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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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Table of Contents:

Exploring the Components of Digital Identity on Social Networks Sites: Identifier, Post, Profile Photo, and Selfie

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Absract

The digital age has ushered in a paradigm shift in self-expression and identity construction, with social network sites (SNSs) serving as vibrant canvases for individuals to shape and project their digital personality. This paper focuses on delving into the intricate components of digital identity on SNS, focusing on four key elements: identifiers, posts, profile photos, and selfies. Based on a descriptive and analytical method, this article attempts to draw up a detailed and nuanced analysis of the multiple facets of digital identity, thus providing a solid basis for in-depth understanding of this complex phenomenon in the specific context of social networks which technically regulate the representation of self. The results obtained show that the construction of a digital identity is framed by the architecture of SNSs, which incite users to manifest their selves, thus producing unlimited digital traces that reflect their personality traits. The results also provide an understanding of the structure of SNSs that aim to raise awareness of presenting a positive self-image in the digital world.

Keywords: Digital identity, Social networks sites, Identifier, Post, Profile photo, Selfie

Introduction

One of the most important features of Web 2.0 is the involvement of Internet users in content creation and in forging relationships between them.

In 2005, the most popular websites in terms of visitors were eBay, Amazon, Microsoft, AOL, and others, including e-commerce sites (Cardon, 2011, p. 141). However, these sites disappeared from the rankings in 2008, in favor of platforms such as YouTube, Myspace, Facebook, Hi5, and Wikipedia. This transformation of the web has been significant (Cardon, idem). In the real world, individuals engage in social behavior and extend these interactions to social networking sites. In physical environments, people interact with those nearby, while in the digital world, communication processes are more extensive (Sufiani, 2020).

The reason for the success of social networking sites rests on the way individuals express themselves and reconstruct their sociality through new practices of presentation and exposure. Social networks sites have transformed the vast space of the web into a familiar and navigable space. Users on these platforms express their identities in diverse ways (Cardon, 2011, p. 142). At the beginning, when these digital platforms appeared, people presented their daily lives and revealed their personal interests and tastes to a limited extent. Today, the inverse is observed. Everything is exposed on these platforms, and few people hide their private lives from digital view (Idem, 2011) The expansion of an individual's visibility on social media is directly related to the hybrid nature of these social networks sites, which represent a combination of networks of friends and thematic networks such as groups and tags. This heterogeneity within relational spaces fosters diverse forms of communication and digital navigation (idem, 2011, p. 142-144). Nonetheless, this communication can only be achieved by constructing a digital identity and accessing a digital space in which the interaction takes place.

Digital Identity: An Essay of Definition

Digital identity is defined as the collection of all the traces a person leaves when navigating the Internet, whether consciously or unconsciously. These traces include a wide range of data such as writings, audio or visual content, messages exchanged on digital forums, online shopping transactions, and specific names associated with digital identity. Therefore, it can be said that the model of self-representation refers to the signs that a person adopts to represent themselves (Georges, 2011, p. 32).

Digital identity can also be defined along three dimensions:

1. The technical dimension: This is the total of digital effects stored in the memory of digital media.
2. The social dimension: It interprets the effects left behind by others as intermediaries for presenting oneself at a distance (remote presence).
3. The cognitive dimension: This concerns the self-image declared in digital media and participation in the construction of self (Idem, p. 33).

Consequently, the process of digital self-presentation consists in revealing signs that bear witness to the individual's civil, professional, and social identities, which are intertwined. These include certificates obtained, the university where they studied, as well as signs that reveal an active personal identity (Péssilier idem, p. 77) (Cardon, idem, p. 101). Web 2.0 has transformed modes of self-presentation and display. Self-presentation encompasses not only the signals explicitly declared by the user but also signs generated by other users, which is influenced by the nature of the information system within which they exist. These include comments and all the activities a user conducts when navigating the Internet. The following figure highlights the impact of the technical system on the user when constructing their digital identity (Georges, 2011, p. 39).
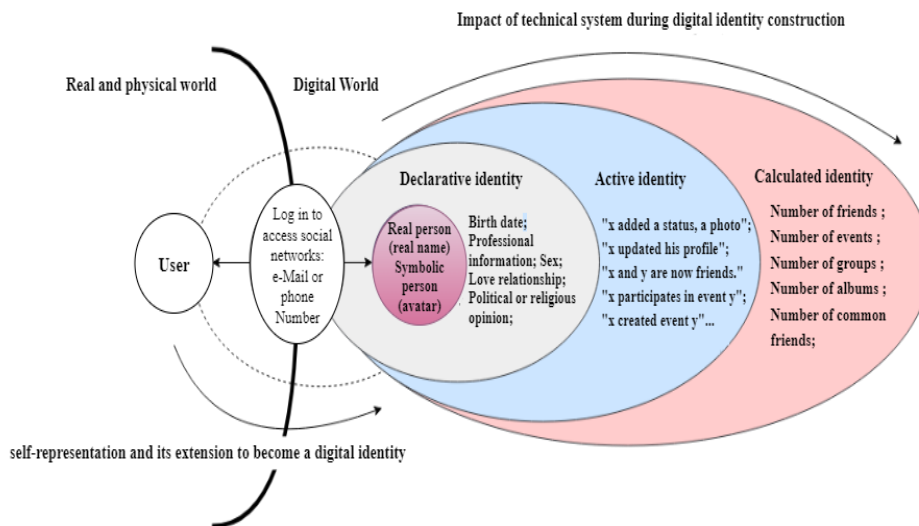
Figure 1 . Self-representation and Digital Identity Construction
(Georges, 2011, p. 39) (El Yazidi, 2023, p. 110)

Figure 1 shows the technical framework within which digital identity is constructed. It demonstrates that digital identity is made up of three integrated elements: declared identity, active identity, and digital identity. At the same time, the figure shows that control over digital identity and self-presentation passes from the user to the information system. As soon as a user starts the process of constructing their digital identity, they gradually begin to lose control of their self-representation to the information systems (Georges, 2011, p. 39).

It is important to note that one of the characteristics of Web 2.0 is the shift from interaction with machines via the screen (interactivity) to interaction with individuals (social interaction), emphasizing the creation of networks

through not just information exchange but also the sharing of knowledge (Quoniam & Lucien, 2009, p. 16-28). It can be said that the development of technological structures has greatly contributed to the advancement of social structures (Idem, p. 28).

Figure 2 . The Personal Profile Page on the Facebook Social Network
(El Yazidi, 2020, p. 175)
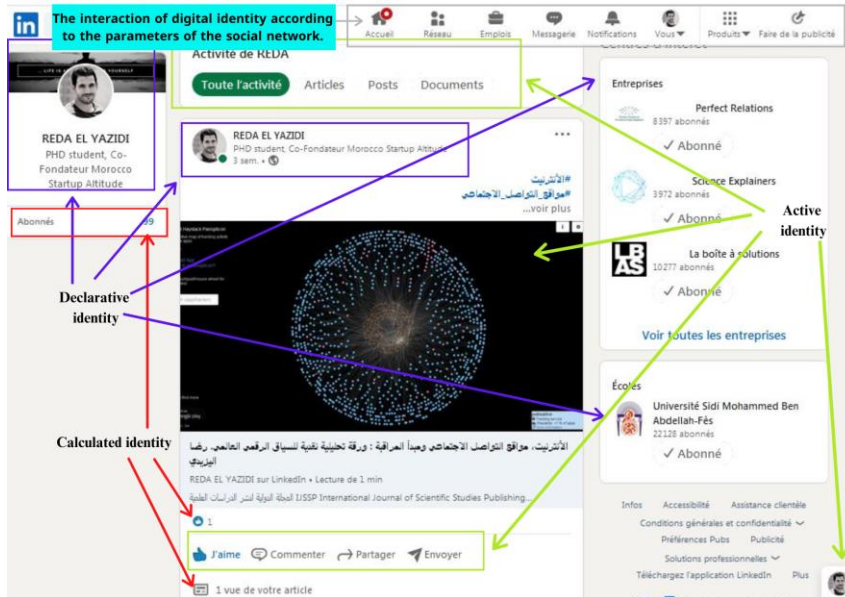
Figure 3 . The Personal Profile Page on the LinkedIn Social Network
(El Yazidi, 2023, p. 111)

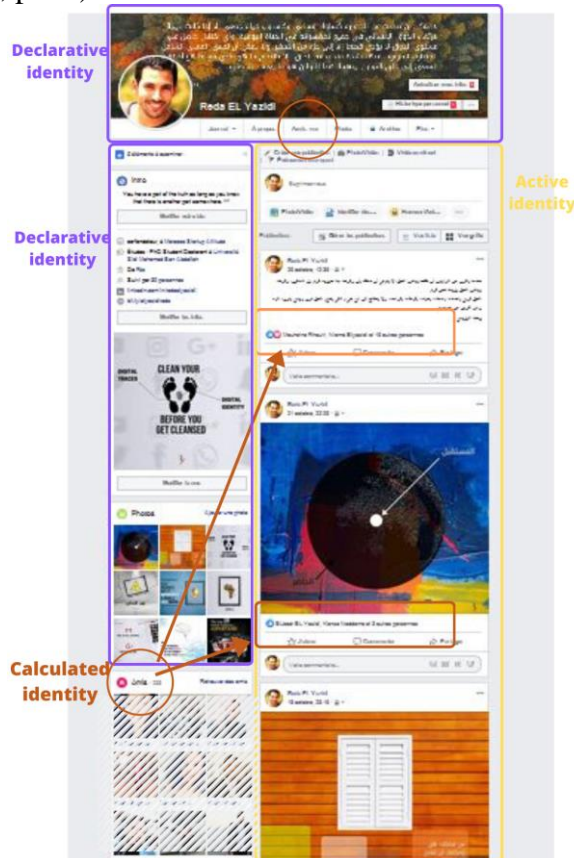Figures 2 and 3 represents the user profile page interface on Facebook and LinkedIn, which are among the largest and most famous social media networks in the world. For example, Facebook had around 2.98 billion monthly active users in the first quarter of 2023 (Statista). LinkedIn, on the other hand, reports around 930 million users in its latest statistics (LinkedIn, 2023). It is clear from the user profile page interface that these platforms include various categories of digital identity, making them an excellent platform for constructing digital identity. Not only do they enable users express themselves, create relationships, and introduce themselves, but they also offer the opportunity for self-discovery and recognition by others. In addition, they provide a continuous process for producing social links, effects, interactions, and most importantly, interpretations. Certainly, modern information and communication technologies now possess the ability to recognize each person, categorize distinctions, and identify individual characteristics, both personal and behavioral. Thus, this process establishes the starting point of what Ertzscheid called: "The new documentary body of a global informational environment (...), which explains that a person has become a document (digital information) like other documents, and he no longer has his own identity and has no control over its exposure/visibility except to a slight/limited extent" (Ertzscheid, 2009, p.33-40).

Definition of Social Networking Sites

The concept of social networking sites revolves around viewing the internet as a distinct social space. The primary function is to facilitate user interactions, ensuring the continuous generation of content in the form of digital traces (digital identity). This goes beyond the initial model of the internet (Internet 1.0), which primarily served as a platform for distributing documents and digital content (Zammar, 2012, p. 88).

Dana Boyd and Nicole Ellison defined social networks as Internet services that enable individuals, firstly, to create a public or semi-public profile through a specific interactive system. Secondly, they allow the creation of networks by users who, in turn, have other networks through which they view, exchange, and forge relationships. The nature and denomination of these links can change from one site to another (Boyd, 2007, p. 1) (Boyd & Ellison, 2008, p. 211) (Kaplan & Haenlein, 2010, p. 61).

Social networks sites can be divided into two opposing categories. The first category requires users to provide their real name and email address, which leaves no margin for anonymity. In contrast, the second category insists that users' identities must not be revealed, restricting their interaction to usernames or digital avatars when engaging with others on the network (Tisseron, 2011, p. 103). Consequently, it can be said that social networks have provided spaces for self-representation and projection by offering a variety of symbols and relational tags (Péssilier, 2017, p. 76).

It is also important to mention that not all social networks sites were created in the same way as they are known and observed today. For example, the QQ network began as an instant messaging service in China, LunarStorm began as a private community website, Cyworld began as a discussion forum to foster interaction in South Korea, and the French website Skyrock (formerly Skyblog) began as a personal blog service before it developed and added some of the features of contemporary social networks. Classmates.com, which was initially a guide for schools that contained student lists, gradually added a large number of people after updating to keep up with the structure of current social networks. In addition, AsianAvenue, MiGente, and BlackPlanet, which were originally ethnic sites, quickly emerged on the social networking scene, but had limited use until they were reinvented in 2005-2006 with new digital structures (Boyd & Ellison, idem p. 213).

The following is a timeline of the emergence of the world's most famous social networking sites:
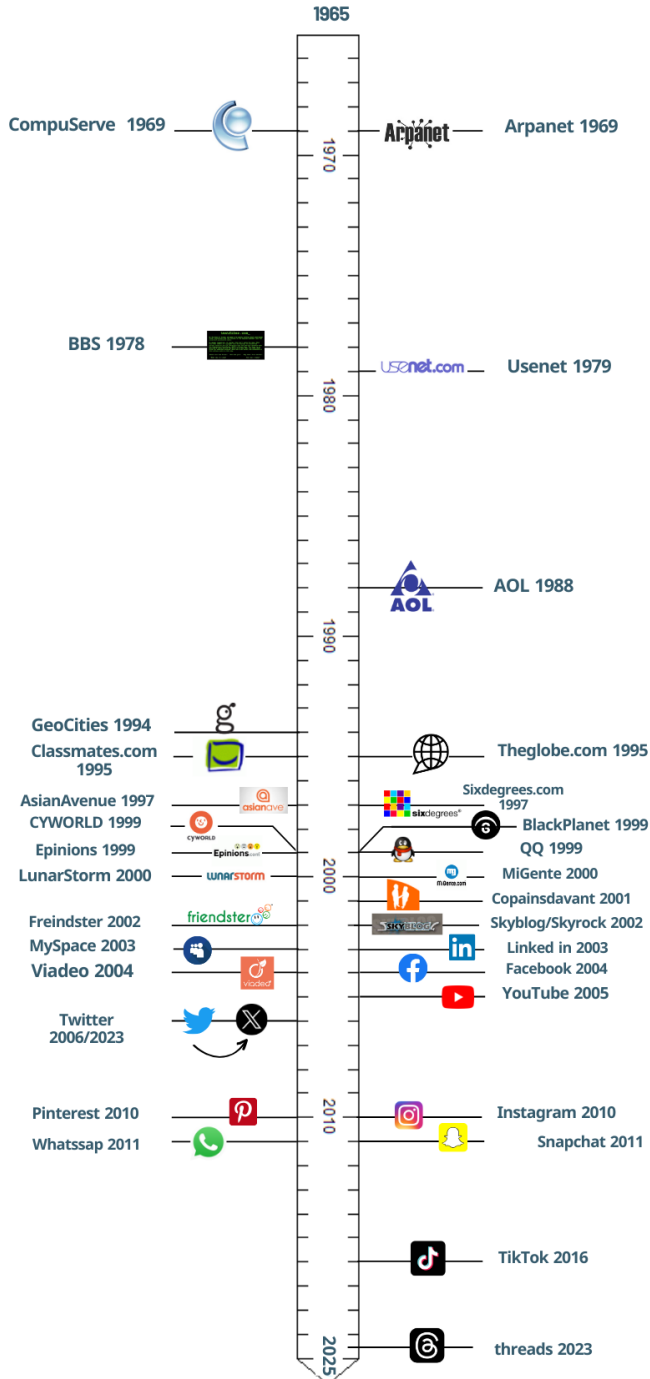
Figure 4 . A Timeline of the most Popular Social Networks Sites
(By Author)

One of the characteristics of new information and communication technologies is the reconstruction of relationships between individuals in space and time. As a result, the question of the evolution and sustainability of social links has been renewed with the emergence of social networks sites, from which users derive new forms of collaboration and interaction through the digital medium (Zammar, 2012, p. 88). Furthermore, the traditional form of social links, that requires geographical proximity, has become a subject of discussion due to the use of the internet and social networking sites. These sites encourage the renewal of social links and a shared space, although not always in real time (Zammar, idem, p. 88).

Therefore, social networks can be described as a set of applications based on the principles of social Internet 2.0, established on ideological and technological foundations that enable the exchange and sharing of user-generated content (Kaplan & Haenlein, idem, p. 61).

The functional uses of social networks sites can be summarized into seven basic categories:

Table 1. Functional Uses of Social Networking Sites

Functional Uses of Social Networking Sites	
Presence and assistance	The extent to which users are aware of the presence of other users for communication purposes.
Sharing	The extent to which users exchange and share content.
Relationship building	The extent of links between users.
Identity	The extent to which users reveal their true personality and identity.
Reputation	The extent to which users are aware of the social status of others and the quality of the content they provide.
Conversations	The extent to which users communicate with each other.
Group/community creation	The degree to which users are organised or form groups/communities.

(Kietzmann et al., 2011, p. 243)

Based on the above mentioned elements, Zammar concludes that social networks sites are:
- An information infrastructure integrated into the Internet system, which, in turn, is interconnected to another information infrastructure.
- A global communication infrastructure that affects all areas of human activity.
- An information infrastructure that is invisible to users, such that these digital media hide behind their uses, applications, and designs (Zammar, idem, p. 67).

Methods

This study opted for a descriptive and analytical method (Neuman, 2014) in order to deeply explore the various components of digital identity on social networks sites. This methodology allowed researchers to provide meticulous details on the various aspects of digital identity, while focusing on the distinctive characteristics, behaviors, and interactions observed within this digital environment.

Results

1. **Components of digital identity on social networks sites: identifiers, posts, profile photos, and selfies**

Based on leading prompts such as *"What are you doing now?", "What's on your mind?", "What's new?"*, and "Express yourself", contemporary social networks sites aim to gather various aspects of users' self-expression in order to feed and expand information flows through features like walls, news feeds, or profiles. This mode of self-expression which individuals interact with adopts the structure of an empty writing frame, promising to present every visual or pictorial interaction and every written statement as an expression declared 'now' through unlimited notifications to other network members (Gomez, 2016, p. 65-66). As a result, every interactive moment within this social framework leaves digital traces linked to memory and history, compelling individuals to revisit these moments consistently.

Therefore, it can be said that the design of social networks sites has a compelling force in guiding users on both the expressive and behavioral level (Péssilier, 2017, p. 78). The following is an illustrative example of what can be found when accessing social networks sites such as Facebook, LinkedIn, and Twitter, in an attempt to engage users to express their "self" and personality.
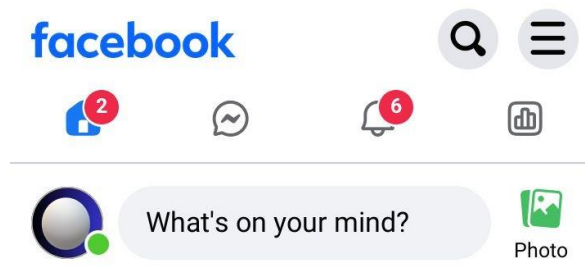

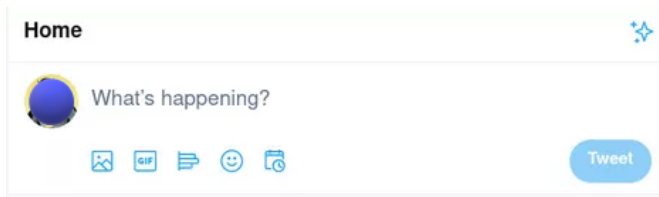**Figure 5 .** Picture Captured from Facebook Wall

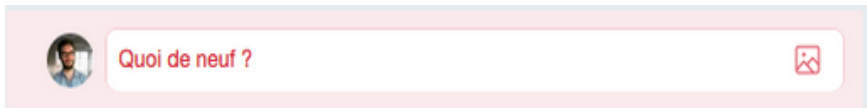**Figure 6 .** Picture Captured from X (twitter) Wall

Figure 7 . Picture Captured from Linked-in Wall

In addition, the profile photo is considered as one of the elements indicating the identity of an Internet user. It contributes to both declarative and active identity, distinct from personal photos found on official documents like national IDs or passports, which adhere to administrative dimensions. Additionally, it plays a role in active identity as a choice exercised by individual Internet users. This choice is constantly linked to the self-image that individuals wish to share with others. As a result, users' profile photos change considerably depending on their self-image, which in turn changes depending on the user's emotional state (Chagdali, 2017).

Recent studies have shown that personal photos contain significant indicators and signs that can be used to identify an individual's personality (Nestler et al., 2012, p. 689-717). The study's conclusion suggests a correlation between the trait of extroversion and facial attractiveness, openness and lip size, and conscientiousness and the femininity of facial features. Notably, these signals and signs are predominantly associated with facial characteristics and remain unalterable by the user during photo capture (Qiu et al., 2015, p. 444).

While other studies used spontaneous photographs taken by experimenters, it was found that the extraversion factor was associated with happiness and smiling (Borkenau et al., 2009; Naumann et al., 2009). Additionally, narcissism was associated with attractiveness, flashy clothes, and women wearing make-up. It was further observed that extroverts posed in more active ways, while introverts posed in more tense ways in full-body photos (Naumann et al., 2009). However, it should be noted that the photos used in these studies contain cues that can be manipulated by participants (facial expressions and body positions), since they were not taken in a natural environment for the purpose of self-expression.

In the same context, Chagdali mentions that in several cases, the use of personal photos is a way of presenting current events or expressing personal and sometimes even collective convictions of Internet users. Moreover, the

decision of not showing one's real profile photo on the Internet and using alternative images is a behaviour aimed at navigating the Internet without revealing the user's real identity (Chagdali, 2017, p. `6).

The following are some examples of profile photos on social networking sites:

Figure 8. A Sample of Profile Photos from Facebook

In addition to the profile photo, which serves as a means to ascertain a user's identity, there exists another indicator that reveals a user's active identity: their identifier. Although many people use their real names in their social networking profiles, there are also others who use fake names or pseudonyms to avoid revealing their real identity to other users (Chagdali, idem, p. 7).

Major internet companies like Google and Facebook have extensively pursued the implementation of policies requiring users to use their real names, as confirmed by Kossef (2022). To understand the rationale behind these measures, one must consider them in the context of the ideological and political dimensions of social networking site usage, encompassing aspects such as monitoring, tracking, and surveillance of all users.

Antonio Casilli considers that the adoption of fake names by users may reflect a desire for a degree of independence in the use of digital platforms. Many users have several pseudonyms to avoid registration processes and digital tracking (Casilli, 2012, p. 17).

The following are examples of user identifiers on social networking sites:
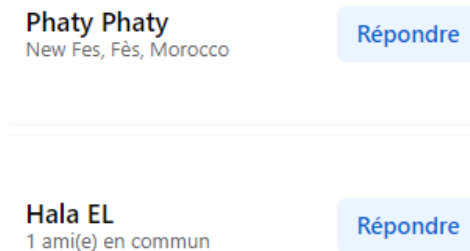
Figure 9. Examples of Certain User Identifiers from Facebook

The active identity of social media users can also be understood from the concept of "Posts" which refers to the act of expressing, publishing, and sharing thoughts with others. Indeed, natural language can now be used to build a computational model of personality traits. Several studies (Golnoosh et al., 2013; Schwartz et al., 2013; Yarkoni, 2010; Golbeck et al., 2010; Hirsh & Peterson, 2009; Chen et al., 2014) have attempted to extract five factors of personality traits from writings and messages shared by social network users on their personal accounts, which are constantly updated. These studies have shown significant associations between the use of natural language and personality traits (Zheng & Wu, 2019, p. 59).

It is also possible to understand the digital identity of social media users and their personalities by analyzing personal photos, which are often published on social networks. Furthermore, the phenomenon of "selfies", where people take photos of themselves, contributes significantly to this understanding. From a psychological point of view, these selfies reflect a person's self-image. Nonetheless, they are also posted for others to recognize and appreciate "self" (Chagdali, idem, p. 7).

The following are examples of selfies published on social networks sites:
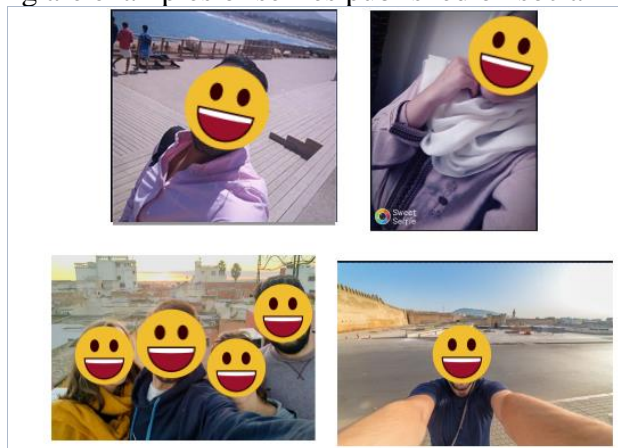
Figure 10. Examples of Selfies

Discussion

This study attempted to explore different aspects, ranging from profile photos to users identifiers, as well as the evolving dynamics of social media platforms. It is evident that the 2.0 transformation of the internet has enabled individuals to actively create and share their identities, effectively bridging the gap between real-life relationships and the online world (El Yazidi et al., 2022, pp. 6956-6965). Today, users express themselves extensively on social media platforms, often blurring the boundaries between their personal and digital lives. However, this transformation has also created new challenges (Idem, 2022). Presently, users are now engaged in a competition to attract as many

digital friends as possible, forge a positive self-image, and strategically manage their personal online networks. Reputation management on social media further exacerbates social and cultural disparities. In addition, individuals sometimes engage in role-playing and self-presentation, which are more pronounced in chat rooms. These platforms offer a space for textual and visual interaction, allowing a sense of liberation from conventional social rules. The exploration of digital identity reveals a rapidly evolving scene, where users navigate complex online identities, striking a balance between freedom and self-presentation. Digital identity is ever-changing and dynamic, reflecting the fluidity of the digital world, transcending traditional boundaries and allowing users to express their multiple facets.

