Boyatzis, R. E. (1982). The Competent Manager: A Model for Effective Performance (1st ed.). Wiley.

10. Brien Dr. Stephen, Swalem, B., & MacDowall, A. (2019). Central and Eastern Europe Prosperity Report, The Lived Experience, Legatum Institute. https://li.com/wp-content/uploads/2019/10/2019-Central-and-Eastern-Europe-Prosperity-Report.pdf

11. Dinh, J. E., Lord, R. G., Gardner, W. L., Meuser, J. D., Liden, R. C., & Hu, J. (2014). Leadership theory and research in the new millennium: Current theoretical trends and changing perspectives. The Leadership Quarterly, 25(1), 36–62. https://doi.org/10.1016/j.leaqua.2013.11.005

12. Drath, W. H., McCauley, C. D., Palus, C. J., van Velsor, E., O'Connor, P. M., & McGuire, J. B. (2008). Direction, alignment, commitment: Toward a more integrative ontology of leadership. The Leadership Quarterly, 19(6), 635–653. https://doi.org/10.1016/j.leaqua.2008.09.003

13. Ellemers, N., de Gilder, D., & Haslam, S. A. (2004). Motivating Individuals and Groups at Work: A Social Identity Perspective on

Leadership and Group Performance. The Academy of Management Review, 29(3), 459-478. https://doi.org/10.2307/20159054

14. Finkelstein, S., Hambrick, D. C., & Cannella, B. (2009). Strategic Leadership. Strategic Leadership: Theory and Research on Executives, Top Management Teams, and Boards. https://doi.org/10.1093/acprof:oso/9780195162073.001.0001

15. Freedman, L. P. (2005). Achieving the MDGs: Health systems as core social institutions. Development, 48(1), 19–24. https://doi.org/10.1057/palgrave.development.1100107

16. Gacevic, M., Santric Milicevic, M., Vasic, M., Horozovic, V., Milicevic, M., & Milic, N. (2018). The relationship between dual practice, intention to work abroad and job satisfaction: A population-based study in the Serbian public healthcare sector. Health Policy, 122(10), 1132–1139. https://doi.org/10.1016/j.healthpol.2018.09.004

17. Gajic-Stevanovic, M., Aleksic, J., Stojanovic, N., & Zivkovic, S. (2014). Health care system of the Republic of Serbia in the period 2004–2012. Serbian Dental Journal, 61(1), 36–44. https://doi.org/10.2298/sgs1401036g

18. Gemmill, G. & Oakley, J. (1992). Leadership: An Alienating Social Myth? Human Relations 45(2), 113–129. https://doi.org/10.1177/001872679204500201

19. Granel, N., Manresa-Domínguez, J. M., Barth, A., Papp, K., & Bernabeu-Tamayo, M. D. (2019). Patient safety culture in Hungarian hospitals. International Journal of Health Care Quality Assurance, 32(2), 412–424. https://doi.org/10.1108/ijhcqa-02-2018-0048

20. Ham, C. (2014). Reforming the NHS from within: beyond hierarchy, inspection and markets, King's Fund.

21. Harrison, R., Leitch, C., & Mcadam, M. (2015). Breaking Glass: Toward a Gendered Analysis of Entrepreneurial Leadership. Journal of Small Business Management, 53(3), 693–713. https://doi.org/10.1111/jsbm.12180

22. Haslam, S. A., Adarves-Yorno, I., Postmes, T., & Jans, L. (2013). The Collective Origins of Valued Originality: A Social Identity Approach to Creativity. Personality and Social Psychology Review, 17(4), 384–401. https://doi.org/10.1177/1088868313498001

23. Haslam, S. A., Reicher, S.D., & Platow, M.J. (2020). The New Psychology of Leadership: Identity, Influence and Power (2nd ed.). Routledge. https://doi.org/10.4324/9781351108232

24. Hogg Michael, A. (2001). A social identity theory of leadership. Personality and Social Psychology Review, 5, 184–200. https://doi.org/10.1207/S15327957PSPR0503_1.

25. Hogg, M. A., van Knippenberg, D., & Rast, D. E. (2012). The social identity theory of leadership: Theoretical origins, research findings, and conceptual developments. European Review of Social Psychology, 23(1), 258–304. https://doi.org/10.1080/10463283.2012.741134

26. Jakovljevic, M. B. (2013). Resource allocation strategies in Southeastern European health policy. The European Journal of Health Economics, 14(2), 153–159. https://doi.org/10.1007/s10198-012-0439-y

27. Lantos Zoltán (2010). A magyar egészségügy kész a megújulásra – Döntéshozói véleménytérkép a nemzetközi egészséggazdasági trend tükrében. IME -Az egészségügyi vezetők szaklapja 9(9), 5-8.