Conclusion

In conclusion, social networking sites have evolved beyond their original purpose of communication. Today, they are designed according to an interaction policy so as to motivate Internet users to produce unlimited digital traces (reactions, posts, comments, sharing…). This approach fosters spontaneity among users. In other words, the more an individual gets engaged in the network, the more the identity is revealed. Therefore, it can be said that digital technology has introduced a new form of "face-to-face" communication that does not require physical presence (physical body) to transmit messages, ideas, values, and especially to expose one's self-image. As a result, the freedom of expression given by social networks is preconditioned to divulge an individual's identity in various aspects including physical, cultural, social, and psychological.

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Aprendizaje Activo en la Educación Superior Como Enfoque Pedagógico

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Resumen

El aprendizaje activo es un enfoque educativo que implica la participación activa y directa de los estudiantes en su proceso de aprendizaje. El objetivo de la investigación fue analizar el papel del aprendizaje activo en la educación superior como enfoque pedagógico del docente de la Facultad de Contaduría y Administración de la Universidad Autónoma de Chihuahua. El método de la investigación fue analítico-sintético, siendo un trabajo de campo con apoyo bibliográfico, con un muestreo aleatorio probabilístico. La variable evaluada fue el aprendizaje activo en la educación superior desde un enfoque pedagógico. Los principales resultados indican que los docentes con mayor antigüedad laboral, utilizan las herramientas de aprendizaje activo, principalmente el trabajo en equipo, aprendizaje basado en problemas, aprendizaje basado en proyectos, así como el aprendizaje en línea y plataformas virtuales. Los docentes de menor edad y menor estabilidad laboral utilizan además el aprendizaje basado en retos, pero dan menor importancia al trabajo en equipo. El sexo, la edad y la modalidad de enseñanza (presencial o virtual) no inciden de manera diferenciada en el uso de las herramientas de aprendizaje activo. Se puede afirmar que, al estar de acuerdo en la implementación de las herramientas de aprendizaje activo, los docentes

consideran apropiado este enfoque pedagógico.

Palabras clave: Aprendizaje activo, educación superior, docente, herramientas de aprendizaje, estudiantes

Active Learning in Higher Education as a Pedagogical Approach

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Abstract

Active learning is an educational approach that involves the active and direct participation of students in their learning process. The objective of the research was to analyze the role of active learning in higher education as a pedagogical approach of the faculty members of the Facultad de Contaduría y Administración de la Universidad Autónoma de Chihuahua. The research method was analytical-synthetic, involving fieldwork with bibliographic support and using a probabilistic random sampling. The evaluated variable was active learning in higher education from a pedagogical perspective. The main results indicate that teachers with more seniority use active learning tools, mainly teamwork, problem-based learning, project-based learning, as well as online learning and virtual platforms. Younger and contractor teachers also use challenge-based learning, but they give less importance to teamwork. Gender, age, and the mode of teaching (in-person or virtual) do not have a differentiated impact on the use of active learning tools. It can be affirmed that, by agreeing on the implementation of active learning tools, teachers consider this pedagogical approach appropriate.

Keywords: Active learning, higher education, teacher, learning tools, students

Introduccion

En los últimos años, ha habido un cambio significativo en la forma en que se concibe el proceso de enseñanza y aprendizaje. Las metodologías tradicionales, basadas en conferencias y presentaciones magistrales, están dando paso a enfoques más interactivos y participativos, y uno de los enfoques

más destacados en este cambio es el aprendizaje activo. Este enfoque pedagógico no solo implica a los estudiantes como receptores pasivos de conocimiento, sino que los involucra de manera activa en el proceso de construcción de su propio entendimiento. Al fomentar la participación activa, el aprendizaje activo busca desarrollar habilidades fundamentales como el pensamiento crítico, la resolución de problemas y la colaboración, preparando a los estudiantes para los desafíos del mundo moderno (Mejías, 2019).

El aprendizaje activo tiene sus raíces en la educación centrada en el estudiante y el enfoque en el aprendizaje profundo y duradero, en lugar de la memorización y la repetición. La idea es que los estudiantes aprendan mejor cuando están involucrados activamente en el proceso de aprendizaje en lugar de simplemente recibir información pasivamente. Algunas de las raíces del aprendizaje activo incluyen:

- El Constructivismo que se desarrolló por pensadores como Jean Piaget y Lev Vygotsky, sostiene que el conocimiento se construye activamente en la mente del estudiante a través de la interacción con el entorno y la asimilación de nueva información en función de las experiencias y conocimientos previos (Cambridge Internacional, 2019).
- El Aprendizaje Experiencial: La teoría del aprendizaje experiencial, desarrollada por teóricos como John Dewey y David Kolb, se basa en la premisa de que el aprendizaje es más efectivo cuando está vinculado a experiencias directas. Los estudiantes aprenden a través de la reflexión sobre experiencias concretas, y este enfoque activo se integra en muchas prácticas de aprendizaje activo (Gleason y Rubio, 2020).
- El Aprendizaje Cooperativo: La idea de que el aprendizaje es social y que los estudiantes pueden beneficiarse de la colaboración con sus compañeros se encuentra en la base del aprendizaje cooperativo. Este enfoque implica la interacción activa y la colaboración entre los estudiantes para lograr objetivos comunes (Santander Universidades, 2022).
- El Aprendizaje Basado en Problemas (ABP) y Aprendizaje Basado en Proyectos (ABP): Estos enfoques pedagógicos implican la resolución activa de problemas del mundo real y la realización de proyectos significativos. Los estudiantes participan activamente en la identificación de problemas, la investigación, la planificación y la ejecución de soluciones, lo que refleja la naturaleza activa del aprendizaje (Bernabeu y Cónsul, s.f.).
- Teoría del Aprendizaje Situado: Esta teoría, desarrollada por Jean Lave y Etienne Wenger, destaca la importancia de aprender en contextos auténticos y participar en actividades significativas en comunidades de práctica. El aprendizaje activo a menudo se implementa en entornos

auténticos donde los estudiantes pueden aplicar activamente sus conocimientos y habilidades en situaciones del mundo real (Gobierno de México, 2021).

- Enfoques Contemporáneos: Con el advenimiento de la tecnología y la creciente comprensión de la diversidad de estilos de aprendizaje, los enfoques contemporáneos del aprendizaje activo han evolucionado para incluir estrategias como la gamificación, el aprendizaje en línea interactivo y la simulación, que involucran activamente a los estudiantes en entornos virtuales (García-Bullé, 2021; Díaz et al., 2021).

En el aprendizaje activo, los estudiantes tienen un rol activo en su proceso educativo, siendo estimulados a explorar, descubrir, experimentar y poner en práctica los conocimientos adquiridos en situaciones reales. Esta metodología se basa en la idea de que los estudiantes aprenden de manera más efectiva cuando están involucrados activamente en su proceso de aprendizaje y tienen la posibilidad de aplicar lo que han aprendido en situaciones prácticas y reales (García-Bullé, 2021).

El aprendizaje activo presenta tanto beneficios como desafíos, aspectos que deben ser evaluados cuidadosamente al introducir esta metodología en el aula. Algunas ventajas como comenta Sierra, (2013) son:

- Los estudiantes adquieren una comprensión más completa de los conceptos del curso, empleando su capacidad cognitiva en niveles superiores.
- En la sesión, los estudiantes se centran en comprender y asimilar los conceptos, dedicando tiempo a que las ideas cobren vida en lugar de simplemente reproducir literalmente lo que el profesor está diciendo.
- Los estudiantes emplean adecuadamente el vocabulario especializado y técnico del campo de estudio. Participan activamente al escuchar y analizar los argumentos de sus compañeros, lo que les permite identificar las áreas en las que necesitan mejorar su comprensión. Además, esta interacción les brinda la oportunidad de aprender unos de otros.
- Los profesores reciben una retroalimentación continua respecto a lo que los estudiantes entienden y no entienden.
- El aprendizaje activo genera una actitud positiva hacia el proceso de aprendizaje y, como resultado, aumenta la motivación de los estudiantes hacia el contenido del curso.
- Los estudiantes obtienen ventajas al interactuar con sus compañeros durante las clases (Zambrano-Contrera, 2023). Desarrollan habilidades

para escuchar de manera analítica, hacer preguntas cuando algo no está claro y plantear dudas cuando discrepan de algún punto.

Los desafíos que tienen que ser considerados cuando se aplica el método en el aula, son:

- El tiempo: En una clase que utiliza el aprendizaje activo, se abarca menos contenido que en una clase donde el profesor no interrumpe su explicación en ningún momento (Barrado, et al., 2001).
- Impacto emocional: al implementar una estrategia de aprendizaje activo, es común experimentar una emoción inicial positiva, ya que los profesores se alegran de la mayor participación de los alumnos en clase. Sin embargo, esta emoción inicial a menudo se ve seguida de decepción al notar el bajo nivel de comprensión de los estudiantes (Barrado, et al., 2001).
- El aprendizaje activo no se adapta a las necesidades y actitudes individuales de todos los estudiantes, ya que esta metodología se enfoca en el estudiante y considera que cada uno tiene necesidades y enfoques únicos. Es evidente que no todos los alumnos razonan y aprenden de la misma manera. (Silberman, 1998; Zambrano-Contrera, 2023).

En síntesis, el aprendizaje activo ha demostrado una serie de beneficios y resultados positivos en el proceso educativo; algunos de los aspectos que ha demostrado incluyen: mejor retención del conocimiento, desarrollo de habilidades de pensamiento crítico, mayor compromiso y motivación, mejora de las habilidades de colaboración, preparación para el mundo real, reducción de la brecha entre teoría y práctica y, fomento de la autoconfianza (Morales, 2018).

En la actualidad, existe una creciente demanda en la educación superior por métodos de enseñanza que fomenten el aprendizaje activo y participativo, que involucren a los estudiantes en el proceso de aprendizaje y les permitan desarrollar habilidades y competencias relevantes para su formación profesional y personal, sin embargo, su implementación sigue siendo un desafío, ya que muchos docentes se resisten a cambiar sus métodos tradicionales de enseñanza y tienen dudas sobre la efectividad y el impacto del aprendizaje activo en el desempeño de sus estudiantes.

Al identificar los métodos de aprendizaje activo más utilizados y los beneficios y retos en su implementación por los docentes en el aula, se pretende cumplir con el objetivo principal de esta investigación, el cual fue analizar el papel del aprendizaje activo en la educación superior como enfoque pedagógico del docente de la Facultad de Contaduría y Administración de la Universidad Autónoma de Chihuahua.

Metodologia

La investigación se llevó a cabo en la Facultad de Contaduría y Administración (FCA) de la Universidad Autónoma de Chihuahua en México, en el periodo comprendido de febrero a abril de 2023. Fue una investigación de tipo aplicada, con un enfoque cuantitativo, de carácter no experimental y correlacional entre la variable y sus indicadores.

El método de la investigación fue analítico-sintético, siendo un trabajo de campo con apoyo bibliográfico. El tipo de muestreo aleatorio probabilístico. Los participantes fueron docentes activos de la FCA, con un tamaño de muestra de 68 docentes, considerando un error máximo del 10% y un nivel de confianza mínimo de 90%. La mayoría del los docentes participantes han recibido cursos de capacitación respecto al uso de las herramientas de aprendizaje activo

La variable evaluada fue el aprendizaje activo en la educación superior desde un enfoque pedagógico por parte de los docentes de la Facultad de Contaduría y Administración de la Universidad Autónoma de Chihuahua. El trabajo de campo se realizó mediante la aplicación de un cuestionario distribuido de manera electrónica por medio de formularios de Google; y el análisis de las respuestas se realizó en la herramienta SPSS Statics de IBM.

Los indicadores de la variable considerados fueron divididos en dos partes en el cuestionario, en primer lugar los datos demográficos de los participantes como sexo, edad, modalidad de impartición de cátedra (presencial o virtual), tipo de contrato y antigüedad laboral. La segunda parte se compuso de los siguientes parametros a medir respecto al aprendizaje activo (AA): Uso, utilidad y necesidad del AA en la educación universitaria, incidencia del AA en la equidad e inclusión, y frecuencia de uso de diversas herramientas ligadas al AA dentro de clase (debate/discusión, trabajo en equipo, estudio de casos, aprendizaje basado en problemas, simulación/juegos de rol, aula invertida, juegos de gamificación, aprendizaje basado en proyectos y aprendizaje basado en retos).

Resultados y discusion

A continuación, se presentan los resultados obtenidos tras la aplicación del cuestionario y procesamiento de los datos obtenidos.

Alfa de Cronbach

Se realizó la prueba alfa de Cronbach, el cual arrojó un valor de 0.765, por lo cual se tiene una buena consistencia interna el instrumento utilizado.

Conglomerados de K medias

Se obtuvieron clústeres de K-medias para el agrupamiento de elementos comunes, para relacionar los datos demográficos de los docentes

con las herramientas de AA utilizadas, donde el conglomerado 3 registró la cifra más alta de casos, seguido por el conglomerado 4, lo cual se muestra en la tabla 1.

En el conglomerado 3 se observa que los docentes con un contrato laboral de tiempo completo y medio tiempo, así como con mayor antigüedad laboral (16 a 20 años), con edades entre 41 y 50 años, son quienes utilizan en mayor medida las herramientas de aprendizaje activo; dentro de las herramientas utilizadas resalta en mayor medida el trabajo en equipo, estudio de casos, aprendizaje basado en problemas, aprendizaje basado en proyectos, así como el aprendizaje en línea y plataformas virtuales.

Respecto al conglomerado 4, que es el siguiente en términos de número de casos, la edad promedio es más cercana a los 50 años, en el tipo de contrato laboral predomina tiempo completo y medio tiempo, y con antigüedad laboral de más de 21 años, los cuales utilizan en mayor medida herramientas de AA como son el trabajo en equipo, aprendizaje basado en problemas, aprendizaje basado en proyectos, aprendizaje en línea/plataformas virtuales.

En docentes con otro tipo de contrato laboral, como lo es hora clase y contrato temporal con edades entre (31 a 40 años), utilizan en mayor medida herramientas de AA como el aprendizaje basado en problemas, aprendizaje basado en proyectos y aprendizaje basado en retos.

Tabla 1. Centros de los conglomerados finales

	Conglomerado			
	1	2	3	4
Sexo	1.60	1.50	1.43	1.77
Edad	3.00	2.50	3.04	3.59
Modalidad	1.00	1.70	1.64	1.91
Tipo Contrato	2.00	2.10	1.75	1.45
Antigüedad	4.00	2.10	3.89	4.59
UsaMAA	1.60	2.10	1.54	1.91
EsÚtilAA	1.00	1.40	1.25	1.64
Debate Discusión	2.00	2.40	3.89	2.41
Trabajo Equipo	3.00	2.60	4.50	3.64
Estudio Casos	2.60	2.40	4.39	2.95
ApBProblemas	4.40	2.00	4.21	3.45
SimulyJgosRol	1.20	2.00	3.71	1.86
AprLineayPlatVirt	2.40	2.70	4.11	3.73
Aula Invertida	1.40	1.90	3.39	2.05
JgosGamificación	1.40	1.60	3.39	1.91
ApBProyectos	4.60	2.20	4.36	3.14
ApBRetos	4.00	1.90	3.82	1.77
ImpPosxAA	2.00	2.00	1.39	2.23
AAHerramEfectiva	1.60	1.60	1.39	1.82
AAInclusyEquidad	2.00	1.70	1.36	2.18
NecAAenEdUniv	1.40	1.30	1.25	1.18

Fuente: Elaboración propia (2023)

La tabla 2 muestra el número de casos obtenidos en cada conglomerado de k-medias.

Tabla 2. Número de casos en cada conglomerado

Conglomerado	1	5.000
	2	10.000
	3	28.000
	4	22.000

Fuente: Elaboración propia (2023)

KMO y Prueba de Bartlett

Se obtuvo el coeficiente de Kaiser-Meyer-Olkin, para medir la variabilidad en los datos obtenidos, logrando un valor para KMO de 0.670, lo cual indica que los datos son adecuados para llevar a cabo un análisis factorial y análisis de componentes principales. La prueba de esfericidad de Bartlett arroja una máxima significancia estadística (0.0), lo cual indica que es viable realizar una reducción de datos mediante un análisis factorial, ya que se tiene una adecuada relación entre los indicadores de la variable, lo cual se muestra en la tabla 3.

Tabla 3. KMO y prueba de Bartlett

Medida de adecuación muestral de Kaiser-Meyer-Olkin.		.670
Prueba de esfericidad de Bartlett	Chi-cuadrado aproximado	596.524
	gl	210
	Sig.	.000

Fuente: Elaboración propia (2023)

Análisis factorial y análisis de componentes principales

Al procesar los datos para realizar un análisis factorial, se identifican 6 componentes que describen el 67.168% de la varianza de los datos, lo cual se muestra en la tabla 4, sin embargo, considerando que con cuatro de los primeros componentes ya se tiene más de la mitad de la varianza explicada (56.47%), se realizó un análisis de los datos con los primeros 6 componentes del análisis factorial obtenido.

Tabla 4. Varianza total explicada

Componente	Autovalores iniciales			Sumas de las saturaciones al cuadrado de la extracción		
	Total	% de la varianza	% acumulado	Total	% de la varianza	% acumulado
1	5.576	26.552	26.552	5.576	26.552	26.552
2	2.336	11.122	37.674	2.336	11.122	37.674
3	2.117	10.083	47.757	2.117	10.083	47.757
4	1.830	8.715	56.472	1.830	8.715	56.472
5	1.156	5.506	61.977	1.156	5.506	61.977
6	1.090	5.191	67.168	1.090	5.191	67.168
7	.974	4.640	71.809			
8	.877	4.175	75.984			
9	.745	3.549	79.533			
10	.721	3.434	82.967			
11	.597	2.844	85.811			
12	.514	2.450	88.261			
13	.475	2.263	90.524			
14	.429	2.044	92.568			
15	.354	1.685	94.253			
16	.307	1.464	95.718			
17	.287	1.365	97.082			
18	.215	1.025	98.107			
19	.177	.842	98.950			
20	.141	.671	99.621			
21	.080	.379	100.000			

Método de extracción: Análisis de Componentes principales.

Fuente: Elaboración propia (2023)

Al analizar los primeros seis componentes principales en la matriz de componentes presentados en la tabla 5, se puede deducir que los docentes que utilizan las herramientas ligadas al aprendizaje activo no están necesariamente ligados al sexo, edad, modalidad de enseñanza, tipo de contrato ni antigüedad laboral.

Quienes consideran en mayor medida que es útil el uso de aprendizaje activo, consideran que su impacto es positivo y es una herramienta efectiva para la educación; acorde a lo afirmado por la Universidad Europea Online (2023), no existe una metodología educativa superior a otra, su efectividad está condicionada por el contexto y las particularidades de los estudiantes. Por ende, es crucial evaluar qué enfoque metodológico se adapta de manera óptima a las circunstancias y al perfil de los estudiantes en cuestión.

Tabla 5. Matriz de componentes[a]

	Componente					
	1	2	3	4	5	6
Sexo	-.166	-.171	-.226	.585	.121	-.102
Edad	-.099	-.576	.702	.075	-.064	.070
Modalidad	-.026	.142	-.312	.665	.069	-.002
Tipo Contrato	.043	.271	-.427	-.347	.400	.235
Antigüedad	.032	-.540	.693	.065	.065	.244
UsaMAA	-.513	.150	-.176	-.189	-.044	.574
EsÚtilAA	-.327	.663	.288	.007	-.187	.295
Debate Discusión	.733	.176	.204	-.100	-.208	-.121
Trabajo Equipo	.644	.054	.120	.163	.007	.415
Estudio Casos	.775	.076	.015	-.094	.110	.321
ApBProblemas	.566	.027	.270	.273	.432	.015
SimulyJgosRol	.729	.117	-.049	-.158	-.253	.077
AprLineayPlatVirt	.490	.223	.012	.651	-.072	.213
Aula Invertida	.622	.239	.179	-.006	-.367	-.086
JgosGamificación	.697	.246	-.043	.054	-.255	-.030
ApBProyectos	.664	.115	.109	-.006	.522	-.055
ApBRetos	.774	.075	.030	-.230	.194	-.324
ImpPosxAA	-.539	.515	.373	.182	-.053	-.185
AAInclusyEquidad	-.437	.305	.323	.124	.252	.097
NecAAenEdUniv	-.150	.292	.391	-.436	.189	-.051
AAHerramEfectiva	-.323	.667	.354	.129	.095	-.200

Método de extracción: Análisis de componentes principales.
a. 6 componentes extraídos

Fuente: Elaboración propia (2023)

Correlaciones de Pearson con Significancia estadística

La tabla 6 muestra la correlación en el uso de las herramientas de aprendizaje activo, enfatizando cuales están relacionadas positivamente y cual es su significancia estadística. Dentro de los valores obtenidos resaltan los siguientes: el trabajo en equipo se relaciona con el estudio de casos y este a su vez con el debate y la discusión. Así como el considerar importante el uso de herramientas de aprendizaje activo se relaciona con considerar efectivas las herramientas del aprendizaje.

Tabla 6. Correlaciones

		EsÚtilAA	DebateDiscusion	EstudioCasos	ApBProblemas	SimulyJgosRol	AulaInvertida	JgosGamificacion	ApBProyectos	ImpPosxAA
TrabajoEquipo	Correlación de Pearson	-0.091	.378**	.560**						
	Sig. (bilateral)	0.472	0.002	0						
EstudioCasos	Correlación de Pearson	-0.135	.534**	1						
	Sig. (bilateral)	0.283	0							
ApB Problemas	Correlación de Pearson	-0.079	.278*	.442**	1					
	Sig. (bilateral)	0.53	0.025	0						
Simul y Jgos Rol	Correlación de Pearson	-0.07	.625**	.651**	.278*	1				
	Sig. (bilateral)	0.581	0	0	0.025					
Aula Invertida	Correlación de Pearson	-0.036	.560**	.382**	.252*	.414**	1			
	Sig. (bilateral)	0.776	0	0.002	0.043	0.001				
Jgos Gamificacion	Correlación de Pearson	-0.107	.527**	.426**	.278*	.534**	.508**	1		
	Sig. (bilateral)	0.398	0	0	0.025	0	0			
ApB Proyectos	Correlación de Pearson	-0.226	.388**	.494**	.523**	.271*	.353**	.366**	1	
	Sig. (bilateral)	0.071	0.001	0	0	0.029	0.004	0.003		
ApB Retos	Correlación de Pearson	-.311*	.628**	.509**	.469**	.517**	.410**	.507**	.594**	
	Sig. (bilateral)	0.012	0	0	0	0	0.001	0	0	
ImpPosxAA	Correlación de Pearson	.533**	-0.168	-.456**	-0.172	-.424**	-0.124	-0.225	-.256*	1
	Sig. (bilateral)	0	0.181	0	0.171	0	0.325	0.072	0.039	
AAHerram Efectiva	Correlación de Pearson	.504**	-0.068	-0.208	-0.04	-0.159	-0.057	-0.12	-0.054	.653**
	Sig. (bilateral)	0	0.592	0.096	0.754	0.207	0.654	0.339	0.667	0

* La correlación es significante al nivel 0,05 (bilateral).
** La correlación es significativa al nivel 0,01 (bilateral).

Fuente: Elaboración propia (2023)

Conclusion

El objetivo principal de esta investigación fue analizar el papel del aprendizaje activo en la educación superior como enfoque pedagógico del docente de la Facultad de Contaduría y Administración de la Universidad Autónoma de Chihuahua, concluyendo lo que se expresa a continuación.

- El sexo, edad y modalidad de enseñanza (presencial o virtual) no inciden de manera diferenciada en el uso de las herramientas de aprendizaje activo, los docentes de modo general opinan que el aprendizaje activo tiene un impacto positivo y es un enfoque efectivo para la educación superior.
- Los docentes con un contrato laboral de tiempo completo y medio tiempo, con una antigüedad laboral de16 a 20 años, así como edades entre 41 y 50 años, son quienes utilizan en mayor medida la mayoría de las herramientas del aprendizaje activo; resaltando en mayor medida el trabajo en equipo, estudio de casos, aprendizaje basado en problemas, aprendizaje basado en proyectos, así como el aprendizaje en línea y plataformas virtuales.
- En docentes con otro tipo de contrato laboral, como lo es hora clase y contrato temporal con edades entre 31 a 40 años, utilizan en mayor medida herramientas como el aprendizaje basado en problemas, aprendizaje basado en proyectos y aprendizaje basado en retos.
- Se pudo observar que existe una alta correlación entre diversas herramientas de aprendizaje activo. El trabajo en equipo se relaciona con el estudio de casos y este a su vez con el debate y la discusión. Respecto al uso del aprendizaje activo, se presenta relación entre el considerar importante el uso de sus herramientas con considerar efectivas a estas.
- Finamente se puede afirmar que el enfoque pedagógico de aprendizaje activo es una herramienta muy importante para aumentar y fomentar el aprendizaje, tal como lo indica Sierra (2013).

Se sugiere realizar investigaciones cualitativas que exploren las experiencias y percepciones de los docentes que implementan el enfoque pedagógico de aprendizaje activo y uso de sus herramientas, así como llevar a cabo estudios que evalúen el impacto de este enfoque en el rendimiento académico de los estudiantes. Además, se recomienda examinar la relación entre el aprendizaje activo y el desarrollo de habilidades clave, como el pensamiento crítico y la colaboración. Es crucial incluir la perspectiva de los estudiantes en la investigación, y se insta a explorar cómo el aprendizaje activo afecta la motivación y el compromiso estudiantil. Asimismo, se propone la realización de estudios longitudinales para evaluar el progreso del aprendizaje en los estudiantes a lo largo de su educación superior.

Se anexa la siguiente declaración por parte de los autores participantes en la investigación denominada Aprendizaje Activo en la Educación Superior como Enfoque Pedagógico (Active Learning in Higher Education as a Pedagogical Approach).

Conflicto de intereses: Los autores no declaran ningún conflicto de interés.

Disponibilidad de datos: Todos los datos están incluidos en el contenido del artículo.

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The Public Value of E-government: A Qualitative Study from the Perspective of Private-Sector Professionals in Morocco

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Abstract
        This paper focuses on assessing the public value of e-government in Morocco, using Delone and Mclean's (2016) Information Systems (IS) success model as a reference framework. The methodology is based on a qualitative exploratory study involving 13 companies, including law firms, architecture firms, and real estate developers firms. An interview guide was designed to collect data, which were analyzed using Nvivo Qsr 12 software. The analysis identified six variables, namely: "Human Capital, Telecommunication Infrastructure, Willingness to Use, State Strategy, Continuous Education, and Culture," which were added to the seven predetermined variables of the Delone and Mclean (2016) IS Success Model. This research outlines practical implications that are essential for the long-term success of e-government initiatives in Morocco. These include investing in skills development, effectively communicating the benefits of e-government, promoting collaboration between the public and private sectors, recognizing organizational culture, putting mechanisms in place to measure performance and user satisfaction, as well as making adjustments to organizational processes and rigorously managing data security. On a political level, these adjustments underline the importance of a coherent government strategy, which focuses on strengthening human capital and telecommunications infrastructures, in order to promote a successful digital transformation and

achieve the objectives of trust, transparency, and efficiency in public services.

1.   Introduction

Information and Communication Technologies (ICT) have revolutionized the dynamics of interactions between public administrations, citizens, and businesses. Online services, also known as electronic services, provide users with a variety of digital solutions that facilitate efficient, transparent, and equitable access to public services. The deployment of electronic services by public administrations extends far beyond the simple modernization of administrative processes. It is a reflection of profound and multidimensional public value. These services help to strengthen trust between citizens and government, increase transparency, promote civic participation, and improve equitable access to information and services.

A new approach to performance, centered on public values, captures interest (Zumofen, 2016). In contrast to the previous New Public Management (NPM) paradigm, this approach prioritizes generating value for citizens over classical performance. Inspired by Moore's work (Moore, 1995), this transition shifts the priorities of public managers from efficiency and objectives to a broader vision centered on public value. This evolution redefines the roles of managers and their relationships with citizens, extending beyond measurable indicators.

Public value is based on evaluating the benefits offered by public services to citizens (Kelly *al.,* 2002). It is measured through three key indicators: service quality, achieving socially desired results, and user trust.

Morocco has launched several initiatives to accelerate its digital transition, including "Digital Morocco 2013," "Digital Morocco 2020," and "Morocco Digital Strategy 2030." These programs revolve around the development of an information society, a digital economy, and local administration through an ambitious e-government program.

This research explores the public value of online administrations in Morocco, adopting a multiparadigm approach with abductive reasoning. This exploratory method confronts empirical data from interviews with theoretical knowledge from the literature on the deployment of Information Systems (IS) and their impact on public value.

The conclusion of this study could offer concrete recommendations for managers responsible for deploying e-government, thereby speeding up the introduction of electronic services that are truly geared towards users' needs. However, it is crucial to emphasize the near-total absence of research dedicated to exploring how e-service systems affect the public value of

administrations in Morocco. This study therefore aims to fill this gap, making a significant contribution to local and national thinking. It sets out to explore the public value generated by e-services systems within government departments, focusing on concrete personal accounts from private sector professionals and their own experiences.

The rest of this manuscript is divided into four distinct sections. The first part addresses the literature review and research question, while the second section outlines and justifies the chosen methodology. The third section presents the results and their concise interpretations, while the fourth and final section discusses conclusions and future perspectives.

2. Literature Review and Research Question
2.1. E-government: Theoretical Overview of the Concept

The theoretical framework of this research area lies between the fields of public administration, information technology, and the digital society. The concept of e-government (e-gov) does not have a universally accepted definition (Halchin, 2004). Nonetheless, it can be defined as an ongoing process of improving public participation, governance, and service delivery through the transformation of internal and external relationships using technology, the Internet, and new media (Baum & Di Maio, 2000).

Since its emergence, there has been much debate among academics and policymakers about the definition of e-government, describing its dimensions, levels of application and socio-economic and political effects. A number of researchers have developed models and theoretical approaches in order to provide better answers to the various questions linked to the field of e-government.

The OECD (2004) highlights several advantages of e-government. These include improving administrative efficiency, achieving specific policy objectives, and reducing public expenditure. It also promotes reform by increasing transparency, facilitating information sharing, and revealing internal inconsistencies.

In addition, according to Delone and Golden (2016), the successful implementation of e-government systems depends on how citizens perceive the value they derive from them. Rose *et al.* (2015) asserts that understanding the values rooted in the perception of e-government projects is crucial in grasping their broader objectives. Furthermore, coordinating stakeholders based on these core values has the potential to drive success.

The stages involved in developing e-government, based on their level of technological and organizational sophistication, have been subdivided into four by Layne and Lee (2001). These stages include the "Information Catalogue" stage, the "Transaction" stage where users are progressively involved, the "Vertical Integration" stage where local and central government

systems are connected, and the "Horizontal Integration" stage which tends to break down the barriers between structured functions within government (Btoush et *al.,* 2008).

In Morocco and other emerging countries, the third stage predominates in the maturation of their e-government systems.

In this context, e-government and e-services are two closely related and interdependent concepts that refer to the use of information and communication technologies (ICTs) to optimize government processes and the delivery of public services. However, it is important to emphasize that e-service is not simply a technical operation, but rather an initiative aimed at improving the political and social context. This initates a radical transformation in the way administrative functions are carried out (Asgarkhani, 2005).

"In the broadest sense, e-service can be defined as the provision of service over electronic networks such as the internet" (Rust & Lemon, 2001).

2.2.   Public Value: An Innovative E-government Evaluation Paradigm

There is still debate about the definition and assessment of e-government, particularly on the relevance of the elements evaluated and their impact on objectives and user satisfaction. This evolution is in line with the public sector's focus on improving services for all stakeholders, increasingly associating this concept with "public value".

Public value refers to the ability to assess the benefits of public services for citizens. The main components of public value fall into three broad categories: services, results, and trust (Kelly et *al.,* 2002). Based on this formulation, Kearns (2004) pioneered a list of criteria to evaluate the public value of e-government, providing a basis on which e-government initiatives should be assessed. These set of standards include focusing on services that are important to the public, increasing information, diversifying user choice, reducing service delivery costs, improving outcomes, etc.

While a good deal of work focuses theoretically on public value to explain the performance of e-government, there exists a noticeable dearth of empirical research validating the possible link between public value and the adoption of e-government. Ha (2016) highlighted the need for a holistic model that brings together two facets of research on the public value of e-government: the performance of e-government services and trust in the accountability of public administration.

Traditionally, it should be noted that performance is defined as the achievement of expected results, as well as value creation commonly associated with increased profits in the corporate sector. However, in the public sector, value creation is interpreted as the optimization of services offered to citizens (Galdemar et *al.,* 2012).

According to the studies of Moore (Moore, 1995), performance evaluation is centered on "added value". In this context, public services play a crucial role. Although the concept of 'value added' remains unchanged, it is important to note that within the public sector, the focus is on 'public value' rather than 'private value'. This is especially notable in the absence of monetary profits, leading to increased complexity in evaluating outcomes for public companies (Van Doren & Lonti, 2010). Public value creation differs from private value creation since it focuses on general interest rather than maximizing profits. Public organisations seek to meet collective needs and solve society's problems (Moore, 1997).

It should also be noted that public value is not limited to short-term gains, but aims to ensure long-term sustainability by meeting current needs without compromising future generations (Hood & Dixon, 2015).

A multidimensional model for assessing the public value of e-government projects has been introduced by Liu et al. (2008). This framework places particular emphasis on the importance of assessing the value of e-government and satisfying stakeholders, focusing on the financial, social, strategic, and operational aspects of e-government projects. However, a true assessment of public value should focus on the citizens' perspective of e-government (Karunasena & Deng, 2010).

Meanwhile, Twizeyimana and Andersson (2019) have identified six dimensions for assessing the public value of e-government. These dimensions include improved public services, administrative efficiency, open government (OG) capabilities, adherence to ethical and professional conduct, trust in government, and the promotion of social value and well-being. In summary, the existing literature on e-government and public value reveals a persistent debate around the definition, evaluation, and impact of these concepts. While e-government seeks to improve public services through technology, 'public value' focuses on the creation of benefits for society as a whole. Multi-dimensional approaches exist to assess this public value, but the focus must be on a holistic view that takes account of citizens' needs.

2.3   Research Problem

Notably, there has been a limited amount of research conducted in Morocco regarding the impact of electronic service systems on public value. Consequently, this study has the potential to significantly enhance reflective practices at both the local and national levels

This empirical study seeks to introduce conceptual model adapted to the Moroccan administrative context, emphasizing factors that directly influence the public value of electronic services. This study also underscores the importance of examining the viewpoints of professionals in the private

sector, aiming to address the research question: «*How do private companies assess the public value of Moroccan e-government?* ». \

3.3 Research Models Adopted
3.3.1 Dimensions and Indicators for Measuring E-government (Delone and McLean Model, 2016)

The literature is rich in models studying various aspects of Information Systems (IS). This research, in addition to public value indices, is primarily concerned with two models related to the evaluation of the success of Information Technology (IT): the Delone and Mclean (1992, 2003, 2016) model and the Technology Acceptance Model (TAM). Although research on the construction of IS models is abundant, there is limited research on the evaluation of the success of these systems (Wang & Liao, 2008).

Furthermore, this study is part of a sequence of previous research conducted by the team which explored the evaluation and use of IS in other public and private contexts (Chafik & Boubker, 2016; Ouajdouni et *al.,* 2020; Houda et *al.,* 2023; Idaomar & Chafik, 2023). The dimensions of Delone & McLean (2016), namely: System Quality, Service Quality, Information Quality, Intention to Use, Use, User Satisfaction, and Net Impact were initially adopted as the basic measurement variables in this research. This method enables the qualitative evaluation of the "public value" factor as a crucial component within the framework of "Net impacts." It involves investigating how each aspect of the model becomes evident in the context of Moroccan administrations by utilizing qualitative data, which encompasses themes, patterns, and participants' exact expressions.

3.3.2 Dimensions and Items Appropriate for Public Value Measures

In line with the approach of Karunasena et al. (2011), which is mainly based on the dimensions of public value of e-government defined by the pioneering authors Kearns (2004), Golubeva (2007), and Heeks (2008), the theoretical indices mainly adopted for public value measures are summarized in Table 1 below.

Table 1. Descriptions of Some Dimensions of the Public Value from Karunasena *et al.* (2011)

Dimensions	Indicators	Description and Desired Conditions
Electronic Service Delivery	Information	Accessibility for all citizens
	Importance	Importance of information for citizens
	Choice	Availability of multiple online channels
	Fairness	Fair provision of services
	Cost Reduction	Cost reduction for citizen users
	Citizen Satisfaction	Citizen satisfaction with e-government services

Efficiency	Efficiency	Increasing the efficiency of public organization
	Responsibility	Improving the government's response capacity
	Public perception	Citizens' views on public organizations
Developing Trust	Security and privacy	Protection of citizens' privacy
	Transparency	Online decision-making communication
	Trust	Trust in e-government services
	Participation	Citizen participation in public debates

Source: Extracted from Karunasena *et al.* (2011, p.95-96)

Based on the conceptual framework of Karunasena *et al. (*2011), the dimension of public value was favored. This is the main objective public organizations seek to achieve when evaluating e-government.

4   Research Methodology
4.1.   Qualitative Exploratory Approach

Qualitative research is a search strategy often used in management sciences. Yin *et al.* (2014) define qualitative study as « *empirical research that studies a contemporary phenomenon in a real context, where the boundaries between the phenomenon and the context are not clear and in which multiple empirical sources are mobilised*».

Qualitative studies provide the advantage of understanding organizations in terms of its unique context. They require researchers to adapt their approach to reflect the reality on ground, allowing for an in-depth analysis of the interactions between phenomena and their context within the organisations.

However, in this present study, it is clear that the evaluation of e-services systems is a complex process that requires a dynamic approach aimed at gathering the perspectives of companies through interviews.

The process is guided by a multi-paradigm exploratory approach based on abductive reasoning that aims to explore the interviewees' perceptions, the empirical data in the literature, and the underlying dynamics of their complex relationships. This approach offers the flexibility needed to understand the Moroccan experience in this field.

4.2   Selection of the Sample and Study Area

This research targets the Morocco's public administration, considering the various reforms and innovation projects that have been undertaken over the last two decades.

Regarding the selection of respondents, the choice is determined by employing a sampling method that features a typical character, with companies being represented by their managers. This means that each sample

has been carefully selected, focusing on executive professionals who are responsible for their business and who have daily managerial interactions with public administrations.

Thirteen participants were chosen based on two criteria commonly advised for qualitative research: the diversification criterion, exemplified in Table 2 of the demographic data below, and the saturation criteria. Saturation was achieved following the 11th interview, signifying that the subsequent two interviewees (the 12th and 13th) did not yield additional substantial responses. Consequently, the sample was constrained to 13 respondents, despite the initial goal of conducting interviews with 20 individuals.

Table 2. Demographic Breakdown of Interviewees

Maintenance Code (E)	Business Activity	Years of Experience	Degree	Gender M/F	Age	Duration of Interview
1	Real estate promotion	+15 ans	Engineering	M	> 40	50 min
2	Architecture	+15 ans	Engineering	M	> 40	45 min
3	Architecture	-15 ans	Engineering	M	< 30	55 min
4	Architecture	-15 ans	Engineering	F	< 30	55 min
5	Lawyer	-15 ans	Lawyer	M	30-40	60 min
6	Architecture	+15 ans	Engineering	F	> 40	55 min
7	Real estate promotion	+15 ans	Engineering	M	> 40	50 min
8	Lawyer	-15 ans	Lawyer	M	30-40	50 min
9	Architecture	-15 ans	Engineering	F	30-40	50 min
10	Lawyer	-15 ans	Lawyer	M	< 30	55 min
11	Lawyer	+15 ans	Lawyer	F	> 40	60 min
12	Real estate promotion	+15 ans	Engineering	M	> 40	90 min
13	Real estate promotion	-15 ans	Engineering	F	< 30	45 min

Source: Authors

4.3. Data Collection

There are different qualitative data collection methods. However, in this study, semi-structured interviews were selected. This method can be compared to a structured conversation aimed at achieving specific objectives. Therefore, this exploratory study opted to reveal the objectives to the interviewees. This direct method allows data to be collected more quickly and in a more specific way, particularly since the interviewees are in managerial positions and have only a limited amount of time available for long and extended interviews. These interviews were conducted face-to-face and focused mainly on oral exchanges.

The average duration of the interviews was 55 minutes per interviewee. In consultation with the interviewees, voice recording was generally opted for. The data were on the basis of an interview guide consisting of seven themes corresponding to the dimensions of Delone and McLean's 2016 model (as

mentioned above). These interviews began in mid-2023 in the respondents' head offices.

The data collected from the semi-structured interviews was based on an interview guide (Table 3) derived from six different themes intricately detailed in the theoretical model of this research (D & M).

Table 3. Principal Themes and Illustrative Questions Addressed to Interviewees

Initial question: Could you share with us your experience with using public e-services systems by your own company?	
Themes	**Selected Questions for Participants**
e-service system Quality	What advantages have you seen in using e-services systems compared with traditional methods? In what way does the reliability and flexibility of e-services systems affect their quality?
Information Quality	In your opinion, how well does e-services systems make it easier for citizens to access relevant and necessary information, and how does the processes for verification of the completeness and precision information on e-services systems influence the perception of their quality?
Quality of the e-services systems management team	Is there a department or unit within your local authority responsible for managing e-services? What are the basic skills you expect from an e-services team to ensure optimum service delivery from your company?
Intention to use/Use of e-services systems	What factors do you think are encouraging users to make more frequent use of e-services systems? What are the main difficulties or barriers you face in using e-services systems?
User satisfaction	Which elements do you consider to be essential for measuring the overall satisfaction of users of e-services systems?
Public value: Delivery of e-services systems	In what way do you think that e-services systems help to improve the delivery of administrative services?
Public value: Efficiency of the public organization	Do you think that the use of e-services systems helps to make the public organization more efficient and improve its ability to respond to citizens' needs?
Public value: Development of trust	What are the key factors that you consider necessary to develop a climate of confidence towards these systems?

In order to give consistency to the content of the interview guide, pre-testing and validation sessions was organized with a manager who had led the implementation of digitization within various divisions of a public organization, as well as a director of a private sector consultancy. The goal is to refine the questionnaire's content, aligning it with the realities of the Moroccan administration to enhance the effectiveness and practicality of the findings.

4.4 Data Processing

During the interviews, a body of information was collected, restructured, and subjected to a thematic analysis, which was previously chosen as the content analysis method. This is a method commonly used in social science and management research (Blanchet & Gotman, 1992). This approach focuses on the importance of themes emerging during the interviews. The methodology is based on the use of Nvivo Qsr12 software to code, analyze, and process data from the 13 conducted interviews.

5. Results and Interpretation
5.1. Descriptive Analysis of the Sample

Characteristics	Gender		Age (Years)			Professional activity			Years of Experience	
	M	F	<30	30-45	>45	Architects	Lawyers	Real estate developers	+15	-15
Absolute Frequencies	8	5	4	3	6	5	4	4	6	7
Percentage %	61	39	31	23	46	38	31	31	46	54

Table 4. Main Characteristics of the Survey Population
Source: Authors

This descriptive analysis of the structure of the sample reveals certain characteristics of the interviewers in terms of their profession, accumulated experience, level of education, etc. (Table 4).

More than 100% of the interviewees had higher education qualifications, with 69% of them being engineers (architects + Real estate developers). Consequently, this constitutes a cohort of highly qualified elites capable of evaluating the influence of administrative attitudes on perceived public value.

5.2. Interviewees' Overall Perception of the Different Approaches to E-government

The cloud of words spontaneously reflects the interviewees' overall perception of connected government and its public value. The size of the keywords in this semantic cloud is proportional to their relevance in the content of the semi-structured interviews (Figure 1).

Figure 1. Keyword Clouds Generated by the Encoding of Interviews

5.3 Predetermined Variables Extracted from the Delone and McLean Model (2016)

Among all the predetermined quality variables, only system quality was expressed by all interviewees. Although the remaining quality variables exhibit varying percentages, they are not insignificant. This is also reflected in the percentages of overlap of this variable in the interviews of several respondents, who implicitly express the link between these dimensions and the public value of the services in question. For example, C2 mentions that *"[...] This Rokhas e-service ... also saves us time, avoids travel, there is also transparency ... The great advantage of these e-services is that any decision must be justified...."*. In addition, C10 clearly states: *"[...] I know that in the system, in the e-justice platform, we have taken into account the security factor ...confidence in using - electronic services as alternative tools to traditional administration..."*.

The quality of the system is identified by the perception of users, who appreciate the technical performance of online systems. In the same vein, other research has noted the influence of system quality on user satisfaction and the perceived usefulness of online services. For example, Chen *et al.* (2015) explores citizens' use of e-government services, specifically within the Philippine online tax filing system. The findings reveal that trust in technology, trust in government, and prior experience have a direct impact on trust in e-government websites. This trust, in turn, significantly influences three dimensions of IS quality: information quality, system quality, and satisfaction with the system.

In the same line, Zolotov *et al.* (2018) utilized D&M's model to assess citizen satisfaction with the perceived quality of e-participation systems. It considers both system quality perceptions and user experience factors, providing valuable insights for enhancing e-participation effectiveness.

The use, the intention to use, and the satisfaction of users are expressed by participants (12/13), which is represented in the verbatim statements of those interviewed. C10 clearly states: "*[...] Yes, of course, we want to use these systems more and more...*", and C4 also affirms "*[...] Yes, I want to use these e-services more and more... Yes, in terms of investment in the use of these e-services...*".

User satisfaction is the main purpose of e-government in general, and this is expressed by respondents (5/13), with verbatims that do not require comment. According to C1 *"[...]...Satisfaction with these e-services is Acceptable; I can say with a percentage of 40%*". On the other hand, C5 has a different expression *"[...] I would say that in terms of satisfaction with these e-services, it is Acceptable at 50%..."*(Table 5).

Table 5. Some Verbatim Discussions of the Themes Identified with the most Significant Overlaps

Variables	Verbatim
Quality of the system (13/13)	*"[...] I know that the system of the e-justice platform, has taken account of the factor of security ...confidence of use - of electronic services as alternative tools to traditional administration... C10"*. *"[...] The great advantage of these e-services is that any decision must be justified... C2"*.
Intention to use and use (12/13)	*"[...] Yes, of course, we are more and more interested on using these e-services...we need a complete e-service and generalize to other tribunal services... C10"*. *"[...] Yes, in terms of investment in the use of these e-services ... develop the existing Rokhas e-service with new options that are not all functional in this V3 version... C4"*.
User satisfaction (5/13)	*"[...] As an architectural firm ...Satisfaction with these online systems is Acceptable with a percentage of 40% ...C1 "*. *"..., our expectations are to have more e-services and to get complete and general digitization and services 100% online...I would say that in terms of satisfaction with these e-services, it is Acceptable at 50%...C5 "*.

The "Public Value" Explanatory Variable

This variable, chosen from the six previously determined variables, serves as the focal point for explanation and requires greater attention. 100% (13/13) of the interviewees made a positive link between public value and the success of the e-services systems, with strong expressions in the verbatim of which an extract has been noted in Table 6.

Company 13: "*[...] Of course, the transparency provided by these online services is positively correlated with citizens' confidence in the administration ... as it contributes positively to the comfort of society and improves the public value of the administration…*". Certainly, "transparency" and "trust" serve as key indicators of public value. The administration's public value is inherently enhanced by the trustworthiness it earns from users.

Company 9: "*[...] Cost-effectiveness, transparency, fairness, time-saving, savings on administrative and travelling costs, and all this converge directly towards improving the public value of the administration, or rather of the administrations responsible for urban planning ...*". As expressed by the interviewee representing Company 9, the items "transparency, fairness, and time saving" are indices that are positively linked to the public value of e-government. Rapidity synonymous with "time savings" and appreciated for its financial implications in terms of profitability, along with transparency, which stands in contrast to corruption, constitute managerial values inseparable from the "public value" variable (Table 6).

Table 6. Some Verbatim Statements with Strong Extracts from the Public Value Variable

| Variables	Verbatim
Public value (PV)(13/13)	Company 13: "*[...]Of course, the transparency guaranteed by these e-services is positively correlated with citizens' confidence in the administration ... as it contributes positively to the comfort of society and improves the public value of the administration*". Company 12: *"[...] Fairness is therefore assured by the services, which consequently contribute to improving the public value of the administration concerned...*". Company 11: "*[...] Fairness is ensured by the e-service ... Of course, this e-service provides transparency... this influences the improvement of public value in the administration and trust between citizens and stakeholders lawyers and others...*". Company 9:"*[...] Efficiency, transparency, fairness, time savings, savings on travel costs, administrative costs, and all this converges directly towards improving the public value of the administration, or rather of the administrations responsible for urban planning ...*". Company 6: *"[...] The e-services systems help us save time and money in terms of the provision of administrative services... in short; we have an improvement in the public value of administrative services*". Company 8: *"[...] with these e-services, the lawyer has nothing to hide from the client, its total transparency...this increases confidence in the administrative services and improves their public value...*". Company 2: *"[...] strengthening the trust of the various parties and also crucially improving public value through transparency....*".
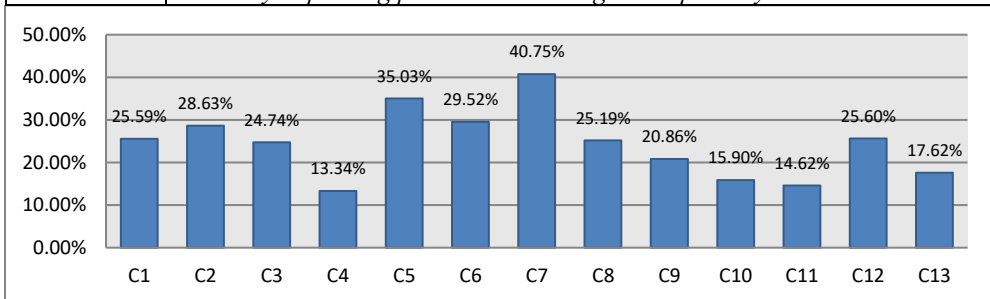
Figure 2. Variable Coverage Public Value with Coding of Respondents

The detailed breakdown of public value, represented by the highest (C7) and lowest (C4) coverage percentages in Figure 2, concretely highlights specific public value aspects for the interviewed individuals. For instance, Figure 3 illustrates key elements such as "Trust, cost reduction, time saving, and transparency. Based on the decomposition made by NVIVO, it was noted that the overlaps between the items are almost the same for C7, who expressed public value as a maximum, while C4 expressed it as a minimum. Public value is therefore an absolute rather than a relative assessment.
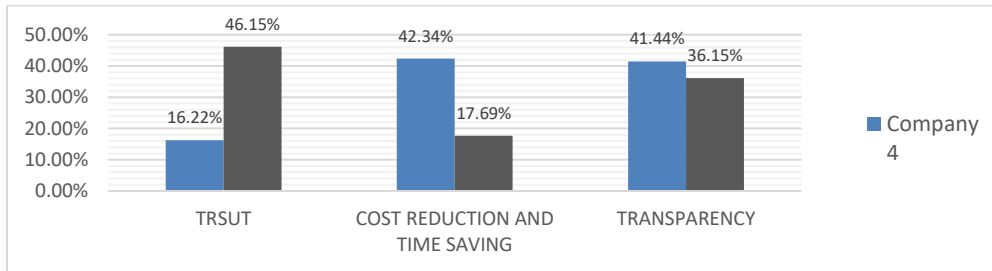

Figure 3. Examples of Public Value Items Expressed as Maximum and Minimum by Company 7 and 4