28. Lord Robert, G., David, V. D., Stephen, J.Z., Bruce, J., Avolio, A.H., & Eagly, A. H. (2017). Leadership in applied psychology: Three waves of theory and research. Journal of Applied Psychology, 102(3), 434–451. https://doi.org/10.1037/apl0000089

29. Maas Cora, J. M., & Hox Joop, J. (2005). Sufficient Sample Sizes for Multilevel Modelling. Methodology: European Journal of Research Methods for the Behavioural and Social Sciences, 1(3), 86–92. https://doi.org/10.1027/1614-2241.1.3.86

30. Martinov-Cvejin Mirjana (2009). Predavanje - Organizacija zdravstvenih ustanova. Panevropski univerzitet Banja Luka.

31. McDougall, W. (1921). An introduction to social psychology, (14th ed.). John W Luce & Company.

32. Meindl, J.R. (1993). Reinventing leadership: A radical, social psychological approach. In J.K. Murnighan (Ed.), Social psychology in organizations: Advances in theory and research 89–118.

33. Mitrovic, M., & Gavrilovic, A. (2013). Organizacija i menadžment u zdravstvu Srbije, FBIM Transaction, 1 (2): 145 – 158

34. Papadopoulos, I., Runa, L., Koulouglioti, C., Aagard, M., Akman, Ö., Alpers, LM., Apostolara, P., Araneda Bernal, J., Biglete-Pangilinan, S., Eldar-Regev, O., González-Gil, MT., Kouta, C., Krepinska, R., Lesińska-Sawicka, M., Liskova, M., Lopez-Diaz, AL., Malliarou, M., Martín-García, Á., Muñoz-Salinas, M., Nagórska, M., Ngunyulu, RN., Nissim, S., Nortvedt, L., Oconer-Rubiano, MF., Oter-Quintana, C., Öztürk, C., Papp, K., Piratoba-Hernandez, B., Rousou, E., Tolentino-Diaz, MY., Tothova, V., & Zorba, A. (2020). Obstacles to compassion-giving among nursing and midwifery managers: an international study. Int Nurs Rev. 67(4):453-465. doi: 10.1111/inr.12611.

35. Pears, I. (1994). The Gentleman and the Hero: Wellington and Napoleon in the Nineteenth Century', in Myths of the English, (Eds.), Roy Porter, Cambridge: Polity Press. 216.p.

36. Santric-Milicevic, M., Matejic, B., Terzic-Supic, Z., Vasic, V., Babic, U., & Vukovic, V. (2015). Determinants of intention to work abroad of college and specialist nursing graduates in Serbia. Nurse Education Today, 35(4), 590–596. https://doi.org/10.1016/j.nedt.2014.12.022

37. Stevens, M., Rees, T., Coffee, P., Haslam, S. A., Steffens, N. K., & Polman, R. (2018). Leaders promote attendance in sport and exercise sessions by fostering social identity. Scandinavian Journal of Medicine & Science in Sports, 28(9), 2100–2108. https://doi.org/10.1111/sms.13217

38. Szócska Miklós, K., János, M., Réthelyi, Charles Normand: Managing healthcare reform in Hungary: challenges and opportunities, BMJ 331. https://doi.org/10.1136/bmj.331.7510.231

39. Tajfel Henri & Turner John (1979). An integrative theory of intergroup conflict. In W. G. Austin, & S. Worchel (Eds.), The social psychology of intergroup relations. 33-37.

40. The Healthcare IT System in Eastern Europe, Serbia (2008). Imaging Management 3(5): 40-46

41. Thompson John, M. (2007). Health Services Administration, In S. Chisolm (Ed.), The Health Professions: Trends and Opportunities in U.S. Health Care, MA: Jones and Bartlett, 357-372.

42. Turner John, C., Hogg Michael, A., Oakes Penelope, J., Reicher Stephen, D., & Wetherell Margaret, S. (1987). Rediscovering the social group: A self-categorization theory. Basil Blackwell.

43. West Michael, A. (2013). Creating a culture of high-quality care in health services. Global Economics and Management Review, 18 (2), 40-44. https://doi.org/10.1016/s2340-1540(13)70007-0

44. West Michael, A. (2015). Leadership and leadership development in health care: the evidence base. FMLM, Centre for Creative Leadership, The King's Fund. 36.p.

45. Worchel Stephen, Rothgerber Hank, Day Eric Anthony, Hart Darren, & Butemeyer John (1998). Social identity and individual productivity within groups. British Journal of Social Psychology, 37(4), 389–413. https://doi.org/10.1111/j.2044-8309.1998.tb01181.x