5.4. Emerging Variables (EV)

Table 7. Extracts from Verbatim Statements Notifying Emerging Variables

Variables	Verbatim
Human Capital	Company 10:*"[...] There is a human capital problem and apprenticeships can only partially solve the problem, there is also a question of generations, young lawyers are more familiar with digital technology...".* Company 8*: "[...]Yes, there is a human resources problem, ... The human resources are an actual obstacle to the use of e-services ... So we have to take into account, in terms of human capital, qualified skills, i.e., people who have knowledge of the e-service system".*
Culture	Company 10*: "[...] It's a new process with a whole new culture ..., I'm coming back to human capital ... in relation to the tribunals and I can assure you that it's a large community which is divided into two waves, the wave of old lawyers who don't have a culture of digitalization, and then there's the new wave of young lawyers who have a culture of using all kinds of on-line tools ...".* Company 3*: "[...]In the future and with the arrival of young ... architects who have this culture of digitization ... I think that things will improve a lot in the coming years...".* Company 7*: "[...] We have a lot to do in terms of the human skills of our administrations, which must have a culture appropriate to the objectives and culture of digitization and e-service...".*
Continuing Education	Company 2*: "[...] As a real estate developer ... we have not received any specific training in digitization or in information technology...".* Company 7*: "[...] so without any continuous education on the use of e-service CIR (Regional Investment Center), we have done self-training in digitization, IT skills, and a personal extra effort...".*

Willingness to use	Company 10: *"[...] What is lacking are human skills at the technical and information technology level ... but also at the level of willingness and serenity, which is what needs to be focused on".* Company 1: *"[...] However, with all these advantages capitalized on, rectifications and adjustments are necessary to improve the public value acquired, and this can only be done in the presence of human skills armed with will.*
Infrastructure	Company 5: *"[...] The e-service "Mahakim" and the e-justice platform. All in all, the power of the internet connection directly influences the public value of e-services. In other words, the telecommunications infrastructure directly influences the public value of the connected administration".* Company 10: *"[...] Here, we have a telecommunications infrastructure problem that positively and negatively influences the public value of these e-services platforms, e-justice, so we need to review the technological logistics in terms of quality and review the Internet connection in terms of speed and throughput, which should be via optical fiber".*
State strategy	Company 10: *"[...] I mean by visibility that coordinates e-government and other services in Morocco, a strategic platform that determines the criteria for the infrastructure to be acquired, the nature of the human skills ... whatever the ministry or administration seeking to integrate digitization ... the different ministries and administrations".* Company 1: *"[...] In my opinion, evaluation and sanctions in case of use for illegal purposes will help to strengthen the public value of public administrations".* Company 5: *"[...] Initially, the digitization of the justice system was launched by the State. For us, it's a major project that will change the structure and the way we work ... and we're discovering that there are a lot of strategic limitations that need to be resolved quickly".*

Human Capital (HC)

This variable proved significant in the responses of 6 out of the 13 interviewees, highlighting its utmost importance (Figure 4). The respondents' verbatim comments provide arguments that clearly support the emergence of this variable. Company 10: *"[...] there is a human capital problem and self-learning can only partially solve the problem, there is also a generational issue, young lawyers are more familiar with digital technology...*".
Company 8: *"[...] Yes, there is a human resources problem, these human resources are an obstacle to the use of e-services ... We therefore need to take into account the human capital of qualified skills with knowledge of e-services systems*". These respondents consider technical qualifications and generation parameters as crucial factors in HC.
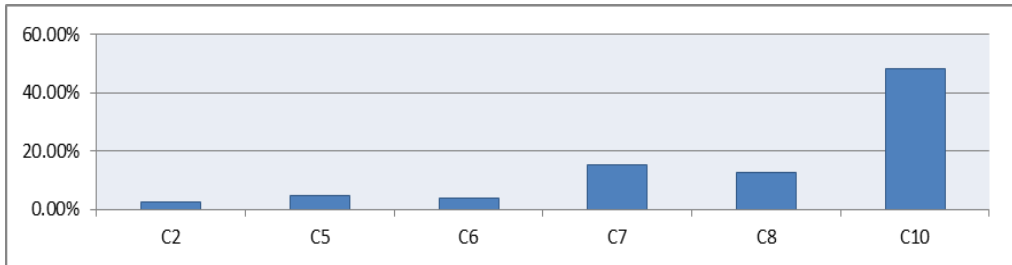
Figure 4. Emergence of Human Capital Variable among the Companies Surveyed

It is important to highlight that Human Capital is connected to various emerging factors such as "culture, continuous education, and willingness," as reported by the interviewees who recognized these variables (Figure 5).
Company 7: *"[...] we have a lot to do in terms of the human skills of our administrations, which must have a culture that is suitable for the objectives and culture of digitalization and e-service..."*. Among the interviewees (3/13, Figure 5), this individual stands as a representative example, highlighting "culture" as a crucial criterion for the human skills required to elevate the public value of e-government.

Company 2: "*[...] As a company of real estate promoters ... we have not had any training in digitization or IT skills...*". Continuous education (Figure 5) is also linked to the technical indicators required by e-services to achieve its objectives, as outlined in a section of the verbatim provided in Table 6.

Company 1: "*[...] However, with all these advantages capitalized, rectifications and adjustments are necessary to improve the public value acquired, and this can only be done with the presence of human skills armed with determination*" (Table 6). For this interviewee, improving the public value of e-services is necessarily dependent on strong-willed human resources.
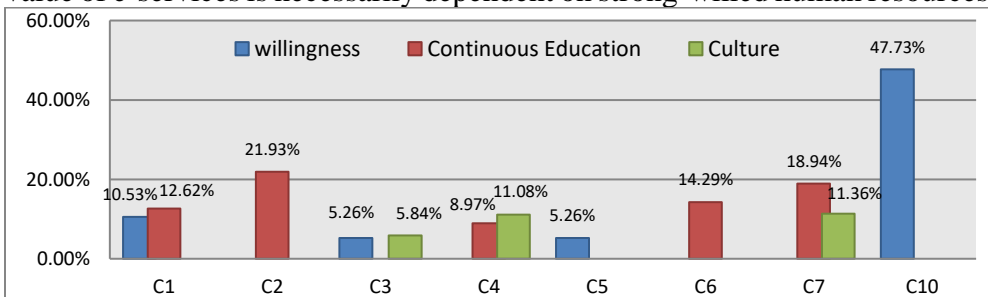

Figure 5. Exploration of the Three Emerging Variables Related to Human Capital as Expressed by Interviewees

Telecommunications Infrastructure

Among the 13 interviews, 6 interviewees mentioned the "Telecommunications infrastructure" variable (Figure 6). These companies

expressed their deep conviction that there is a positive relationship between the qualities and strengths of telecommunications infrastructures and the public value of online services, as articulated in the following extracts:

Company 5: *"[...] All in all, the power of the network connection has a direct influence on the public value of e-services, and consequently the telecommunications infrastructure has a direct influence on the public value of the connected administration"*.

Company 8: *"[...] The "Mahakim" e-service and the e-justice platform. Ultimately, the power of the Telecommunications connection directly influences the public value of e-services. In other words, the Telecommunications infrastructure directly influences the public value of the administration"*. Company 10: "*[...] This is a telecommunications infrastructure problem that positively and negatively influences the public value of these e-services platforms, e-justice, etc."*.
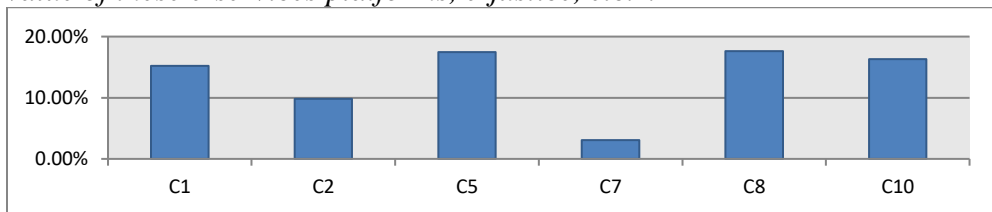
Figure 6. Emergence of Telecommunications Infrastructure Variable among the Companies Surveyed

State Strategy

This variable was identified by respondents (5/13), as illustrated in Figure 7. Presently, the State is almost the only actor overseeing this digitization sector, with all that it requires in terms of investment, infrastructure, regulation, coordination, etc. Company 1: *"[...] In my opinion, evaluation and sanctions in case of illegal use will help to strengthen the public value of public administrations"*.

Company 10: *"[...] I mean by visibility that coordinates e-government and other services in Morocco, a strategic platform that determines the criteria for the infrastructure to be acquired, the nature of the human skills ... whatever the ministry or administration that is seeking to integrate digitization ... the different ministries and administrations"*.

Company 5: *"[...] initially, the digitization of the justice system was launched by the State. For us, it is a major project that will change the structure and the way we work ... by discovering that there are many strategic limitations that need to be resolved quickly..."*.
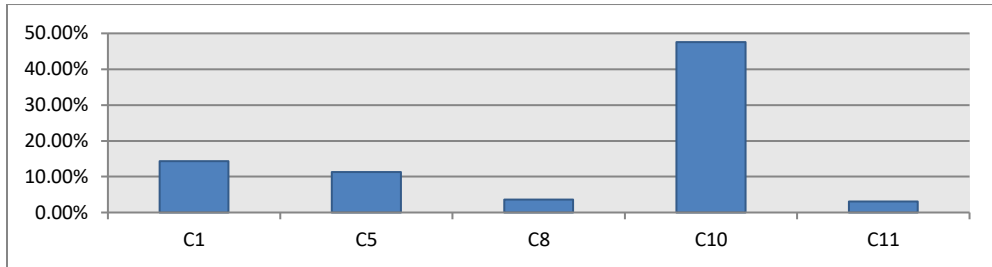
Figure 7. Emergence of State Strategy Variable among the Companies Surveyed

5.5.   Proposal for a Simplified Conceptual Model

This study utilized the Delone and Mclean (2016) model, which offers the researcher a selection of dependent variables. This is because no single measure inherently surpasses others as a baseline (Delone & Mclean, 2016). Furthermore, this model has already been adapted to the context of research aimed at measuring public value (Kayode, 2022).

In addition to the 7 dimensions of this model, interviews with private companies revealed six variables known as emergent variables: Human Capital, Telecommunications Infrastructure, State Strategy, Continuing Education, Willingness to Use, and Culture. These variables were identified in relation to public value, guiding the selection of factors that significantly impact the perceived value of e-government in Morocco (Figure 8).

Figure 8. Conceptual Model of the Proposed Dimensions with Direct Positive Effect on Public Value
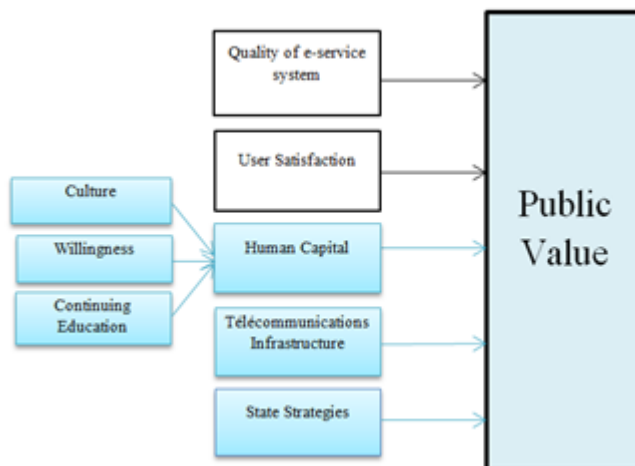
Source: Authors

The results of this study leads to the conclusion that within the Moroccan administration context, the two predetermined variables of Delone and Mclean, namely user satisfaction and system quality, along with emerging variables like Human Capital, Telecommunications Infrastructure and State

Strategy, have a direct and positive influence on the public value of e-government, as percieved by private sector professionals.

6.   Discussion and Conclusion

This study focused on private companies' evaluation of the public value of e-government in Morocco, using a hybrid exploratory qualitative approach. This approach was applied to 13 companies with professional links to administrations in the process of digitization.

An attempt has been made to conceive a simple conceptual model composed of five variables (Figure 9), incorporating the notion of "public value" from the latest version of the Delone and McLean (2016) model. This was also validated by other research as an explanatory variable for evaluating e-government (Omar *et al.,* 2011; Twizeyimana & Andersson, 2019). The five aspects of this proposed model clearly demonstrate their direct positive effects on the public value of e-government in Morocco.

In a distinct context, Alhanatleh *et al.* (2022) explored the public value of e-government in Jordan using the information system success model. The findings highlight that among the system, information, and service quality factors, service quality stands out as the main determinant for enhancing citizens' satisfaction and promoting their intention to utilize online services.

Adding to this perspective, Mensah *et al*. (2022) asserts that the integration of ICT into e-government requires the creation of public value to encourage the adoption of e-services. Their findings reveal significant links between factors such as information quality, service parameters, user orientation, efficiency, openness and responsiveness, and the public value associated with e-government. Furthermore, the study confirms that this public value directly influences the intention to adopt e-government services. Additionally, the study of Ramadhane *et al.*(2023) provides a perspective on public value based on the e-government maturity model. It identifies a number of criteria, including accessibility, user interaction, efficiency, reliability, transparency and openness, quality of information, respect for privacy, and control of corruption.

Consequently, system quality is based on technical aspects such as ease of access, system reliability and reply time, as perceived by users (DeLone & McLean, 1992). In parallel, Sedera *et al*. (2004) identified complementary measures to the DeLone and McLean (1992) criteria in terms of the different categories of personnel (strategic, user and technical). Therefore, it was recommended that future studies focuses on the "user" category (management + operational), which has the most significant perception of e-services success. These findings overlap with the conclusions of Kayode's (2022) study concerning the public value of e-government, which further shows a

significant influence of quality dimensions on use, satisfaction, and public value.

The "user satisfaction" dimension evaluates the user's overall opinion of the information system (Delone & McLean, 2016). Interviewees clearly expressed their satisfaction with the use of e-services, using language that aligns with the criteria defined by Khodakarami and Chan (2011) to study the factors contributing to successful CRM. The research found that when systems effectively meet user expectations and employees have the skills required to use these systems, they are more likely to leverage the systems' capabilities to support customer relationship management processes. This in turn leads to greater satisfaction with the outcomes, which include elements such as user trust, fairness, transparency, administrative efficiency, cost reduction, and time savings. Consequently, the terminology associated with satisfaction in this context is dynamic and evolving, reflecting the specific frame of reference in which it develops.

The interviews revealed six emerging variables in addition to those identified in the literature: "Human Capital, Telecommunications Infrastructure, State Strategy, Continuing Education, Willingness to Use, and Culture".

In other words, the composition of an information system comprises Structural Capital (SC) and Human Capital (HC) which reflects knowledge, as well as Intangible Capital (IC), which signifies performance or public value within public organisations. A close correlation between SC and HC materializes in the use of knowledge and information by the HC (Edvinsson & Malone, 1997).

The "Continuing Education, willingness to use, and Culture" variables underline the importance of investing in education and skills of HCs to ensure that they master the technologies. Simultaneously, this investment promotes the acquisition of a culture of transparency, trust,and other attitudes in line with the characteristics of public value. This culture will help to promote effectiveness, efficiency, and ultimately commitment to the administration's projects on the part of the personnel concerned.

The "State strategy" variable seems to be an element that can directly impact the performance and perception of the public value of e-government in Morocco, and probably in similar emerging countries where the State plays a central role in investment within this area. For example, ensuring the fairness of an electronic services system, one of the indicators of the public value of e-government, could prove difficult without a telecommunications network covering the entire country.

This research examined the viewpoints of professional managers by aligning the approach with the recommendation of Twizeyimana (2023), who outlined

the importance of analysing the phenomenon of e-government public value creation and gaining insights from diverse perspectives of stakeholders.

In conclusion, this study shares the conviction of Delone and McLean (2016). According to them, an information system can impact levels beyond the individual and organizational spheres. In this sense, the success of e-services systems, which generate perceived usefulness and public values based on tangible principles of transparency, inclusion, fairness, empathy, and trust, can make real contribution to the well-being of the society.

7.   Research Implications and Perspectives

The findings of this study have crucial practical implications for the sustainable success of e-government public value in Morocco. These implications include innovative investment in cultivating emerging skills, creating national technology incubators to promote local innovation, and supporting start-ups specializing in government solutions. At the same time, effective communication of the benefits of e-government requires innovative strategies, such as the use of social media and interactive campaigns to sensitize and actively involve citizens. Public-private collaboration can be strengthened through innovative partnerships, and organizational culture can be improved by training and awareness programmes focused on cultural change. At the political level, tax incentives for digital transformation and innovative international collaborations can propel Morocco as a regional technology leader. By adopting innovative approaches, Morocco can overcome today's e-government challenges and position itself as a pioneer, bringing tangible benefits to citizens and reinforcing national competitiveness on a global stage.

Regarding future prospects, researchers should increasingly leverage unexplored emerging variables unique to the Moroccan context. They should also explore the application of quantitative methods and seek replications in diverse urban and regional settings within Morocco.

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Analyse Socio-Economique des Services Ecosystémiques Forestiers en Zones Soudanienne et Soudano-Sahélienne au Burkina Faso

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Résumé

        Dans les pays du Sahel, les écosystèmes forestiers sont menacés et la connaissance de l'état de leurs services demeure une question de recherche à explorer en fonction des zones climatiques. Cette étude vise à analyser les services écosystémiques forestiers dans les communes de Nobéré (zone soudanienne) et Lâ-Toden (zone soudano-sahélienne) au Burkina Faso. Les forêts sont caractérisées à partir des inventaires floristiques réalisés dans 75 placettes (900 m^2 chacune) et de la détermination de la richesse spécifique, la densité, des indices de rareté, d'équitabilité de Piéloul et de diversité de Shannon des espèces forestières. L'analyse des données d'enquêtes conduites auprès de 298 exploitants a permis d'estimer la valeur économique annuelle (avril 2021 à mai 2022) des services écosystémiques forestiers à travers l'applicaion de l'approche d'évaluation des écosystèmes pour le millénaire.

Au total, 42 et 38 espèces ont recensées respectivement à Nobéré et Lâ-Toden. Les services écosystémiques les plus cités à Nobéré sont le maintien de la fertilité du sol (91,9%), refuge d'espèces végétales (89,9%), produits forestiers non ligneux (89,2%). A Lâ-Toden, ce sont la protection des sols contre l'érosion (56%), beauté du paysage (56%), purification de l'air (56%). La valeur économique des services d'approvisionnement à Nobéré et Lâ-Toden est estimée respectivement à 326 061 793,9 FCFA/an et 136 629 986,4 FCFA/an. Ainsi, la gestion durable des services écosystémiques forestiers s'imposent comme une priorité de l'heure pour le bien-être des populations locales en fonction des zones climatiques.

Mots-clés: Agroécosystème, changement climatique, forêts, services écosystémiques, valeur économique

Socio-Economic Analysis of Forest Ecosystem Services in Soudano-Sahelian and Soudanian Zones of Burkina Faso

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Abstract
        In Sahel's countries, forest ecosystems are threatened and knowledge of the state of their services remains a research question to be explored according to climatic zones. This study aims to analyze forest ecosystem services in the communes of Nobéré (Sudanian zone) and Lâ-Toden (Sudano-Sahelian zone) in Burkina Faso. The forests are characterized based on floristic inventories carried out in 75 plots (each 900 m2) and determination of specific richness, density, rarity, Piélou, profitability indices and Shannon diversity of forest species. The analysis of survey data conducted with 298 operators made it possible to estimate annual economic value (april 2021 to may 2022) of forest ecosystem services through application of Millennium

ecosystem assessment approach. In total, 42 and 38 species were recorde in Nobéré and Lâ-Toden, respectively. The results show that the forests of Nobéré and Lâ-Toden are distinguished by a divergence in their characteristics. The most cited ecosystem services in Nobéré are the maintenance of soil fertility (91.9%), refuge of plant species (89.9%), non-timber forest products (89.2%). In Lâ-Toden, these are soil protection against erosion (56%), beauty of the landscape (56%), air purification (56%). The economic value of supply services in Nobéré and Lâ-Toden is estimated at FCFA/year 326,061,793.9 and 4 FCFA/year 136,629,986. respectively. Thus, the sustainable management of forest ecosystem services is emerging as a current priority for the well-being of local populations depending on climatic zones.

Introduction

Les écosystèmes fournissent des avantages sociaaux et écologiques tels que l'alimentation, l'eau, le bois, les fibres, la régulation du climat et des inondations (Costanza, 2012). Ces avanatgs tirés des écosystèmes, appélés services écosystémiques, sont reparti par le Millennium Ecosystem Assessment (2005) en quatre groupes : approvisionnement, régulation, support et culturel (Sambou et *al.,* 2018 ; Ouédraogo et *al.,* 2020). Les services écosystémiques sont les bénéfices résultant des fonctions de l'écosystème, depuis le bois de construction et la nourriture jusqu'à la régulation des ressources en eau et du climat (Daly-Hassen, 2017). Ce sont des biens matériels et immatériels que les écosystèmes fournissent aux Hommes (Ouédraogo et *al.,* 2020). Selon Pedrono et *al.* (2015), ils constituent un rempart face au changement climatique.

Les services écosystémiques sont liés directement ou indirectement au bien-être humain. Les services directs sont représentés par la fourniture d'une vaste gamme de produits (produits forestiers ligneux et non ligneux) destinés à l'alimentation humaine et/ou animale, à l'énergie et à la construction. Les services indirects sont en grande partie des fonctions écologiques qui soutiennent la production alimentaire à savoir l'eau potable, les éléments nutritifs, et une qualité de vie améliorée (MEA 2005). Ils permettent de valoriser les écosystèmes à travers leur contribution dans la vie socioéconomique des populations (Walter et *al.,* 2015).

Les services écosystémiques proviennent aussi des agroécosystèmes qui sont des écosystèmes modifiés et gérés par l'Homme (Rebulard, 2020). L'exploitant des agroécosystèmes diversifie sa production tout en bénéficiant des services écologiques (Neyton et *al.,* 2018 ; Rebulard, 2020). Cependant,

les services écosystémiques sont des biens publics exposés à une exploitation anarchique (Mutuga, 2016). La durabilité des services écosystémiques et des écosystèmes pourvoyeurs est menacée non seulement par la surexploitation mais aussi par le changement climatique (Belem et al., 2018). Ainsi, attribuer une valeur économique aux services écosystémiques pourrait amener l'Homme à bien gérer les écosystèmes et leurs services afin d'assurer leur durabilité (Berthet, 2016). De nombreux travaux scientifiques ont évaluer les services écosystèmes forestiers (Sambou et *al.*, 2018 ; Ouédraogo et *al.,* 2020). Toutefois, ces travaux ont peu abordé les services écosystémiques forestiers de plusieurs zones agro-climatiques à la fois. Les travaux de recherches n'ont concerné que les services écosystémiques forestiers d'une zone agro-climatique (Traoré et *al.,* 2011 ; Bene et Fournier, 2015 ; Daly-Hassen, 2017 ; Ilou et *al.,* 2019). L'analyse comparative des services écosystémiques forestiers en fonction des zones climatiques demeurent une question de recherche à explorer dans les pays du Sahel, en particulier au Burkina Faso.

L'objectif principal de cette étude est de déterminer la valeur économique des services écosystémiques fournis par les forêts aménagées de Nobéré et Lâ-Toden localisées respectivement dans les zones, soudanienne et soudano-sahélienne du Burkina Faso. L'article est structuré en cinq parties à savoir l'introduction, la méthodologie, les résultats suivis de la discussion et la conclusion.

Matériels et méthodes
Zone d'étude

L'étude a été conduite dans les Communes de Nobéré et Lâ-Toden (Figure 1). Le choix de ces communes est basé sur leur divergence climatique et leur appartenance aux zones d'intervention du projet de gouvernance locale des ressources forestières (WEOOG-PAANI) mis en œuvre par l'ONG Tree Aid.
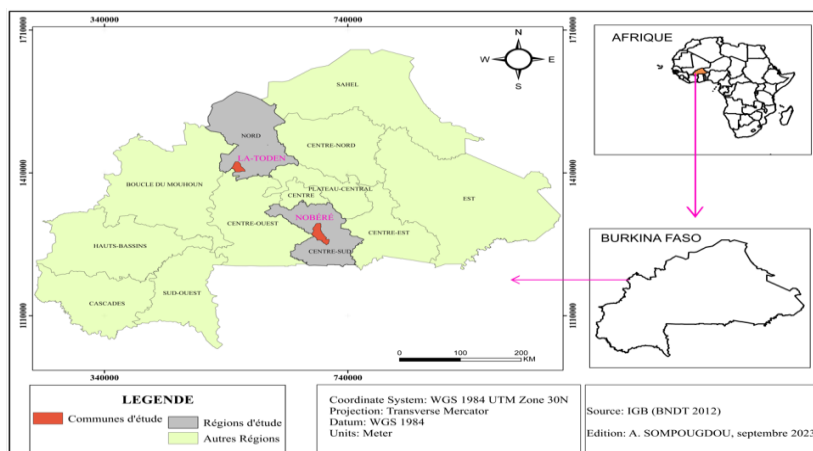

Figure 1. Carte de localisation géographique des zones d'étude

La Commune de Nobéré est située dans la région du Centre-Sud, dans la province du Zoundwéogo et localisée entre la latitude 11° 25' et 11° 45' Nord et la longitude 1° 20' et 1° 84' Ouest. . Elle couvre une superficie de 523 km², incluant une partie du Parc national Kaboré Tambi (PNKT) (Guiatin, 2015). Elle appartient à la zone nord soudanienne avec une pluviométrie annuelle oscillant entre 700 et 1000 mm avec des températures moyennes annuelles varient entre 29°C et 38°C (Dipama, 2010 ; Ouédraogo, 2010). Les formations végétales rencontrées dans la Commune de Nobéré sont du type forêts claires, savanes arborées, savanes arbustives, savanes boisées ainsi que des fourrées. La strate herbacée est actuellement dominée par *Andropogon gayanus.* Par contre la strate ligneuse est dominée entre autres par *Vitellaria paradoxa* et *Khaya senegalensis*. A. Juss. (Ouédraogo, 2010). Le Parc national Tambi Kaboré (PNKT) constitue un potentiel ligneux très important, il occupe environ 5100 ha de superficie boisée de la Commune (Ouédraogo, 2010). Nobéré compte 28 villages avec une population de 39492 habitants, dont 52,7% de femmes, qui mènent principalement l'agriculture, l'élevage, le maraîchage et le commerce (INSD, 2022).

La Commune de Lâ-Toden est situé dans la région du Nord, dans la province du Passoré et localisée entre la latitude 12° 51' Nord et la longitude 9° 29' Ouest. Elle couvre une superficie de 276,7 km^2 et appartient à la zone soudano-sahélienne avec une pluviométrie comprise entre 600 et 700 mm et des températures comprises entre 30°C et 45°C (Dipama, 2010). Le type de formation végétale dominant est la savane arborée à arbustive avec comme principales espèces rencontrées *Vitellaria paradoxa* C.F.Gaertn*., Anogeissus leiocarpa* (DC.) Guill. & Per*, Combretum micranthum* G. Don et *Lannea microcarpa* Engel. & K.Krause. La commune compte 16 villages, avec une population estimée à 39128 habitants dont 54,6% de femmes qui ont pour l'agriculture avec l'élevage comme principales activités économiques et premières sources de revenus (INSD, 2022). Parallèlement, ces populations mènent quelques activités commerciales et exploitent les produits forestiers non ligneux (PFNL) qui constituent à la fois des compléments alimentaires et des sources de revenus.

Collecte des données

Les villages impliqués dans l'exploitation des forêts aménagées de Nobéré et de Lâ-Toden ont fait l'objet d'une enquête ethnobotanique afin d'identifier les services écosystémiques et les espèces utilisées. L'enquête a concerné 12 villages à Nobéré et 10 villages à Lâ-Toden. La taille de l'échantillon a été estimée selon la formule de Rea et *al.* (1997) :

$$N = \frac{tp^2 \ x \ P(1-P) \ x \ N}{tp^2 \ x \ P(1-P)+(N-1) \ x \ y^2} \tag{1}$$

Avec n : taille de l'échantillon, N : taille de la population cible, P : proportion attendue d'une réponse de la population (fixée à 0,5 par défaut), tp : intervalle de confiance d'échantillonnage (1,96), y : marge d'erreur d'échantillonnage (8 %).

Au total, 148 exploitants à Nobéré (villages de Soulougré, Tewaka, Pegwendé, Passentinga, Tamsé, Bisboumbou, Kougréssincé, Togsé, Barcé, Dakiecma, Kataga et Koakin) et 150 exploitants à Lâ-Toden (villages de Sissamba, Ramessoum, Pendogo, La-Toden, Bissiga, Kollo, Minissia, Baribsi, Titon et Loungo) ont été enquêtés. Ces exploitatants ont été sélectionnés de manière alétoire dans les villages.

Le questionnaire a été conçu avec l'outil kobotoolbox puis téléchargé sur une tablette grâce à l'application KoboCollect version Android pour la collecte de données de terrain. Le questionnaire a été administré de façon individuelle à travers des entretiens semi-structurés avec l'aide d'un guide-interprète. Il a porté sur les caractéristiques sociodémographiques des enquêtés (nom et prénom, sexe, profession, situation matrimoniale, origine, niveau d'instruction, activité principale, etc.), les différents services rendus par la forêt et les essences forestières utilisées. Les services d'approvisionnement ont fait l'objet d'une enquête de marché afin de déterminer leurs valeurs économiques. Les informations collectées sont les quantités de produit exploité et les prix unitaires.

Les services d'approvisionnement ont fait l'objet d'une enquête de marché afin de déterminer leurs valeurs économiques annuelles de avril 2021 à mai 2022. Les informations collectées sont les quantités de produits exploités et leurs prix unitaires.

Des inventaires floristiques ont été réalisés dans des placettes de 900 m² (30 m × 30 m) (Thiombiano *et al.*, 2016). Les paramètres dendrométriques ont été relevés de façon systématique dans 31placettes à Nobéré et 44 placettes à Lâ-Toden sur toutes les surfaces forestières. Un ruban de 50 m et des jalons ont été utilisés pour mesurer et repérer les placettes, un ruban pi pour mesurer le diamètre des arbres et les données collectées ont été consignées dans des fiches d'inventaire forestier qui comportaient des données sur les caractéristiques stationnelles de la placette (relief dominant, position topographique, type de sol, traces d'activités anthropiques) et les ligneux adultes (circonférence du tronc à hauteur de poitrine ≥ 15,7 cm ou diamètre ≥ 5 cm mesuré à 1,3 m au-dessus du sol, la hauteur, et l'état sanitaire). Les données collectées ont permis de confronter les réponses des informateurs aux données de terrain à travers la richesse spécifique. et l'indice de rareté des espèces.

Analyse des données

L'analyse des données a consisté à estimer les paramètres dendrométriques et la valeur économique des services forestiers. Les paramètres calculés sont la richesse spécifique, la densité, la fréquence, les indices de diversité de Shannon, d'équitabilité de Piélou et de rareté. La détermination de la valeur économique est basée sur les principes de MEA (2005).

La richesse spécifique (famille, genre et espèce) a été déterminée à partir de la liste floristique obtenue à partir des relevés effectués dans les forêts aménagées. C'est le nombre total d'espèces que comporte le peuplement considéré dans un écosystème donné.

La densité est le nombre d'individus par unité de surface. Elle s'exprime en nombre d'individus/ha.

$$\text{Densité} = \frac{\text{Nombre total d'arbres de la placette}}{\text{Superficie de la placette (exprimée en hectare)}} \qquad (2)$$

La fréquence des espèces a été évaluée à partir du nombre de relevés de chaque espèce et le nombre totale de celles-ci.

$$\text{Fréquence} = \frac{\text{Nombre de relevés dans lesquels l'espèce est présente}}{\text{Nombre total de relevés}} \qquad (3)$$

L'indice de diversité de Shannon (H) est déterminé à partir du nombre total des espèces et l'abondance relative de la n$^{\text{ième}}$ espèce dans une placette.

$$H = -\sum_{i=1}^{S} \text{pi} \ln \text{pi} \qquad (4)$$

Avec S = nombre total des espèces (richesse) et pi = est l'abondance relative de l'n$^{\text{ième}}$ espèce dans une placette.

L'indice d'équitabilité de Piélou (EH) est évalué à partir de l'indice de Shannon et du nombre des espèces.

$$EH = \frac{H}{\ln S} \qquad (5)$$

Avec H = indice de Shannon et S = nombre total des espèces (richesse)

L'indice de rareté des espèces a été calculé suivant l'équation de Géhu et Géhu (1980) cité par Traoré et al. (2011) :

$$RI = (1 - \frac{ni}{N}) \times 100 \qquad (6)$$

Avec RI = indice de rareté, ni = nombre de relevés dans lesquels l'espèce i est présente et N = nombre total de relevés.

Selon les seuils d'interprétation de l'indice de rareté proposé par Traoré et al. (2011), lorsque RI < 60 %, les espèces sont dites très fréquentes. Lorsque 60 ≤ RI < 80 %, elles sont moyennement fréquentes. Et lorsque RI ≥ 80 %, elles sont dites rares.

La densité et de la fréquence ont fait l'objet d'une analyse de variance au seuil de 5 % avec comme facteur la commune (Nobéré et Lâ-Toden). Un test d'indépendance des variables Khi-deux au seuil de 5 % a été appliqué aux activités anthropiques (traces d'activités agricoles, traces de pâturage, traces de coupe récente de bois et traces de passage de feu). Ces différents tests statistiques ont été réalisés avec le logiciel SPSS 20.

Les services écosystémiques cités par les populations locales ont été rangés en catégories suivant l'approche du Millenium Ecosysfem Assessment (2005). L'importance des espèces citées par les populations a été déterminée à partir du calcul de la Valeur d'usage (VU) qui est un indice utilisé pour évaluer l'importance d'une plante dans une communauté (Houéhanou *et al.*, 2016). La fréquence de citation des services écosystémiques et des espèces citées a été calculée par la formule suivante :

$$FR = \frac{NC}{N} \tag{7}$$

Avec FR : Fréquence relative de citations, NC : Nombre de citations et N : nombre total d'informateurs interviewés.

La valeur d'usage a été calculé selon la formule de Phillips et Gentry (1993).

$$VU = \sum_{i=1}^{In} \frac{Ui}{N} \tag{8}$$

Avec VU : Valeur d'usage, Ui : nombre d'usages mentionnés par un informateur, N : nombre total d'informateurs interviewés. La valeur économique des services d'approvisionnement a été déterminée en faisant la somme des valeurs économiques annuelles de chaque type de service d'approvisionnement (Tableau 1). La valeur économique annuel de chaque type de service est calculée à partir de la méthode de prix de marché en multipliant les quantités par les prix et par le nombre d'acteurs (Somda et Awaïss, 2013). La valeur ainsi obtenue est qualifiée de valeur d'usage direct.

Tableau 1. Evaluation économique des services d'approvisionnement

Indicateur	Mode de calcul	Signification des variables	Produits
Valeur de PFNL (V1)	$V1 = \sum_{i=1}^{n} Qi \times Ni \times Pi$	Qi = production moyenne d'un produit ; Ni = nombre d'exploitants d'un produit ; Pi = prix sur le marché d'un produit ; n = nombre de produit	Fruit, feuille, fleur, écorce, amande, miel.
Valeur des produits agricole (V2)	$V2 = \sum_{i=1}^{n} Qi \times Ni \times Pi$	Qi = production moyenne d'un produit ; Ni = nombre d'exploitants d'un produit ; Pi = prix sur le marché d'un produit ; n = nombre de produit	Maïs, sorgho, petit mil, niébé, …
Valeur des produits d'élevage (V3)	$V3 = \sum_{i=1}^{n} Qi \times Ni \times Pi$	Qi = production moyenne d'un produit ; Ni = nombre d'exploitants d'un produit ; Pi = prix sur le marché d'un produit ; n = nombre de produit	Bovin, ovin, caprin, volaille, …
Valeur économique	$VA = \sum_{i=1}^{n} Vi$	Vi = valeur d'un type de service d'approvisionnement	PFNL, produits agricole, produits d'élevage.

Résultats

Caractérisation des forêts

Le tableau 2 présente la répartition des espèces ainsi que les indices de Shannon et de Piélou par Commune. Au total 42 espèces reparties en 37 genres et 19 familles ont été recensées dans la forêt aménagée de Nobéré puis 38 espèces reparties en 32 genres et 16 familles dans la forêt aménagée de Lâ-Toden. L'indice de diversité de Shannon est de 2,8 à Nobéré et 2,6 à Lâ-Toden ; celui d'équitabilité de Piélou est de 0,8 dans les deux communes (Nobéré et Lâ-Toden). Dans ces deux communes, l'indice de diversité est $2,5 \leq H < 4$, ce qui signifie une diversité moyenne des espèces ligneuses. L'indice d'équitabilité de Piélou a la même valeur dans les deux communes (0,8). Ce qui montre une répartition régulière identique des individus entre les espèces dans les communes.

Tableau 2. Richesse floristique des forêts aménagées

Communes	Espèces	Genres	Familles	Indice de diversité de Shannon	Indice d'équitabilité de Piélou
Nobéré	42	37	19	2,8	0,8
Lâ-Toden	38	32	16	2,6	0,8

Source : Données d'inventaire forestier

Les principales espèces les plus fréquentes à Nobéré sont *Anogeissus leiocarpa* (71,0 %), *Balanites aegyptiaca* (54,8 %), *Senegalia gourmaensis* (51,6 %) *et Vitellaria paradoxa* (48,4 %). A Lâ-Toden, ce sont *Lannea microcarpa* (40,9 %), *Vitellaria paradoxa* (29,5 %), *Senegalia macrostachya* (25,0 %), *Diospyros mespiliformis* (22,7 %) et *Sclerocarya birrea* (13,6 %) qui sont les espèces les plus rencontrées (Figure 4). Les résultats montrent que certaines espèces sont présentes à Nobéré mais absentes à Lâ-Toden et vice versa. La plupart des espèces présentes dans les deux Communes sont plus fréquentes à Nobéré qu'à Lâ-Toden. L'analyse de la variance des fréquences des espèces montre qu'il n'y a pas de différence significative entre les Communes (p = 0,132). Les fréquences moyennes sont 15,8 % à Nobéré et 9,5 % à Lâ-Toden.

La densité moyenne des ligneux dans les Communes de Nobéré et de Lâ-Toden sont respectivement 255,2 individus/ha et 45,2 individus/ha. L'analyse de la variance indique qu'il y a une différence significative entre les Communes (p = 0,000).
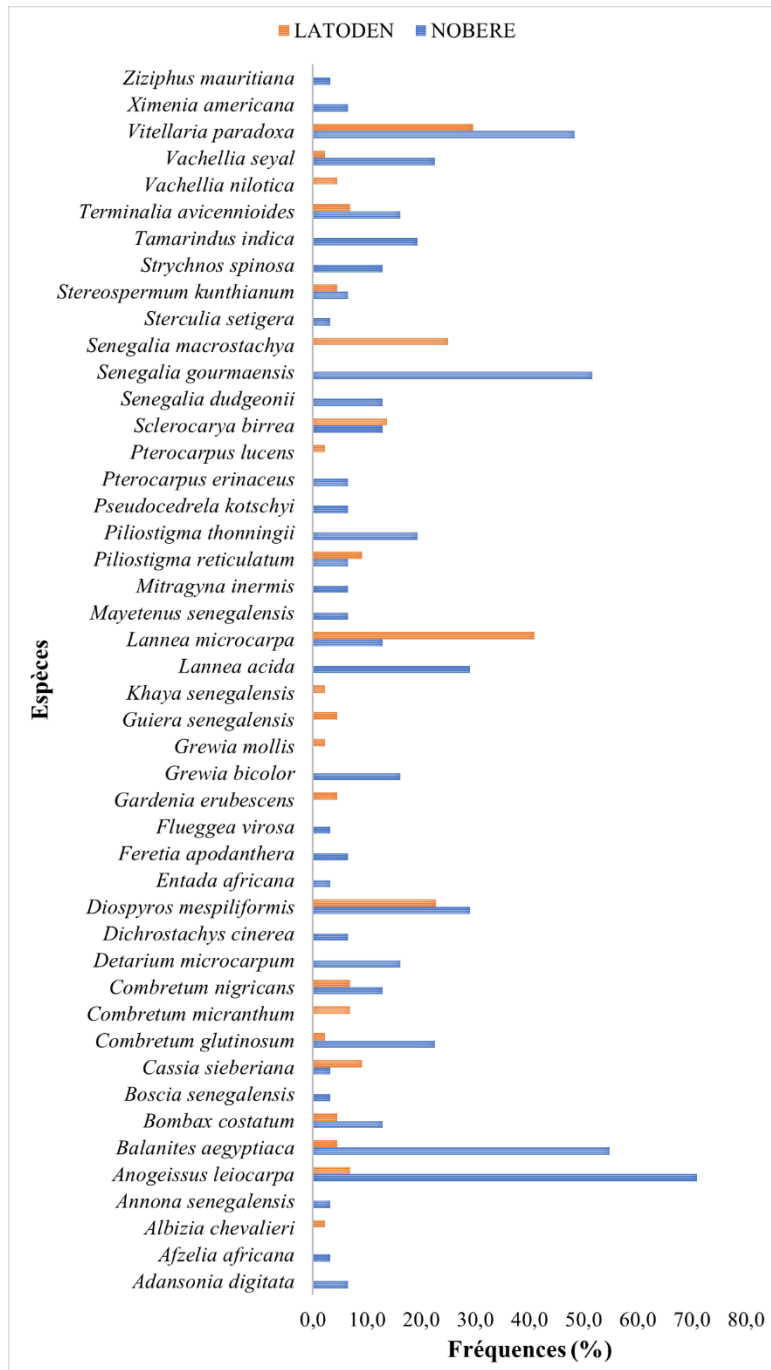
Figure 4. Fréquence des espèces dans les communes
Source : Données d'inventaire forestier

Les figures 5 et 6 présentent les indices de rareté des espèces dans les forêts aménagées de Nobéré et de Lâ-Toden. L'analyse des indices de rareté montre qu'à Nobéré, 11 % des espèces sont fréquentes, 11 % sont moyennement fréquentes et 78 % sont rares. A Lâ-Toden, 4% des espèces sont fréquentes, 13 % sont moyennement fréquentes et 83 % sont rares. Les résultats montrent que plus de 75 % des espèces sont rares dans les deux Communes. Toutefois, la proportion d'espèces fréquentes est plus importante à Nobéré, comparativement à Lâ-Toden.
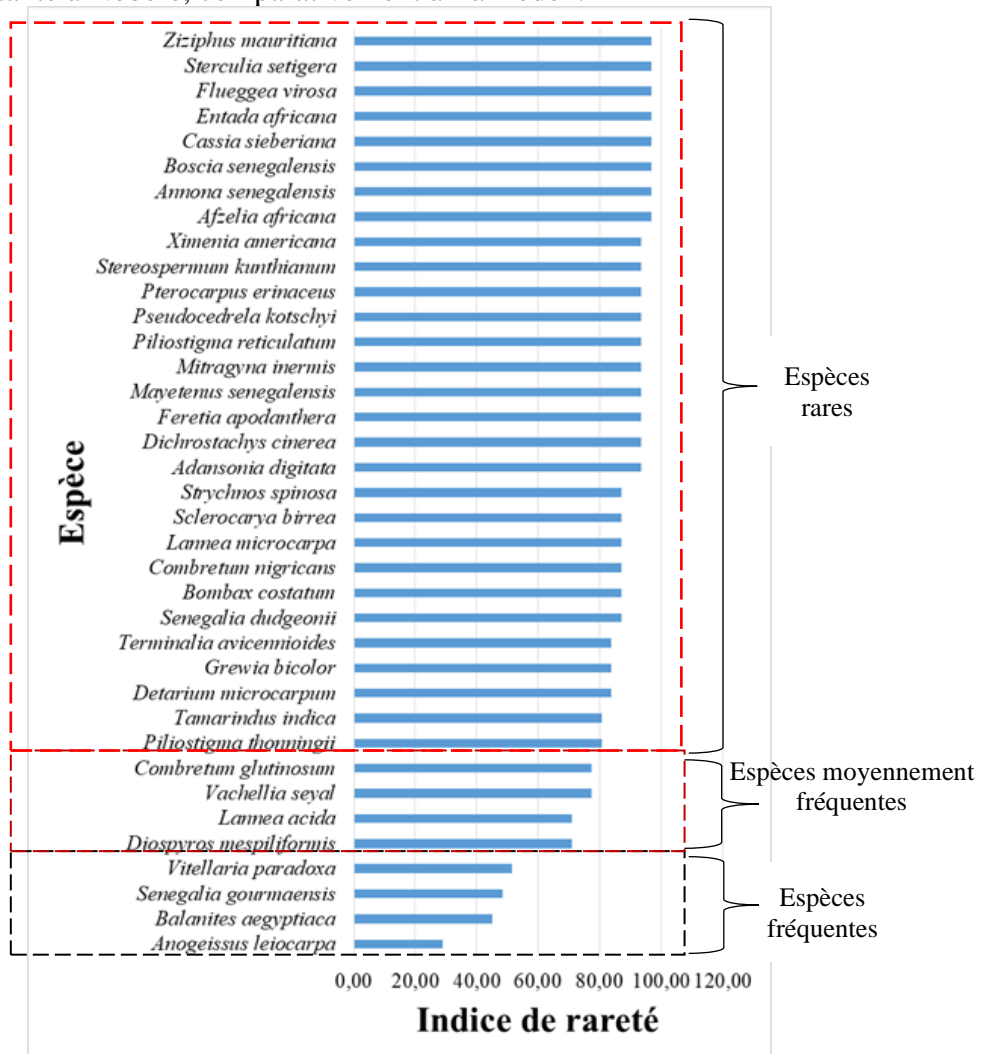
Figure 5. Indices de rareté des espèces dans la forêt aménagée de Nobéré
Sources : Données des enquêtes individuelles
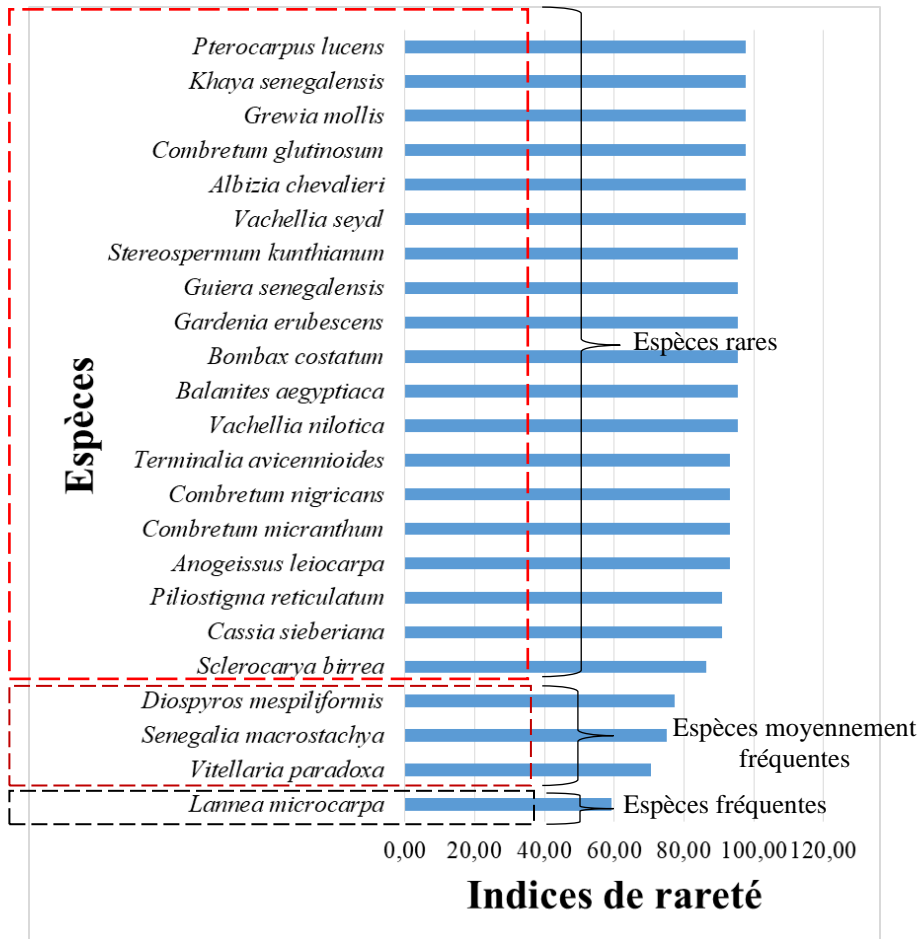
Figure 6. Indices de rareté des espèces dans les forêts aménagées de Lâ-Toden
Sources : Données des enquêtes individuelles

L'analyse montre une simularité de la manifestation des feux de brousse dans les forêts des deux communes (Figure 7 et 8). Par contre, les pratiques des activités agricoles, de la coupe du bois et du paturage varie selon les communes.
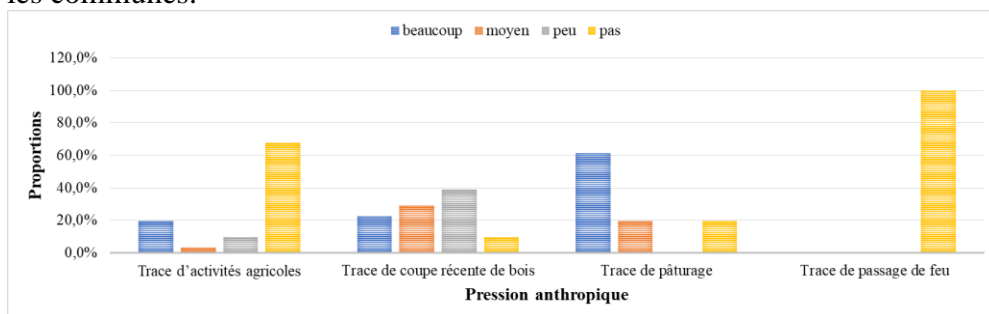
Figure 7. Manifestation de la pression anthropique dans la forêt aménagée de Nobéré
Source : Données d'inventaire forestier

Figure 8. Manisfestion de la pression anthropique dans les forêts aménagées de Lâ-Toden
Source : Données d'inventaire forestier

Les résultats du test statistique Khi-deux à Nobéré montent que les activités agricoles et de pâturage sont indépendantes de façon très significative (p = 0,000) avec une proportion élevée de pâturage lorsqu'il n'y a pas d'activités agricoles. La proportion élevée d'activités agricoles est sur des placettes où il y a eu coupe de bois. Selon le test Khi-deux, ces deux activités sont liées mais pas de façon significative (p = 0,209). La proportion de traces de pâturage montre qu'elle est plus élevée sur des placettes où il n'y a pas de coupe de bois et que ces deux activités ne sont donc pas liées. Ce résultat n'est pas statistiquement significatif (p = 0,372).

Tableau 3. Caractérisation de la pression anthropique à Nobéré

Pressions anthropiques	Traces d'activité agricoles	Traces de coupe de bois	Traces de pâturage
Traces d'activité agricole	-	Dépendantes	Indépendantes
Traces de coupe de bois	Dépendantes	-	Indépendantes
Traces de pâturage	Indépendantes	Indépendantes	-

Source : Données d'inventaire forestier

A Lâ-Toden, le test statistique Khi-deux présente des résultats similaires à ceux de Nobéré (Tableau 4). La proportion de traces de pâturage est plus élevée sur des placettes où il n'y a pas d'activités agricoles. Les deux activités sont donc significativement indépendantes (p = 0,012). Les activités agricoles et de coupe de bois sont liées. Ce lien est très significatif (p = 0,000) avec des proportions d'activités agricoles importantes en présence de traces de coupe de bois sur les placettes. L'analyse du test Khi-deux montre qu'il n'y a pas de lien significatif entre les activités de coupe de bois et les traces de pâturage (p = 0,858). Les proportions sont élevées au niveau du pâturage quand il n'y a pas de traces de coupe du bois sur les placettes.

Tableau 4. Caractérisation de la pression anthropique à Lâ-Toden

Pressions anthropiques	Traces d'activité agricole	Traces de coupe de bois	Traces de pâturage
Traces d'activité agricole	-	Dépendantes	Indépendantes
Traces de coupe de bois	Dépendantes	-	Indépendantes
Traces de pâturage	Indépendantes	Indépendantes	-

Source : Données d'inventaire forestier

Analyse socioéconomique des services écosystémiques

Au total, 29 services écosystémiques ont été identifiés par les personnes enquêtées dans les Communes de Nobéré et de Lâ-Toden, répartis en quatre catégories (

Tableau 5). La catégorie de service de production (41,2%) est plus citée à Nobéré, suivie des services de régulation (31,3%). A Lâ-Toden, ce sont les services de régulation et culturels qui sont les plus cités avec respectivement 39,5% et 22,4% de citation. La perception des services écosystémiques diffère ainsi d'une commune à l'autre.

Tableau 5. Fréquences relatives de citation des types de services écosystémiques

Services écosystémiques	Noberé (%)	Lâ-toden (%)
Services de production		
PFNL (fruit, feuille, fleur, écorce, …)	89,2	55,3
Eau de boisson (cours d'eau)	37,2	3,3
Production agricole	19,6	12,0
Production animale	42,6	1,3
Bois (bois de chauffe, bois de construction, bois artisanat)	72,3	2,7
Plantes médicinales	70,9	12,7
Pâturage d'animaux domestiques	60,8	6,7
Viande sauvage	13,5	1,3
Poissons	18,9	0,0
Miel	29,1	28,0
Semences d'espèces végétales	34,5	21,3
Paille	81,1	5,3
Fibres	35,8	7,3
Matériaux de construction (sable, graviers...)	26,4	1,3
Termites (alimentation de la volaille)	0,0	1,3
Services culturels		
Religion (sacrifices)	14,9	7,3
Espaces éducatifs (connaissance de la faune)	33,1	28,0
Espace de repos et de loisir	19,6	48,7
Touristique (vision de la faune)	16,9	47,3
Beauté du paysage	85,1	56,0
Services de régulation		
Purification de l'eau	67,6	52,7
Purification de l'air (air frais)	83,1	56,0

Services écosystémiques	Noberé (%)	Lâ-toden (%)
Régulation climatique (augmentation de la pluviométrie, lutte contre les vents)	79,1	54,0
Protection des sols contre l'érosion	88,5	56,0
Maintien de la fertilité du sol	91,9	55,3
Protection des cultures contre les ravageurs (lutte contre les maladies)	70,3	56,0
Services de support		
Refuge d'espèces végétales	89,9	55,3
Habitat de la faune (refuge d'espèces animales)	77,0	48,7
Formation des sols	85,1	54,0

Source : Données d'enquêtes individuelles

Usage des espèces forestières

Au total, 31 espèces ont été citées par les populations locales dans les Communes de Nobéré et de Lâ-Toden réparties en 31 genres et 18 familles. Parmi ces espèces, 16 sont identiques aux deux Communes. Cette richesse floristique représente 46,3 % des espèces inventoriées dans les forêts aménagées de Nobéré et de Lâ-Toden. 24 % des espèces citées ne figurent pas parmi les espèces inventoriées et 53,7 % des espèces inventoriées n'ont pas été citées par les populations. (Tableau 6). Quant au nombre d'espèces mentionnées par Commune, les résultats indiquent que le nombre d'espèces citées à Lâ-Toden (25 espèces) est supérieur à celui de Nobéré (22 espèces) avec, cependant, le même nombre de familles.

Tableau 6. Répartition des espèces citées par Commune

Commune	Espèces	Genres	Familles
Nobéré	22	22	14
Lâ-Toden	25	25	14

Source : données d'enquêtes terrain

La valeur d'usage exprime l'importance des espèces pour les populations. Les espèces les plus appréciées à Nobéré sont *Vitellaria paradoxa, Detarium microcarpum, Parkia biglobosa, Tamarindus indica* avec une valeur d'usage comprise entre 1,8 et 0,5. En plus de *Vitellaria paradoxa* (3,5) et *Parkia biglobosa* (0,8) qui sont aussi appréciées à Lâ-Toden, *Lannea microcarpa* (2,1) est également beaucoup utilisé (Tableau 7). Ces espèces sont citées dans plusieurs catégories d'usage telles que l'alimentation, la médecine, le fourrage, bois d'artisanat, bois de chauffe, bois de construction, fabrication de savons. Le nombre d'usages varie d'une espèce à l'autre. Les espèces ayant un nombre d'usages élevé à Nobéré sont *Detarium microcarpum* et *Vitellaria paradoxa*. A Lâ-Toden, ce sont *Vitellaria paradoxa (6)*, *Lannea microcarpa (5)*, *Balanites aegyptiaca (5)* et *Sclerocarya birrea (5)* qui possèdent un domaine d'utilisation élevé. Les usages de chacune de ces espèces sont rapportés au moins 25 fois. Ainsi, les espèces n'ont pas le même mode d'utilisation ni la même valeur pour les communautés de Nobéré et de Lâ-Toden.

Tableau 7. Valeur d'usage des espèces utilisées

Espèces citées	Nobéré			Lâ-Toden		
	NU	NUR	VU	NU	NUR	VU
Adansonia digitata	2,0	29,0	0,2	2,0	18,0	0,1
Afzelia africana	2,0	28,0	0,2	–	–	–
Annona senegalensis	–	–	–	2,0	2,0	0,0
Anogeissus leiocarpa	2,0	5,0	0,0	3,0	3,0	0,0
Azadirachta indica	–	–	–	4,0	63,0	0,4
Balanites aegyptiaca	2,0	8,0	0,1	5,0	39,0	0,3
Bombax costatum	4,0	39,0	0,3	4,0	21,0	0,1
Cassia sieberiana	1,0	1,0	0,0	2,0	2,0	0,0
Ceiba pentandra	2,0	2,0	0,0	–	–	–
Detarium microcarpum	5,0	95,0	0,6	3,0	13,0	0,1
Diospyros mespiliformis	1,0	2,0	0,0	3,0	13,0	0,1
Faidherbia albida	2,0	2,0	0,0	3,0	9,0	0,1
Ficus sycomorus	2,0	2,0	0,0	–	–	–
Gardenia erubescens	–	–	–	4,0	11,0	0,1
Guiera senegalensis	–	–	–	1,0	1,0	0,0
Khaya senegalensis	–	–	–	1,0	1,0	0,0
Lannea microcarpa	3,0	39,0	0,3	5,0	316,0	2,1
Parkia biglobosa	3,0	85,0	0,6	4,0	122,0	0,8
Piliostigma reticulatum	3,0	3,0	0,0	–	–	–
Pterocarpus erinaceus	–	–	–	3,0	3,0	0,0
Saba senegalensis	2,0	41,0	0,3	3,0	23,0	0,2
Sclerocarya birrea	–	–	–	5,0	11,0	0,1
Securidaca longipedunculata	4,0	3,0	0,0	2,0	6,0	0,0
Senegalia macrostachya	–	–	–	4,0	32,0	0,2
Strychnos spinosa	2,0	6,0	0,0	–	–	–
Tamarindus indica	3,0	77,0	0,5	4,0	32,0	0,2
Vachellia nilotica	1,0	1,0	0,0	3,0	3,0	0,0
Vitellaria paradoxa	5,0	260,0	1,8	6,0	527,0	3,5
Vitex doniana	2,0	2,0	0,0	–	–	–
Ximenia americana	2,0	2,0	0,0	4,0	29,0	0,2
Ziziphus mauritiana	–	–	–	3,0	13,0	0,1

NU : nombre d'usage ; NUR : nombre d'usage rapporté ; VU : valeur d'usage
Source : Données d'enquêtes individuelles

Valeur économique des services écosystémiques

Les agroécosystèmes exploités par les populations de Nobéré et de Lâ-Toden fournissent différents services d'approvisionnement tels que les produits forestiers non ligneux (PFNL), du bois, des produits agricoles et d'élevage. La valeurs économiques annuelles (avri 2021 à mai 2022) dont les quantités ont pu être estimées par les enquêtés ont été calculées (

Tableau 8).

Tableau 8. Valeur économique des services d'approvisionnement de Nobéré et Lâ-Toden

Services écosystémiques		Valeurs (FCFA/an)	
		Nobéré	Lâ-Todin
Production PFNL	*Afzelia africana*	34800	
	Adansonia digitata	45750	66000
	Azadirachta indica		44766,66667
	Balanites aegyptiaca		3025
	Bombax costatum	100066,6667	74250
	Detarium microcarpum	113110,7143	
	Lannea microcarpa	5250	40333,33333
	Parkia biglobosa	357410,2564	218196,9697
	Saba senegalensis	94937,5	23000
	Tamarindus indica	289763,5417	204141,6667
	Ziziphus mauritiana		4500
	Vitellaria paradoxa	1275423,81	1460190,476
	Miel	1053571,429	221850
	Valeur	3370083,917	2360254,113
Production agricole	Oseille		3000
	Pois de terre		2168328,646
	Aubergines	303125	
	Soja	575000	
	Sésame	1006725	
	Riz	939656,25	660000
	Sorgho	11004285,38	14624170,6
	Petit mil	720000	10866874,13
	Niébé (haricot)	1572352,941	9277838,69
	Maïs	20671363,64	5740008,673
	Arachide	2612194,196	3210878,049
	Coton	23582524,14	
	Valeur	62987226,55	46551098,78
Production animale	Chevaux		500000
	Porcs	990000	1755000
	Pintades	1776387,097	874666,6667
	Pigeons	28000	
	Canards	14000	
	Volailles (Poulets)	6595131,356	4365677,215
	Ovins (moutons)	18401500	10653820,75
	Caprins (chèvres)	10312714,29	12934000
	Bovins (bœufs)	206821494,3	44707500
	Asines (ânes)	14765256,41	11923704,55
	Valeur	259704483,4	87714369,18
Valeur économique		326.061793,87	136 625 722,08

Source : Données d'enquêtes individuelles

De façon générale, la valeur de la production de Nobéré (326 061 793,9 FCFA/an) est largement supérieure à celle de Lâ-Toden (136 629 986,4

FCFA/an). Dans chaque Commune, la production d'élevage est plus importante avec 259 704 483,4 FCFA/an à Nobéré et 87 714 369,2 FCFA/an à Lâ-Toden suivi de la production agricole avec 62 987 226,6 FCFA/an à Nobéré et 46 778 438,1 FCFA/an à Lâ-Toden et la production de PFNL avec 3 370 083,9 FCFA/an à Nobéré et 2 137 179,1 FCFA/an à Lâ-Toden. L'exploitation des services d'approvisionnement des agroécosystèmes constitue une source de revenu annuel pour les pouplations locales. Mais, ces services présentent différentes valeurs économiques entre les communes en fonction des zones climatiques.

Discussion

Les espèces qui interviennent dans le service d'approvisionnement sont exploitées dans les forêts, dans les parcs agroforestiers, dans les plantations autour des concessions. L'analyse de la composition floristique citée et inventoriée, montre que les forêts aménagées de Nobéré et Lâ-Toden constituent un potentiel ligneux fournisseur des produits forestiers aux populations locales avec une diversité moyenne des espèces ligneuses et une répartition régulière des individus entre ces espèces (Ouédraogo et *al.,* 2020). Ce constat montre également que les communautés ont une bonne connaissance des ressources forestières de leur zone. Cependant certaines espèces beaucoup utilisées n'apparaissent dans l'inventaire forestier mais ont été perçues autour des concessions pendant l'enquête, ce qui justifie leur citation par les populations. Parmi ces espèces figurent *Azadirachta indica, Faidherbia albida* et *Parkia biglobosa*. L'espèce *Parkia biglobosa* est prisée car selon les enquêtés qui l'ont mentionnée ; un de ses produits dérivés est le "soumbala", fabriqué à partir de ses graines et consommé dans l'alimentation (Dabiré et *al.,* 2020).

Compte tenu de l'intensité de prélèvement des organes des espèces forestières pour divers usages, ces espèces sont vulnérables, ce qui menacerait donc leur pérennité (Ouattara *et al.*, 2021). Les populations locales perçoivent déjà cette menace, car elles mentionnent la rareté de certaines espèces, l'existence de certaines actions anthropiques (traces d'activité agricole, de coupe de bois et de pâturage) et l'absence des feux de brousse dans ces forêts aménagées (Ouattara et *al.,* 2021). En effet, une faible citation soutient la rareté de certaines espèces. Comparativement à l'indice de rareté calculé, *Adansonia digitata*, *Detarium microcarpum*, *Tamarindus indica* citées à Nobéré et *Anogeissus leiocarpa*, *Bombax costatum* à Lâ-Toden sont rares (RI > 80%). Aussi, parmi les espèces perçues comme rares par les populations de Nobéré et Lâ-Toden, plusieurs n'apparaissent pas dans la composition floristique des forêts. Il y a donc une concordance entre la perception des populations et les constats faits sur le terrain sur la disponibilité des espèces.

Ce constat est rapporté par Cissé *et al.* (2018) et prouve que les populations locales ont une bonne connaissance de leur végétation.

Certaines espèces tels que *Vitellaria paradoxa* et *Senegalia gourmaensis* sont citée à Nobéré comme étant des espèces rare (faible citation), alors que leur indice de rareté montre qu'elles sont fréquentes. Il en est de même pour *Lannea microcarpa* et *Senegalia macrostachya* à Lâ-Toden. Cette contradiction peut s'expliquer par l'importance socioéconomique de ces espèces pour les populations locales qui influence leur perception (Guigma *et al.*, 2014). Ce point de vue est partagé par Yaovi et *al.* (2021) qui soutiennent que les populations affirment que ces espèces sont rares parce qu'elles ont une grande valeur, alors qu'en réalité, elles sont fréquentes ou moyennement fréquentes. Mais selon ces auteurs, cela ne remet pas en cause la perception locale comme un très bon indice dans l'appréciation de l'état de la végétation ; ce qui justifie d'ailleurs son utilisation dans plusieurs études (Traoré *et al.*, 2011 ; Ouoba *et al.*, 2014 ; Traoré *et al.*, 2019 ; Ouedraogo *et al.*, 2020 ; Ouattara *et al.*, 2021).

Quant aux causes de la rareté des espèces, les populations ont cité l'absence ou l'échec des reboisements, la pauvreté des sols, les feux de brousse, la mort des vieux individus à la suite de l'attaque des parasites (termites, champignons). Il y en a qui ont même évoqué la disparition naturelle des espèces et la peur de planter concernant l'espèce *Adansonia digitata*. En effet, selon un préjugé, la personne qui plante l'espèce mourra avant sa fructification. Aussi, l'absence de *Parkia biglobosa* dans la forêt a été justifiée selon certains enquêtés par le fait que l'espèce "n'aime" pas vivre isolée dans la forêt mais plutôt au milieu des habitations. Si les populations reconnaissent la dégradation des ressources végétales, les raisons ne sont pas toujours bien perçues par ces dernières, selon Traoré *et al.* (2011). Les causes souvent citées dans la zone soudano-sahélienne sont le déficit pluviométrique et la surexploitation (Hahn-Hadjali et Thiombiano, 2010 ; Traoré *et al.*, 2019 ; Ouattara *et al.*, 2021)

Les services rendus par les forêts aménagées de Nobéré et de Lâ-Toden ont été recensés auprès des populations. Les populations de Nobéré et de Lâ-Toden ont mentionné une diversité de services fournis par les forêts aménagées, regroupés dans les catégories de services du MEA (2005). Elles ont une conception locale et paysanne des services écosystémiques qui correspondent assez bien aux catégories du MEA (Bene et Fournier, 2015 ; Sambou *et al.*, 2018 ; Ouédraogo *et al.*, 2020).

La catégorie de services de production composée de PFNL pour l'alimentation, de bois (bois de chauffe, bois de construction, bois d'artisanat), de plantes médicinales est la plus perçu à Nobéré. Ces services interviennent dans la satisfaction des besoins de l'Homme et sont fondamentaux pour les populations locales (Ouédraogo *et al.*, 2020). Pour Bene et Fournier (2015), la

contribution des écosystèmes dans l'équilibre socioéconomique des populations locales n'est plus à démontrer. À Lâ-Toden, certains villages impliqués dans la gestion sont très éloignés de la forêt et préfèrent exploiter les produits forestiers dans leurs champs ou près de leurs concessions. Aussi, une partie de la forêt de Lâ-Toden est interdite d'accès sauf aux membres du comité de gestion. Cela, pour préserver la forêt et éviter une mauvaise exploitation ou une surexploitation des ressources (prélèvement de PFNL non mûr, de bois frais, les feux de brousse). A Nobéré, il n'y a pas cette interdiction, ce qui explique la citation élevée des services d'approvisionnement. Cependant, les services de régulation représentent la catégorie la plus perçue à Lâ-Toden. Cette catégorie vient après les services de production à Nobéré et les différents services ont été cités avec la même tendance. En effet, la présence de la forêt attenue l'effet des vents violents et des tempêtes, séquestre le carbone, ce qui purifie l'air et crée un microclimat aux alentours des forêts (Bene et Fournier, 2015). Selon Ouédraogo *et al.* (2020), cela correspond aux services de purification de l'air et d'amélioration de la vie mentionnés par les populations locales. Ainsi, les populations locales ont une bonne perception de la contribution des forêts dans la lutte contre le changement climatique, la dégradation des sols et contre les ravageurs des cultures, au regard des fréquences de citations du service de régulation dans les Communes de Nobéré et de Lâ-Toden. Cela est corroboré par Cissé et al. (2018). La population de Lâ-Toden a aussi beaucoup cité les services culturels. Le service religieux (sacrifices) a été mentionné avec une faible citation par certains enquêtés. En effet, une partie de la zone forestière est effectivement un site dédié au sacrifice mais elle ne se trouve pas dans la forêt aménagée.

Parmi les espèces utilisées, *Vitellaria paradoxa* est la plus citée dans les deux Communes. Cela prouve l'importance socioéconomique de l'espèce. Elle intervient dans plusieurs domaines et est une source de revenu pour les communautés (Ouédraogo *et al.*, 2020). Une enquêtée a signifié qu'un Projet leur donnait de l'argent pour leurs besoins en début de saison pluvieuse, en contrepartie de la collecte des amandes de karité, et leur donne plus si leur stock dépasse la somme reçue. *Lannea microcarpa* est la deuxième espèce la plus citée à Lâ-Toden. Elle possède aussi beaucoup d'usages dans la communauté et est collectée puis séchée et utilisée plus tard pour la fabrication de jus de raisin ou comme agent sucrant de bouillie de céréales. Thiombiano et *al*. (2010) et Dossou *et al*. (2016) estiment que c'est une espèce très importante en période de soudure pour les populations sahéliennes qu'il conviendrait de valoriser. Au-delà de ces espèces très prisées par les populations de Nobéré et de Lâ-Toden, l'importance de la valeur d'usage des espèces forestières a montré que plusieurs espèces interviennent dans le

domaine d'alimentation et les organes les plus utilisés sont les fruits, suivis des feuilles (Traoré *et al.*, 2011 ; Ouattara *et al.*, 2021).

Dans le domaine de la médecine, tous les enquêtés sont unanimes sur le fait que toutes les plantes soignent, mais l'on peut ignorer l'usage thérapeutique de certaines. Ce constat est rapporté par les populations du sud-ouest du Burkina Faso (Traoré *et al.*, 2011 ; Kaboré et *al.,* 2014). Selon elles, l'usage thérapeutique des plantes dépend des incantations que l'on prononce. Par ailleurs, les populations de Nobéré ont mentionné *Detarium microcarpum* comme étant un remède de la méningite. L'utilisation de *Detarium microcarpum* dans cette catégorie d'usage est également mentionnée par certains enquêtés de Lâ-Toden mais faiblement. L'espèce est aussi utilisée dans l'alimentation et c'est d'ailleurs la consommation du fruit qui soignerait cette pathologie (méningite), selon les enquêtés. Ce que confirme Abdulrahman (2022)

L'importance socioéconomique des espèces mentionnées par les populations locales montre qu'elles possèdent une valeur d'usage dans les Communes de Nobéré et de Lâ-Toden. Ces espèces forestières sont appréciées dans diverses régions de la zone soudanienne et jouent un rôle central dans la satisfaction des besoins alimentaires et commerciaux des populations locales (Traoré *et al.*, 2019 ; Ouattara *et al.*, 2021). Selon Ouédraogo *et al.* (2020), ces espèces ont une valeur d'usage élevée parce qu'elles ont plusieurs parties exploitées pour de nombreux usages.

L'évaluation des services d'approvisionnement a montré que la valeur économique des services d'approvisionnement à Nobéré dépasse celle de Lâ-Toden. Cet écart peut s'expliquer par la diversité des productions agro-sylvo-pastorales mais aussi par la différence des conditions climatiques, qui influencent la production. La valeur des productions dépend donc des variabilités climatiques (Ouédraogo, 2012). Aussi la densité des espèces ligneuses adultes pourvoyeuses de PFNL est plus importante à Nobéré, comparativement à Lâ-Toden qui est dominée par la régénération. Le coton est également cultivé à Nobéré mais pas à Lâ-Toden, compte tenu de la faible pluviométrie défavorable à cette culture dans cette zone. Cette spéculation a une part élevée dans la valeur de de production agricole de Nobéré. Dans les deux Communes, la valeur des produits d'élevage est plus importante que les autres produits agricoles et forestiers. Cette valeur est plus élevée à Nobéré, dû à la taille des troupeaux de la population. La variation des produits agricoles, animales et forestiers non ligneux sont les conséquences du changement climatique qui ont des répercussions sur leurs valeur économiques (Dayamba *et al.*, 2019).

Toutefois, des études ont montré la contribution des services écosystémiques, notamment, les services d'approvisionnement dans la satisfaction des besoins des ménages (Ilou *et al*., 2019 ; Ouédraogo *et al.*,

2020 ; Ouattara *et al.*, 2021 ; Yaovi *et al.*, 2021). Ces besoins incluent l'alimentation, la génération des revenus par le commerce des produits agro-sylvo-pastoraux et autres besoins. Toutefois, dans cette étude, la première destination de la production dans les Communes est l'autoconsommation mais en cas de problème financier, une partie de la production est vendue pour résoudre ce problème. Seulement quelques producteurs, en plus de l'autoconsommation, produisent pour la commercialisation.

Conclusion

Cette étude a montré que les massifs forestiers de Nobéré (zone soudanienne) et Lâ-Toden (zone soudano-sahélienne) se distinguent par la diversité floristique et fournissent plusieurs services aux populations locales. Ces forêts se distiguent par leurs caractéristiques déterminées à par la richesse spécifique, la densité, les indices de rareté, d'quitabilité de Piélou et diversité de Shannon des espèces forestières. La divergence des caractériques forestières se traduit par une perception différente des services écosystémques forestiers. Les services de production sont les plus perçus en zones soudanienne et les services de régulation sont les plus mentionnés à zone soudano-sahélienne . Les populations ont mentionnées de nombreuses espèces forestières intervenant dans plusieurs domaines tels que l'alimentation, la médecine, l'artisanat, le chauffage, la construction et la fabrication de savons. Outre les produits agricoles et d'élevage, les PFNL contribuent à l'alimentation, à la santé et génèrent des revenus pour les populations locales. Ils améliorent leurs moyens de subsistances. Toutefois, la gestion durable des forêts reste un défi à relever face à la pression anthropique et au changement climatique. Les espèces forestières demeurent menacées par la surexploitation et mérite des actions concrètes pour leur restauration et conservation.

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Youth Heavy Metal Bands in Morocco: Resistance and the Struggle for Change

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Abstract

In Morocco, Metal is a controversial genre of youth music that has usually been misinterpreted, marginalized and stigmatized by many individuals due to its transgressive sound, lyrical contents and visual codes. In this regard, the purpose of this paper is to explore the specific lyrical themes of Moroccan Metal bands concerning elements of symbolic transgression and musical activism. It also aims to the main motivations that push these bands to produce and sustain their musical discourse taking into account the conservative nature of the Moroccan context. Using both content analysis and semi-structured interviews, the paper concluded that despite the severe cultural challenges that surround their socio-cultural condition, the artistic participation of Moroccan Metal bands has not just allowed them to gain support from their subculture but also made them impose themselves as leaders of culture of courage. By tracing the Moroccan Metal bands' artistic engagement and commitments, this paper will bring to light the cultural sociology and multi-dimensional nature of Metal narratives in Morocco and the challenges that shape its existence. It also provides an interesting account for students and academics concerned with cultural minorities, literature and

arts-related topics about the nature of content produced by this minority as a reference.

Introduction

As the world is becoming more and more interconnected and globalized, its cultures are following suit in that evolution. One particular cultural element that has been unconditionally shared and exchanged amongst Earth's civilizations is music. Being a universal language, music has different types and influences. Some of these types are mainly entertaining in their objectives and therefore easily understood and digested. Some other genres, however, have proven to be controversial, given their richness and uniqueness in terms of their sound and content. The best example in this regard is Metal, which is still classified as a stigmatized and marginalized genre of music because of its countercultural themes, politically charged topics and transgressive sound and content (Hjlem et al. 2012). So to speak, Metal's references to depression, nihilism, alienation, drug use, sex, violence, suicide and devilry make it appear and sound transgressive and abusive to the standards of acceptable musical practices (as cited in Ballard, Bazzini, and Dodson 1999, 9). Kahn-Harris (2007) argues that extreme Metal bands transgress the boundaries of acceptable music, acceptable discourses, and acceptable practice. Weinstein (2000) extends the debate by arguing that Metal music is stigmatized because of shallow readings and misinterpretation of its content.

Interestingly enough, despite these critics, Metal music has proven its merit as a platform of musical activism where artists and fans express their resistance and rebellious attitudes against cultural hegemony, oppression, corruption, and injustice. For example, Rafalovich and Schneider (2005) describe Metal music as an expression of protest against greater cultural practices as well as a way of resisting hegemonic discourses. Weinstein (2000) adds that Metal music talks about oppression, injustice, resistance, rebellion, and death. Following the same line of argument, Jonathon et al. (1990) affirm that Heavy Metal is the cultural field of oppressed adolescents.

Within this controversy, famous Moroccan Metal bands like Suicide Machine, Thrillogy, Alcantagram, Sakadoya and Kawn have become more culturally engaged by delivering sophisticated musical contents that reflect their political awareness, subjective experiences and philosophical attitudes to intellectually and culturally inspire their respective audiences. Despite the artistic engagement of these Metal bands**,** Yassine Bourial, the founder of the

Moroccan Metal community's social media groups, points out that Moroccan society still considers Metal music as noise and perceives it as a work of the devil (cited in Bouazzaoui 2015). In this regard, given the lack if not the absence of literature on the specificities of Moroccan Metal music, this paper attempts to fill that gap by exploring the contemporary dynamics of Moroccan Metal subculture. In other words, this paper explores the specific lyrical themes of Moroccan Metal bands about elements of symbolic transgression and musical activism. The paper aims also to identify the main motivations that push these bands to produce and sustain their musical discourse taking into account the conservative nature of the Moroccan context. By doing this, the study – in addition to filling the gap within the literature – offers original insights to researchers, public relations practitioners and other stakeholders about this controversial trend in Morocco as far as popular culture is concerned.

Literature review

Heavy Metal–or simply Metal–is a musical genre that developed in the late '60s and early '70s; it is considered to be one of the most popular types of music among white adolescents that appeals specifically to working-class youth (Jonathon, Epstein, David, Pratto, 1990). Metal music emerged from the roots of Classic Rock and Blues music in the United States and the United Kingdom. In the early 80s, an "extreme" subgenre of Heavy Metal evolved with the name of *"Thrash Metal"* (Hjelm, Kahn- Harris, and Levine 2012). Later on in the mid-90s and the early 2000s, Metal music witnessed a huge diversity concerning its subgenres such as the example *"Nu Metal"* which made it universal (Hjelm et al. 2012). The contemporary Metal scene has witnessed the emergence of modern subgenres of Metal music, most notably "*Djent"* (Thomson 2011).

In this paper, the aim is not to trace the timeline of the development of Metal music as it may appear, but the purpose is to explore the specific nature and attitudes of Moroccan Metal music and its relation to transgression and musical activism. Before getting to this end, the first literature review subsection takes charge of shedding light on the international specificities of Metal music in terms of symbolic transgression, musical diversity and activism respectively. The second subsection discusses the specific situation of the Moroccan Metal community mainly its history, cultural representations, and institutional infrastructure.

Global Metal Music: between transgression and musical activism
Metal and musical transgression

In the early 80s, an extreme subgenre of Metal evolved under the name of *"Thrash Metal"*; it was spearheaded by the likes of *Anthrax, Megadeth,*

Metallica, and *Slayer*. These bands inspired a series of extreme subgenres that are known for their transgressive sound and content among which are *"Death Metal"*, "*Black Metal"*, *"Doom Metal"* and *"Grindcore"* (Hjelm, Kahn-Harris, and Levine 2012). The transgressive aspect of extreme Metal is a feature that gives the whole genre its artistic and authentic identity. Hjelm et al. (2012) define transgression in Metal culture as "the practice of boundary crossing, symbolically and/or practically, the practice of questioning and breaking taboos, the practice of questioning established values" (17). This fact makes Metal music an unconventional platform of artistic expression that transgresses the boundaries of traditional music in terms of sound and content. For example, besides the aggressive its aggressive sound, Metal deals with a wide range of sensitive themes that target issues of depression, retribution and alienation, drug use, sex, violence, suicide and Satanism (as cited in Ballard, Bazzini, and Dodson, 1999, 2).

Globally, extreme Metal has always been regarded as radical music since it usually concerns itself with themes that denounce social values as well as human existential conditions (Hjelm et al. 2012). Therefore, Metal as a Western product, is explained by Weinstein (2000) as a "shameless attack on the central values of Western civilization" (3). The notion of Extreme Metal is elaborated by the work of Schaap and Berkers (2014) as a "cluster of Metal subgenres characterized by sonic, verbal, and visual transgression." Extreme Metal subgenres usually make use of fast tempos, aggressive beats and low-register guitar riffs accompanied by low or high-pitch vocal screaming and growling techniques. Additionally, Metal artists use growling, which is uttering a deep guttural sound of anger, to communicate issues related to death, manslaughter, wars and extreme violence (Hjelm et al. 2012).

As far as Satanism is concerned, Farley (2009) argues that "song lyrics often have Satanic or dark supernatural themes. Album covers are resplendent with demons or depict medieval encounters with mythical or magical figures" (73). Farley maintains that these themes have attracted media attention and led to a series of court cases against bands and record companies during the 80s (73). On the other side however, Weinstein (2000) points out that the deviltry in Metal music is not a religious statement, but a form of rejection of the current theology; it's a criticism of the conservative society (260). Hecker (2005) confirms Weinstein's claim, arguing that Satanism has always shaped Metal music as it stands for individual freedoms - a revolution against social restrictions and established morals rather than showing sympathy for satanic ideologies. As a result, the devilry connotations remain offensive just to those who resist cultural and moral change in society (59).

Metal and musical hybridity

The mid-90s and the early 2000s witnessed a series of successful attempts that rendered Metal music more accessible to mainstream audiences. For example, different less extreme Metal subgenres emerged, a fact which has made Metal universal. However, this would not have happened without a cluster of best-selling and trend-setting acts like *Linkin Park, Deftones, Slipknot,* and *Papa Roach* (Hjelm et al. 2012). Examples of these hybrid Metal subgenres include *Nu Metal; Alternative Metal; Symphonic Metal; Power Metal; Djent Metal*; *Progressive Metal and Industrial Metal*, to mention but a few. Unlike extreme Metal, these genres provide an accessible experience to the average audience in terms of sound structure and thematic content by incorporating clean vocals, female operatic singing, Rap verses, melodic solos and electronic beats.

An article written by the pen of Jedicke (2020) to DW journal entitled "How Heavy Metal Became Mainstream," discusses the gradual development of Metal music from a highly transgressive genre associated with glorifying violence, drugs, and satanism to becoming more and more diverse, playful, and mainstream to the point of being used by companies for advertising purposes. The article also elaborates on the diversity of Modern Metal and captures it as a space of freedom and comfort used by individuals who hold a statement against political practices and mainstream culture in general. In this regard, the researcher and journalist Jörg Scheller brings into scope the phenomenon of Tanzanian, Iranian, and Indonesian All-female bands" who, according to him, use the Metal platform to empower themselves, express their cultural discomfort and make themselves heard and connected to the world (as cited in Jedicke 2020).

Unlike the focus on pure transgression, the examples above highlight the flexibility and inclusiveness of Metal music as a platform used by artists and fans alike to express their individuality and musical preferences. In the same vein, Jörg Scheller sheds light on the political aspect of Metal with his "female-bands" example. From this angle, the following paragraphs will elaborate more on that aspect, namely Metal and musical activism.

Metal and musical activism

The political dimension of Metal music has been responsible for creating a sophisticated subculture with an interesting sense of cultural resistance and artivism[1]. Hjelm et al (2012), Levine (2008), Rafalovich and Schneider (2005), and Weinstein (2000) support the idea that Metal music is stigmatized and marginalized because of its political discourses and counter-hegemonic attitudes that may stand for human rights, challenge mainstream

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[1] It is a word which combines both art and activism. It is referred to as Social Artivism as well.

ideologies and help listeners to develop their political awareness. Indeed, artists use the power of music to provide a social commentary and inspire others for social and intellectual change. Factual examples that shed light on the international content of Metal could be seen in the Dutch Metal band *Epica* with their politically-charged music such as the 2005 album *"We will take you with us."* The album holds severe criticism over Islamic religious fundamentalists and terrorism around the world. Another example is the case of *Rage Against the Machine* and their song *"Killing in the Name"* which is an explicit rebellion against authority and police brutality in the US (Tan 2019). Additionally, Metal music targets issues of racism such as the works of *Anthrax*'s *"Indians"*; *Testament's "Trail of Tears";* abortion and drug-addicted infants such as *Death's* songs *"Living Monstrosity"* and *"Altering the Future"* (Weinstein 1991; Purcell 2003; Walser 1993; Arnett 1996). Still, the best example worth mentioning in this regard is the case of *System of a Down*, an American band with Armenian origins, and their cause of using their music to spread awareness about the "Armenian genocide."[2] Thanks to the contribution of the band's musical activism, the President of the United States Joe Biden has officially recognized the Armenian Genocide (Kreps 2021).

In his research, Arnett (1991) points out that the lyrical content of Heavy Metal is filled with socially aware messages. For example, unlike popular mainstream music, the contribution of Metal in developing youth's political awareness is well illustrated with the example of Walser when the music video of Megadeth's 1986 album "Peace Sells...But Who's Buying?" featured a young Metal fan watching Metal videos on television. The kid is interrupted by his father who asks "What is the garbage you are watching? I want to watch the news." The teenager responds, "This is the news" (Walser 1993, 19). Weinstein (1991) shares the same point highlighting a series of sophisticated messages and sociopolitical stances that shape the content of British bands, such as songs that target and denounce greedy televangelists *"Be Quick or Be Dead"*; the horrors of the genocide of Native Americans *"Run to the Hills.".*

In light of the current political tension of the Russo-Ukrainian War where the president of Russia Vladimir Putin has officially threatened the world with the possibility of opting for nuclear action (Sabbagh 2022), classic Metal songs are still showing their relevance to the contemporary world such as *Iron Maiden* and their works about the danger of nuclear weapons and war with the examples of *"2 Minutes To Midnight"*; *"The Trooper",* and *Black Sabbath's* antiwar song *"War Pigs"* (Bashe 1985, 40). Additionally, Metal

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[2] In 1915, the Turkish Unionist Government was behind an organized ethnic cleansing campaign against Armenians of Anatolian origin. these events are considered by Turkey as an act of war, but for Armenians, they were genocide that should be recognized at a higher institutional level

music involves its audiences to develop their sense of responsibility for the environment and the fate of endangered species such as the works *Ozzy Osbourne's "Revelation - Mother Earth"*; *Metallica's "Blackened,"* and; *Testament's "Greenhouse Effect." Megadeth's* "Countdown to Extinction."

Indeed, the examples highlighted above showcase the flexibility of international Metal and its relation to transgression, diversity and musical activism. Such richness represents Metal as a sophisticated music that seems to aspire for intellectual and social change. After reviewing, and grasping the multi-dimensional nature of Metal music, the following subsection of the literature tracks the birth, the representations, as well as the infrastructure of Moroccan Metal artists and their subculture.

Moroccan Metal subculture: between stigmatization and marginalization
The birth of a stigmatized community

Twenty-five centuries ago, Plato said, "Any musical innovation is full of danger to the whole state, and ought to be prohibited" (as cited in Jowett 2008, 93). Accordingly, Morocco has a long history of suspicion and crackdown on some types of critical youth-appealing music. The oldest case was the political tension between local authorities and the 1970 old-school Moroccan Folk-rock band *Nass el Ghiwane* which were labelled as *'The Rolling Stones'* of Morocco for their protest songs, sceptical attitudes and brave social commentary about the status quo. (Cumming 2013; Trott 2018). This fact made them celebrated and embraced by the left during the difficult moments of the political history of Morocco[3]. However, the band was countered by different acts of repression (Schaefer 2012). In modern days, Moroccan Rappers such as Mouad Belghouat known as "*Al-Haqed*" (the sullen one) got arrested by Moroccan authorities on 29 March 2012 during the Arab Spring turmoil[4] because he used his music to spread political awareness, promote protest and denounce police corruption in Morocco (Brouwer and Bartels 2014). This sort of musical activism has made Moroccan authorities more paranoid of any new form of music that may contain sophisticated social commentary, spark protests or social instability.

Metal culture has become universal and not limited to white adolescents (Levine 2008). This started in the mid-70s with the emergence of

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[3] The reference here is to the 'Years of Lead' that characterized Moroccan political history during the 70s. The term is used by opponents of the rule of the former King Hassan II to describe a period of his rule (from the 60s to the beginning of the 80s). This period of Moroccan political history was marked by state violence against dissidents and democracy activists

[4] A series of anti-government protests, uprisings, and armed rebellions spread across much of the Arab world in the early 2010s. It began in response to oppressive regimes and a low standard of living, starting with protests in Tunisia.

the Punk movement in the UK. The movement aimed to revolt against social norms, defend human individuality, criticize conformism and stand against authoritarianism and corporatism. Thanks to the movement's direct influence in terms of music, esthetics and content, Metal culture has invaded the world (Trott, 2018). The Middle East and North Africa did not escape this influence because of the widespread of satellite dishes and the increase in migration, especially in the late 1980s (Hjelm et al. 2012). However, because of the conservative nature of this region, this type of music was welcomed with scepticism. Hjelm et al. (2012) conclude that "today it is the Muslim world where Heavy Metal faces the most persistent censorship, political repression, and societal stigmatization" (10).

As far as the birth of the Moroccan Metal community is concerned, it is widely agreed that the year 1996 was the real birth of Metal music in Casablanca, a city known for its pioneer bands (Trott 2018). According to one of Moroccan Metalhead pioneers Amine Hamma, Moroccan adolescents were introduced to Metal music during the early 90s thanks to television, taps and CDs exchange (cited in Guibert 2006). Hamma maintains that due to the impact of Metal music impact on their awareness, young Moroccan Metal enthusiasts were portrayed as the new rebels who wanted to be "anti-everything" (cited in Guibert 2006). To elaborate and understand more, we interviewed Mohamed Eddaoudi, a veteran Metal artist who was artistically active with Hamma during the late 90s and early 2000s in Casablanca, he narrates:

> (…) Moroccan Metal scene started with *Immortal Spirit* in 1996; the band only relied on their pocket and materials to organize local concerts (…) The universities were the cradle of cultural activities (…) Many bands appeared and disappeared, but few are remembered (…) We formed *The Nightmare* in 1998 and released an album. Other local bands expanded the genre *of Necros, Tarabora, Iron Cross, and Despotism*. Other bands appeared in Rabat city, but they didn't have the means to organize their concerts until the early 2000s

In 2003, a group of Moroccan Metal fans and artists were arrested while some of them were sentenced to jail for being accused as "devil worshipers." The incident created a huge controversial debate within Moroccan society, and most notably resulted in the release of the famous Moroccan movie entitled "*Les Anges de Satan"* [Satan's Angels]*,* by the film director Ahmed Boulane in 2007. Amine Hamma as cited in Guibert (2006) elaborates more on the events of March 6, 2003, narrating that the Casablanca court sentenced the 14 Metal musicians to terms ranging from 1 month to 1 year in prison for their "acts that could shake the faith of Muslims"; Hamma continues that the Moroccan prosecutor defined Moroccan Metal subculture

as a "Satanist propaganda" that is "perpetrated by the Israeli secret services to destabilize Muslim countries". Furthermore, Hamma adds a striking incident: "When we were judged, we had to recite the 'Chahada' [declaration of faith] in front of the judge to prove our belief in God" (as cited in Guibert 2006). Also, Eddaoudi fondly recalls that event, when he says:

> We know the guys (…) There was nothing like Satanism. The guys sing about serious problems…It was a "Hamla" [a police campaign hunting Metalheads], it was weird you know, Metalheads wearing black shirts of their favourite bands, they [Metalheads] were also hunted by Egyptian police at that time (...) The guys used to meet in a coffee called Egyptian [in Casablanca]. They were peaceful. They just like music. The place where the guys got arrested is D'Iris district in Casablanca

Eddaoudi and Hammi's narration goes hand in hand with Levine's (2008) book chapter "*When the music is banned, the real Satanism will begin*" where he defines the Moroccan incident of 2003 as an absurd crime motivated by hegemonic purposes to repress Moroccan youth who started developing some political awareness. As a Moroccan Metal artist, Amine Hamma argues that Moroccan bands used Metal music as a platform to provide a meaningful social commentary about the "third world" conditions (as cited Guibert 2006).

Indeed, conservative societies were facing such a form of expression with a wide range of ideological and repressive apparatuses. For example, in 1997 in Egypt, authorities arrested Metal music enthusiasts accusing them of Satanic practices. This attack on Metal culture was escalated by media hype and the approval of Egyptian ministry representatives and major religious institutions (Hecker 2012). Similarly, authorities in Iran, a state ruled by the Islamic Republic Party, forced Metalheads to cut their long hair while their T-shirts, records, goodies and all kinds of Metal-related products were confiscated because of accusations of "Satanism" (Levine 2008, 5). Such relatively recent repressive reactions in the Islamic world remind us of the old-school reactions in the U.S. during the 80s when parents used to burn Heavy Metal records, claiming that they were an evil product (Hjelm et al. 2012). A possible explanation for such similarity is the argument of Jörg Scheller, a Metal studies researcher, who states that it is normal that "countercultural movements" such as Metal gradually become part of mainstream music but certainly not hailed by fundamentalist theocracies (cited in Jedicke 2020). Scheller adds that in the present times, Western democracies have successfully normalized and commodified Metal, unlike conservative states where Metal is still underground, and stigmatized (cited in Jedicke 2020).

Going back to the situation of the Moroccan Metal community and its artists, it is worth noting that despite the Moroccan king's support for the

L'Boulevard festival as will be discussed in the subsequent subsection, Metal subculture has not been welcomed by some media institutions and authorities. For instance, from 2012 to 2020, Moroccan newspapers' publications related to *Alousboue Sahafi, Akhbaron*, *Noonpresse*, *Souss24, Almaghrib* Today, and *Hespress* ran sensational photos and essays that represent Moroccan Metal as a noise, meaningless music filled with radical activities such as drug abuse, Satan-worshipping, animal slaughtering and deviant sexual behaviour. Also, the ex-Moroccan governing Islamist party PJD (Justice and Development Party) has called the *L'Boulevard* event "a menace to Morocco's identity" (Langendonck 2010). To fight back, "the Islamist party engaged in a campaign of promoting what they called '*al fan annazīf'* [clean art] as a way to promote cultural expression in line with Islamic precepts" (Almeida 2017, 8).

The infrastructure of a marginalized community

Despite its cultural challenges, the Metal community's efforts paid off and led them to establish *L'boulevard* [The Avenue] in 1999 as an annual music festival that takes place in the economic capital city of Casablanca. Recently, the festival has started attracting hundreds of thousands of enthusiasts of urban music mainly *Rap/Hip-hop*, *Rock/Metal*, and *Fusion* where Moroccan bands compete in a contest called *Tremplin* [Springboard] (Hou 2019). In the frame of cultural diplomacy, *L'boulevard* also invites international bands to perform as a way to promote a modern image of Morocco. In 2009, the festival's management received a $250,000 donation from King Mohamed VI[5] to build a professional recording studio to aid the up-and-coming underground artists (Langendonck 2010). Interestingly, even with this royal support, the Metal scene is still marginalized and not recognized by local officials as a form of art, a fact which makes Metal concerts difficult or even impossible to organise. The majority if not all Moroccan Metal bands interviewed for this study admit and confirm this fact. Mohamed Iliass Horaira, the vocalist of *Suicide Machine*, states, "When we say it's a Metal concert, officials hesitate and usually reject (…) It's not music for them." Similarly, *Thrillogy* band criticized the budget of the Moroccan Ministry of Culture when Wassim Ahenjir, says, "The low budget does not

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[5] Indeed, the Moroccan King has played an active role in promoting music expression to foster a more liberal environment in Morocco. With a particular focus on the youth, his efforts aim to create a platform where cultural minorities can freely express their identity and political views through arts and music, without facing judgment from mainstream ideological frameworks. While some may view this as a political manoeuvre, it is worth noting that the king's support for the youth also highlights a contrast between his governance style and that of his father, signalling a shift in approach and a commitment to promoting inclusivity and freedom of expression.

help the Minister of Culture to support the bands, but there are associations that try to help such as *L'boulvard, L'uzine, Concert Maroc*, otherwise, you depend on the pocket." Additionally, Mouhssin Sag Ine, the lead vocalist and songwriter of *Alcantagram* and *I Make Noise* bands, states:'

> (…)We have a rich history in this place [Making reference to the long career of his band that started in 2006] look at festivals like *Wacken or Hellfest*, but here? Still 'roasting ants' [A Moroccan expression that indicates failure in achieving something]. We don't have places to play Metal, except a few like *'L'bouletek'* and *'L'uzine'* and '*Nitak takafi'* [cultural centres that offer musicians to play music in Casablanca and Meknes], and this is just because Metal is the music of atheists, drug addicts [talking with an ironic vocal tone]

The self-explanatory narrative of Moroccan Metal artists exposes the infrastructural challenges that face their community as they attribute these challenges to the unconventional esthetics and sound of Metal. Burial argues that Moroccan society describes Metal music as meaningless noise and devil's work (as cited in Bouazzaoui 2015). This view of Metal subculture goes hand in hand with Joseph Ouechen, a passionate photographer interested in Moroccan subcultures, who portrays Metalhead enthusiasts as "a small group of young Moroccans who defy social norms with the music they listen to, their haircuts and their clothing choices" (as cited in Kaabi 2019). To sum up, based on the multiple scholarly attitudes, the narratives of Metal enthusiasts and the factual incidents elaborated above, one could beg the following questions: Is Moroccan Metal music meaningless? Is it a transgressive platform that advocates for social instability and self-harm? Or, does it communicate an intelligently meaningful discourse that is often overshadowed by stereotypes and pre-judgments? Answers to these questions and a few others will be explored after revealing the methodology adopted.

Methodology

The purpose of this paper is to explore and identify the main themes that shape Moroccan Metal music about issues of transgression and musical activism. Also, the purpose is to identify the specific motivations that push Moroccan Metal artists to produce and sustain their musical discourse as active producers of Metal culture taking into account the conservative Moroccan context. The study enquires the following questions: (i) What are the dominant themes that shape the songs of Moroccan Metal bands? (ii) How are Moroccan Metal songs associated with transgression and musical activism? (iii) What are the motivations that push Moroccan Metal bands to produce and sustain this type of music? In clear terms, the focus is on the lyrical content of famous Moroccan Metal bands and their interviewed

narratives. Specifically, with genuine consideration of the underground nature of the Moroccan Metal community and its mainstream limitations as a whole, the paper focuses on the case of Suicide Machine, Thrillogy, Kawn, Alcantagram, and Sakadoya as the most prominent Metal bands in Morocco. The choice of the sample bands is traced to the fact they have been able to assert their existence in terms of discography, popularity, live shows, fan base, and local and regional awards. In other words, the choice of the five bands is based on a rationale that makes use of the following data:

- Suicide Machine is a band from Casablanca which was founded in 2012. It is regarded by its community as one of the most well-known *Extreme Death Melodic* Metal bands with a Facebook fan base of 4,896 followers (as of April 2022). The band was announced as the winner of *the L'Boulevard* Festival in 2015 in Casablanca, took third place in *the Tremplin Jendouba* Festival in 2015 in Tunisia, and won the second prize in the Moroccan Metal Community contest in 2017. For further details about the band, check their Facebook: https://bit.ly/3vdOxTy; Bandcamp: https://bit.ly/3vc15ut and YouTube: https://bit.ly/36LLkB6

- Thrillogy is a Thrash Metal band from Fez which was announced as the first prize winner of the *Concert-Maroc.com* contest and won the 2017 edition of *the L'Boulevard* festival. The band is regarded as a Moroccan *Thrash Metal* force in Morocco with a Facebook fan base of nearly 4000 followers (as of April 2022). The band shared the scene with the international band *Septicflesh* during the Boulevard Show 2018 in Casablanca. For further details about the band, check their Facebook: https://bit.ly/3OyPw8j; Instagram: https://bit.ly/36HgFET and YouTube: https://bit.ly/3kdsSEk

- Kawn is a Moroccan *Progressive Metal* band which was introduced to the scene with a self-titled album "KAWN" (2019). It has been acclaimed by the Moroccan press and covered by the Moroccan Channel *2M TV*. The band won the *L'boulevard* competition of 2018 in Casablanca and shared the stage with the international Metal band *Septicflesh.* It has been praised by Moroccan Metal audiences and international artists for its hybrid approach of mixing Metal with Arabic elements in terms of melody and language. The band also featured the Finnish singer of the international Metal band *Adagio*-Christian Palin in one of their songs. For further details check the band's Instagram : https://bit.ly/3OB9Fuk;
  Bandcamp : https://bit.ly/37ELuut ; Youtube1 :https://bit.ly/3v9unde ; Youtube2: https://bit.ly/3vET687 and
  Youtube3: https://bit.ly/3Mv76bg

- Alcantaram came about in 2006 in Meknes and has been active since

2010; they perform *Extreme Death Metal*, which is an extreme subgenre that's known for its technical brutality and aggressive low-pitched growl vocals. Alcantagram was nominated to participate in *the L'Boulevard* contest in 2013 and 2018 and was regarded by the veterans of the scene as one of the pioneers of the "extreme underground scene" in Morocco with faithful sound and presentation. For further details about the band, check their Facebook: https://bit.ly/3vaH0Ve and YouTube: https://bit.ly/3vdA3D7

- Sakadoya is a *Melodic Death Metal* band which was established in Settat in 2007 as an influential band within the Moroccan Metal scene. The band's name has a special place in the perception of the Moroccan Metal community because of their innovative production that initiated the modern sound of Moroccan Metal music back in 2009. The band has a solid number of followers on Facebook that surpasses 5000 (as of April 2022). With regard to the sound of Sakadoya, the band was the first Metal band to be invited to perform during the *Mawazine* show in 2009, which is a very famous mainstream festival in Morocco. The band took a hiatus during the last few years and has returned with new energy to resume the making of their new upcoming album in 2021. For further details, check the band's Spotify: https://spoti.fi/3Mjuo42; Facebook: https://bit.ly/3k4tUTn
  and Instagram: https://bit.ly/39f22tw

To analyze the lyrical content of the bands introduced above, the techniques used by Rafalovich and Schneider (2005) in their study entitled *"Song Lyrics in Contemporary Metal Music as Counter-Hegemonic Discourse"* have been adopted. The two scholars studied the lyrical content of Metal recordings of American and European bands. The study was based on an exhaustive content analysis of booklets from over two hundred Metal recordings. Booklets were analyzed according to an interpretive approach to explore the lyrical contents' main themes and areas of concern. Analysis of the data began with open coding, where data were categorized indiscriminately, followed by a closed coding procedure in which data were examined for specific themes after preliminary categories had been established.

The lyrical texts of songs of albums produced by the five Moroccan Metal bands include: "Evilution" (2015) and "Soldiers of Ignorance" (2019) by Thrillogy; "Open Gore"(2010) and "Domination Reborn" (2014) by Alcantagram; "Beat" (2002), and "My Dark Castle" (2014) By Suicide Machine; "Back to the Age of Slaves" (2009) by Sakadoya; "KAWN" (2019) by Kawn. All of the songs under study are written in English, except for Kawn who mixes the Moroccan variety and Standard Arabic language with English

in some of their songs. Using the interpretative approach used by Rafalovich and Schneider in their study, the lyrical content of the five bands is analyzed using content analysis of open coding and closed coding. The categories discovered are categorized as stand-alone themes. These themes are analyzed, interpreted and explained in the light of the bands' interviewed motivations and interpretations.

To learn about the motivations that push Moroccan artists to produce and sustain their music, semi-structured interviews have been conducted with the members of the five bands. The objective is to have additional insights, and further data on the bands' philosophies, personal interpretations and political attitudes about their songs. The ultimate purpose of discography analysis and interviews is to explore the relationship between the specific areas of concern that shape the bands' discography and their subjective experience about elements of symbolic transgression and musical activism. The semi-structured interviews included thirteen open-ended questions that revolved around uncovering the messages behind songs, the motivation behind writing songs, the controversy of Metal music in Morocco and the band's personal experience as a subculture about the conservative Moroccan context. Each band was first contacted through its official Facebook page. An initial Facebook message provided the bands with details on the study and offered the possibility to contribute in relevant information to this paper. Each of the five bands agreed, and therefore, an initial mutual consent was obtained. The initial data collection procedure was designed for real-life face-to-face in-depth interviews. Face-to-face interviews were conducted with members from Alcantagram, Kawn, Suicide Machine and Thrillogy during different local concerts. However, due to the unavailability of Sakadoya's members to arrange a real-world interview, an audio semi-structural interview on Skype was chosen and decided upon. The interview questions were structured in a way that engaged the interviewees to reveal their political attitudes and epistemological stances. Some of the data revealed in these interviews were used in the literature review section to elaborate more on the infrastructure of the Metal community in Morocco.

Due to the absence of studies that track the exact birth and development of Moroccan Metal music, the paper makes use of an additional interview with an important figure of the underground Moroccan Metal scene named Mohammed Eddaoudi[6]. The interview data are included in the

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[6] Mohammed Eddaoudi is a veteran Metal artist in his late forties and the founder of one of the earliest underground Moroccan Metal bands *"The Nightmare."* Eddaoudi is a professional guitar player specializing in both *Progressive* and *Death Metal*. He participates in different Metal events. For example, in 2022 a Moroccan Metal Web radio station called "MAJMAR" invited Eddaoudi to share his experience about the birth of the Moroccan Metal community

literature review section to provide an authentic and comprehensive view of the different intricacies of the Moroccan Metal subculture. Eddaoudi was first contacted via Facebook Messenger and then requested to join the WhatsApp application for a voluntary interview. To note, all interviews have been conducted by the first author of the paper[7] in the frame of his master's degree research on underground music and youth activism in Morocco.

For the sake of providing comprehensive findings to the reader, all Arabic phrases used by Kawn in their sample songs are translated into English and listed in the appendix. Later on, the interviews have been transcribed and then coded using ATLAS. ti software which is a powerful tool for qualitative data analysis. It also provides the possibility to create codes, classify them into themes, and move across interviews and codes more efficiently to compare responses. This process helps to uncover and categorize the underlying ideologies and stances embedded in the interviewees' stories with regard to their lyrical content and the scholarly framework presented in the literature review section.

Findings and discussion

Based on the use of two methods of data collection - the lyrical texts of Moroccan Metal artists and semi-structured interviews, this section reveals and discusses the relationship between the dominant themes that shape the bands' discography and their motivations concerning elements of symbolic transgression and musical activism.

The dominant themes of Moroccan Metal bands' discography

The analysis of data collected from the lyrical texts of the five bands has revealed that all the songs were originally written and sung in the English language except for the Kawn band which widened their artistic scope by mixing Moroccan Arabic, Standard Arabic and English in some of their songs. The revealed themes in this study tend to reinforce the bands' wider narrative except for Kawn's band which sometimes diverts from the other bands in terms of sound and content. For example, some of their songs tackle different issues such as environment, eg, 'Cosmic Entropy', culture, 'The Traveler *Ibn Battuta*', drama, and 'The Theater of Hearts' to mention but a few. The results have also shown that Moroccan Metal bands are faced with linguistic barriers taking into account the Arabo-francophone sociolinguistic situation in

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and other related issues. Facebook profile: https://bit.ly/39de3Q1 ;   MAJMAR WEB RADIO: https://bit.ly/3ONC3tp

[7] Said El Harrami - the first author of the paper- conducted interviews in the frame of his 2019 MA dissertation entitled: The Controversial Discourse of Heavy Metal Music: Between Transgression and Activism at the School of Arts and Humanities affiliated with Moulay Ismail University of Meknes in Morocco.

Morocco. This fact renders the fan base of these bands to be very limited in number in comparison to other mainstream musical styles. The study also reveals three interconnected major themes that draw the foundation of Moroccan Metal discography, mainly resistance and lamentation of the human condition; psychological disturbance and human violence; anti-extremism, solidarity and co-existence.

Resistance and lamentation of the human condition

The theme of "resistance and lamentation of the human condition" is strongly presented in the discography narrative of the Moroccan bands equally. Resistance targets different issues related to human freedom, social injustice, institutional hegemony, state manipulation, predatory capitalism and systematic indoctrination. On the one hand, the lyrical content analyzed for Sakadoya (*'Back to the Age of Slaves' & 'Dismal Moments'* in Appendix 1 - songs 1 & 2) and Thrillogy (*'Soldiers of Ignorance' & 'Humanator'* in Appendix 1 - songs 3 & 4) tends to be more straightforward and politically engaged as a sophisticated social commentary supported by attitudes of symbolic protest and resistance. On the other hand, the examples of Alcantagram (*'Endless Memories'* in Appendix 1 - song 5) and Kawn ('*Rebirth*' in Appendix 1 - song 6) tend to express independence and resistance poetically. As a case in point, Sakadoya's words imply an urgent discussion that revolves around criticizing authoritarian agendas and state hegemony, while raising concerns about the lack of freedom as well as the economic chaos of the modern world. Lines such as *we should react* may suggest the band's call for raising awareness about sensitive political issues.

Thrillogy songs with their straightforward messages seem to target the transgressive nature of human beings in general and the cruel reality some societies may experience in particular. Types of such cruelty include the absence of freedom over one's thoughts and life choices, and the oppression as well as the subliminal brainwashing executed by the powerful over the weak in particular. Furthermore, Thrillogy's songs heavily criticize the potential greedy and destructive nature of the human race and the desire to engage in wars thanks to expressions like *beware of the human attack* that goes hand in hand with *we should react* stated in Sakadoya's song. These statements could be interpreted as if the bands tend to push their audiences to engage in a political debate that concerns the contemporary human condition. Thrillogy lines also hold criticisms regarding institutional manipulation. For example, the lines of the song "*Soldiers of Ignorance"* may suggest the band's statements about manipulative elections and the broken promises of authorities to elevate the social conditions in Morocco or other places.

As far as the issue of freedom is concerned, the discography of the bands conveys interesting statements such as the example of Sakadoya's line

dehumanisation is the new freedom, and Thrillogy's line *no freedom of speech, no freedom of thoughts, all lost and gone,* which in turn put emphasis on the concept of freedom as a core trait of humankind and how it has been taken away or voluntarily handed to the potential oppressive forces either through the use of an ideological state apparatus or a repressive one. Also, the music of Alcantagram and Kawn suggests an equally profound desire for freedom by escaping the unfair part of reality. For example, lines like *I wanna fake my death and start over, somewhere where I can write without getting confused* by Alcantagram, and *I won't change, pardon me, why do you hinder my progression? S'héit min kedbat amri* by Kawn revolves around concepts of escapism and revival which go beyond the area of idiosyncratic and individual freedom-searching into a social issue that may be represented in the prevalent confrontation between oppression and justice.

Psychological disturbance and human violence

The literature review reveals that Metal music is a controversial genre by definition due to its transgressive sound and content. With this in mind, the findings show that the theme of "psychological disturbance and human violence" is heavily presented within the content of the five Moroccan Metal bands. To elaborate, on the one hand, the music as well as the lyrical content of Alcantagram (*'Desire To Deceive'* in Appendix 2 - Song 1), Thrillogy (*'Red Landscape'* in Appendix 2 - song 2) and most songs of Suicide Machine are more fast-paced and chaotic with a predominant use of aggressive sound and violent language with expressions like *Slaughtering*, *Torture, lust for blood.* Arnett (1996) describes the feeling of being in a Metal concert as the feeling of being on a battlefield (as cited in Kegan 2015, 2). On the other hand, Kawn's (*'From Ashes To Heaven'* in Appendix 2 - song 3) and Sakadoya's songs relatively tend to appear less violent in terms of sound and lyrics. For example, *Progressive Metal/Rock* music as adopted by Kawn is internationally known for its melodic sound, odd time signatures and less aggressive wording choice. However, Kawn has a bunch of unusually dark songs that target hot-button issues such as suicide and psychological instability with excessive use of metaphorical connotations that indicate deep sorrow and alienation with words like *cold - alone –rise to meet my eternity-* following models of the Swedish band *Opeth,* and the American band *Riverside*. In the same vein, Alcantagram's song ('*A Perfect Revolution'* in Appendix 2 - song 4) may suggest suicidal tendencies and psychological disturbance with straightforward expressions like *Can I kill that part of me without killing myself*? The title of the song may also indicate a *"Revolution"* against the self and its psychological limitations to handle specific situations. The findings also show that the transgressive aspect of these bands' thematic content has no references to issues related to atheism, agnosticism, drugs, Satanism, delivery

or Pagan occults. However, the bands tend to emphasize transgressive attitudes that target issues such as mental illness, social alienation, suicidal and criminal tendencies, manslaughter, wars and violent human behaviour.

The bands' songs may sound technically violent and transgressive at first glance; however, such transgression does not seem to attack the central values of Moroccan society mainly its religion though it criticizes the extreme aspect of it. Speaking of Metal and religion, Amine Hamma argues that most Moroccan Metal artists tend to avoid being associated with *Black Metal* as an extreme subgenre of Metal because of the stigma associated with it since it extremely fetishizes Satanic occults as its core rhetoric (as cited in Guibert 2006). Such avoidance projects the complex religious identity of Moroccan youth as being eclectic when it comes to the transgressive elements of extreme Metal. Indeed, thanks to the lack of comprehensive knowledge about the complexity of Metal music, conservative attitudes tend to confuse *Black Metal* and other subgenres simply because of their sound and visual commonalities like black T-shirts and transgressive stickers. Additionally, *Black Metal* is known for its subversive discourses that abuse religious ideologies such as the permanent antagonism between *Black Metal* and the dominance of Christianity in Western societies (Rafalovich and Schneider 2005). Based on these findings, one could safely conclude that the transgressive dimension of Moroccan Metal music as a theatric horror tends to metaphorically expose Metal audiences to explore the dark and aggressive facet of humanity while being distant from other provocative themes that may suggest alternative religiosity, promote Satanism or tackle drug addiction.

Anti-extremism, solidarity and co-existence

The literature review reveals that Metal music is known for its transgressive themes and sociopolitical commentary that may potentially challenge or contradict mainstream conventions and values. Therefore, Metal content could be represented by conservative forces as a discourse of deviance. With enough regard to the particularities of Moroccan Metal music, the lyrical content of the five bands surprisingly reveals a third interesting theme that implicitly and explicitly embodies strong messages that advocate anti-extremism, solidarity and co-existence. Such a theme exposes some exclusive areas of interest that shape the intellectual faculty of the bands. Such messages are more present, especially in the musical discourse of Sakadoya and Kawn. Examples of Sakadoya's song ('*Let Us Pray*' Appendix 3 - song 1*),* Suicide Machine's song *('New As Old'* Appendix 3 - song 2) and Kawn's songs *('New Breath'* and *'Rebirth'* Appendix 3 - song 3 & 4*)* reflect interesting messages of denouncing radicalism and division. Kawn's band tend to go even further by rebelling against the traditional musical structure of Metal as a way to promote messages of solidarity and hybridity. For example, the band

incorporates multiple languages mainly Moroccan Arabic, Standard Arabic and English in addition to oriental and Andalusian musical scales such as *"Malhoun[8]"* next to the sonic elements of Heavy Metal structure. Also, the example of Kawn's song *"New Breath"* takes the form of a motivational anthem that may describe life's struggles with an attempt to empower listeners to resist challenges using values of solidarity and overcoming differences as exemplified by these lines: *If we stand all as one, we will never fall*, *Together we reach the sun* and *Come join me in my Kawn*. Kawn's messages go hand in hand with Sakadoya's song *"Let's Pray"* with lines such as *Extend your hand, I'll give you mine And peace can save us all.* In this sense, Garratt (2020) mentions the power of musical activism "as a way of modelling the world we want to see." Furthermore, the ambivalent approach adopted by Kawn in the making of their music invites Bhabha's (1994) interpretation of cultural hybridity as a model of communication. To clarify, Kawn's hybridity approach could be perceived as an act of conciliating two dissonant musical expressions; one is perceived as exotic and transgressive (Metal) and the other as conventional and sacred "Malhoun." With this in mind, Moroccan Metal music can truly exceed its transgressive role to become a platform of artivism and creativity.

Suicide Machine, as a band interested in *Death Melodic Metal*, tends to use their music to denounce fundamentalism and religious extremism and raise awareness about such issues. Their title *"New As Old"* may depict the stagnant and non-progressive state of being of the extreme Muslim fundamentalists because they refuse to adapt to the new world while being stuck in the *"old"* preaching. This fact hinders potential discourses of co-existence and solidarity within the same society. For example, the band's lines would possibly suggest a description of someone with false pride and blind belief whereas, the lines *When our hearts bleed our minds are controlled* and *our souls are sold* may indicate the example of the miserable circumstances that make individuals controlled, hypnotized and easily swayed by terrorist forces. The bands' concern about extremism could be also explained by the growing acts of terrorism in the Middle East and North Africa region such as the examples of *ISIS* in Iraq and Syria, *Boko-Haram* in Cameroun, and the *Somalian Al-Chabbab* among others. The lines *new as old* and *Al'jihhad is our destiny* may also imply the fundamentalists' desire to eliminate and eradicate the "infidel other" as their ultimate yet sacred purpose in life. The satirical tone that shapes Suicide Machine's songs also indicates a call for co-existence as a major implicit theme that should be grasped depending on a critical reading of their messages.

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[8] Traditional music originated in Morocco as a kind of urban sung poetry that sometimes contains religious chanting.

In short, all identified themes are intensively interrelated in the sense that each theme is explicitly or implicitly connected to the other in terms of potential concerns, attitudes and desires. The first and third themes reflect the bands' sense of musical activism, resistance, rebellion, and desire for a better world characterized by peace, psychological stability, freedom, justice and solidarity. The second theme sheds light on the transgressive elements embodied in the bands' music such as the dark aspect of humanity, violence and psychological disturbance. However, transgression in this case doesn't seem to affect central values of Moroccan society like religion though ethnocentrism and religious fundamentalism are heavily criticized. Even though Metal is a controversial platform by definition, the exposed themes also reveal the interesting level of political awareness and musical activism communicated through the bands' artistry, a fact that portrays the weight of Moroccan Metal music as a meaningful discourse that targets interesting issues which goes against the conservative assumptions that represent this music as mere noise and "Satan's work" (as cited in Bouazzaoui 2015).

The motivations of the five Moroccan Metal bands

To develop a greater understanding of the five Moroccan bands' specific motivations that stimulate them to produce and sustain their musical discourse, this subsection is devoted to revealing, discussing, and connecting the bands' subjective experiences, and motivations with the discography's themes elaborated above. The aim is to explore the Moroccan bands' areas of concern about transgression, musical activism, and the conservative Moroccan context.

Voicing one's opinion, and raising awareness

Motivation is a crucial element in understanding the musical discourse of Moroccan Metal bands as it justifies the reason for their existence. All of the interviewed bands equally shared their interest and passion for making Metal music, arguing that it is their only way to voice their attitudes, entertain themselves and spread awareness. The bands' interviews reveal a set of statements that seem to positively reinforce and contextualize the lyrical theme *"resistance and lamentation of the human condition"* elaborated in the previous subsection above.

To begin with, Hicham Hamzi, the drummer and conceptualizer of the band Sakadoya, offers a very important interpretation of his band's music, stating that: "(…) Look! We're living in a world filled with hypocrisy; everyone lies to you to achieve something. I don't claim the truth (…) I say what I feel (…)." Sakadoya also mentions that the local Moroccan authorities reinforce ignorance by insulting Moroccan intelligence and practising the process of "*Istihmar*", [the act of dumbing down the masses for political

reasons] as if the Moroccan society is still living in the dark ages. [Referencing his band's album "Back to the Age of Slaves"] The band maintain that issues related to worldwide systematic manipulation have been an inspiratory concept behind the making of their music. The band also report that addressing hot-button issues like the situation of the labour system is something nearly absent from Moroccan mainstream music and media narratives. Hamzi also says:

> (…) They say Metal is 'Sda' rass' [disturbing noise that causes headache] because they don't know (…) I've never heard any Chaabi [common folkloric music in Morocco] or a Rai song talking about the slavery Moroccan employees suffer from. These things will not be talked about by 'Chikha Trax' [a famous folkloric female singer and dancer in Morocco] (…) Even Moroccan media don't usually address these problems as they are (…) I know people who work for 12 hours a day only to earn '2 Riyals' [a very low sum of money] (…) Isn't it a new form of slavery? (…) At least we have discovered the trick [developed awareness] (…)

In their interview, like Sakadoya, Thrillogy argues that playing Metal is their only way to communicate their sophisticated thoughts without censorship. They claim that articulating their concerns does contribute to the awareness of their respective community. For example, Wassim, the band's founder, guitarist and vocalist, states:

> (…) Thrash [an extreme subgenre of Metal that the band plays] is known for its honesty. I can't beautify reality and dance to you [moves his belly like dancing sarcastically] (…) Metal is like a smack on the face (…) As I told you it [Metal] doesn't lie to you, it teaches you how to think
> Wassim adds that the kinds of topics they target are
> The problems that someone may experience; could be sociological, workplace, or political. We try to make our lyrics metaphorical, not always, (…), but the reader should feel that there is an impact that makes him identify with the song (…)

Souhail Ahenjir, the lead guitarist and brother of Wassim Ahenjir says: "(…) I can't return from work and play Pop music [the band laughs sarcastically] because it doesn't help me release all the accumulated stress that I acquire through the day." Mohamed-Amin Benabdelmoumen, the founder and keyboardist of Kawn, has his take on his band's content arguing that it is all about revolting against the things that hold people from being

themselves or from reaching their aspirations. According to him, such obstacles can be many issues. He reports:

> We talk about many things (…) Financial problems, home environment, familial situations or people's hypocrisy (…) It depends (…) Sometimes things happen in your life or happen to someone you know and it inspires you to write songs, (…) It's not always about politics (…) You need good lyrics that match the performance (…) You can't play a high-level performance with words like 'You a stupid hoe you a, you a stupid hoe' [Mocking a song produced by the international Pop-star Nicki Minaj] (laughs) (…)

Kawn also argues that the primary motivation behind their music is "to reignite energy in them [their audiences]" and to "refine the image of Metal music in Morocco." The band's drummer and percussionist Salah Eddine Kida adds: "(…) We want people old and young to enjoy Metal music (…) We have plans to integrate 'Gnawa' [a body of Moroccan and sub-Saharan African Islamic religious songs and rhythms] and Tamazight [Amazigh language spoken in Morocco]." The band expresses their musical activism by "presenting the Moroccan Metal scene and Moroccan identity to the rest of the world." They also explain the symbolic significance of their album artwork which portrays an old man wearing Djellaba [a traditional Moroccan dress] looking at a Moroccan traditional gate inscribed with mosaic and surrounded by stars and galaxies.

Suicide Machine argues that their band try to target many important issues to inspire their audiences. For example, Mohamed Ilias Horaira, the band's co-founder, vocalist and lyricist, says:

> (…) We also talk about other topics like criticizing the global system: its politics, economics and social (…) We also talk about human's most extreme yet profound sentiments and emotions (…) Metal is very complex in terms of its topics (..) For us, it's a tool of communication to speak our minds and the minds of people like us (…) It's not easy to compose a Metal song because it requires doing research

Based on the bands' words, the diversity of Metal topics and the passion for Metal music are unquestionable due to the sophistication of its sound and the sincerity of its messages. Metal is also used by the bands to demonstrate their motivation to voice their political resistance, concerns and intellectualism about the world they live in. Indeed, the civil rights activist and iconic black African American singer Nina Simone states "An artist's duty as far as I'm concerned is to reflect the times" (cited in Nevins 2021). The bands

also equally claim that Metal helps them spread awareness amongst young Moroccans while offering authentic and honest pictures about reality without losing touch with their community which is labeled by Suicide Machine as a "non-superficial community." Moreover, the bands repeatedly state their motivation is to use Metal as a safe underground yet entertaining space to express their dissatisfaction without being censored or judged by mainstream attitudes.

As for the aforementioned authenticity of Metal music, the bands tend to confirm their attempt to address issues that are nearly absent from mainstream music. Interestingly, Walser (1993) reports that typically Metal fans feel "paranoid" when they are exposed to mainstream music because, according to them, the songs are full of lies and fabrications about the world (159). Bearing in mind music and activism, Nancy Fraser and the German philosopher Jürgen Habermas suggest that political engagement is as much a matter of speech acts as physical ones (as cited in Street et al. 2007). In other words, Moroccan Metal songs seem to convey social commentary that may somehow promote political engagement, and civic activism or at least stimulate critical thinking, a fact that may consequently impact the social conduct, and identity politics of individuals or groups alike. Hess (2018) argues that artists do not only use music as a means of identity formation, but also as a site to engage in, express, and formulate identity politics. Similarly, Leung and Kier (2008) conducted empirical research entitled "Music Preferences and Civic Activism in Young People" on adolescents; the results show that Heavy Metal audiences were among the highest concerning civic activism.

Concerning the effects of music on social behaviour, Hip-hop songs have proven their merit to become protest songs throughout history (Cannon 2020). However, even though Moroccan Metal artists tend to use their songs to denounce different forms of oppression and injustice that shape the developing world (Guibert 2006), not every song becomes a protest song. In other words, protest songs require mainstream access along with an exclusive association with an identified social cause or movement (Guerra and Turner 2021). A great example is the song "Rais Le Bled" where the young Tunisian rapper "El General"–real name Hamada Ben Amor–criticized President Zine al-Abidine for the poor socio-political conditions that shaped Tunisia at the time which made the song to be taken by the public as a form of social anthem that actively influenced The Arab spring revolutions (Gana 2012).

In brief, the struggle of Moroccan Metal bands to raise political awareness is faced with difficult circumstances that surround their scene. This includes (1) their small size as a community of Metal music in Morocco, (2) the stigmatization assigned to them by conservative forces (3) the linguistic barriers as most of the songs are sung in English. Added to this is Metal's

transgressive sound which is not favored by mainstream standards. As a result, Metal songs not only fail to inspire larger audiences as the case with Moroccan Rap music, but also remain unable to transcend its underground social commentary role to become inclusive and impactfully protestive.

Releasing negative energy and asserting one's-identity

The five bands assert that their dedication to this type of music is a question of identity since Metal according to them is "circulating in their blood." They also state that they have no intention to quit performing despite how misunderstood this music is in their context. Additionally, the bands affirm that transgression in their songs is a key to releasing negative energy, expressing frustration and coping with sociological and psychological challenges. Such statements seem to resonate and contextualize the previously revealed and discussed theme - "psychological disturbance and human violence*"* about the bands' discography.

The content analysis adopted in this study captures the bands' verbal expressions and notions that portray Metal as a "lifestyle." To elaborate, Suicide Machine's drummer Ahmad Hamza Chahbouni explains that:

> When I go to record, I show my father the video; he watches it with me, and he feels happy to watch even if he doesn't know what it is about (…) He [the father] has reached the state of realizing that I don't just play music, but I do something that is my passion; something that justifies my existence on this planet

His band's member, the vocalist and lyricist, Mohamed Ilias Horaira adds:

> (…) We have a cultural problem in our society that is producing stereotypes and pre-judgments. They say we are drifting away from religion, but for us, we've felt this music (…) It's a part of us (…) It [Metal music] lets us express problems better (…) regardless of all these rumours and stuff, they will not stop us from doing what we like and encouraging others to do what they like

Thrillogy argues that Metal music for them is a "lifestyle" that helps them release negative energy and assert their identity. Souhail Ahenjir, the lead guitarist and brother of Wassim Ahenjir narrates, "We are young, we have a lot of energy and we always look for ways to release this energy (..) Metal is one or maybe the ideal genre for you to express and get rid of all your problems." Regarding the sincerity of Metal music, the bass player of Alcantagram band, adds:

> We haven't searched for Metal, Metal searched for us (the band laughs). You cannot understand this music if you are not made

> for it (…) When I compose a riff [technical term refers to the repeated chord progression in music] I feel better, (…)

In the same vein, Sakadoya's drummer, affirms the following: "You need to talk about some problems (…); otherwise, you will explode, you understand me (…)." Similarly, Kawn mentions on many different occasions that producing *Progressive Metal* music makes them intellectually relevant and psychologically at ease because for them "music is a therapy." The founder and keyboardist of the band Mohamed-Amin Benabdelmoumen explains:

> (…) I always do rehearsals because the songs we play require focus and concentration so you can master all the odd time signatures [a technical word that indicates a sudden shift in song structure] (…), Playing this music is entertaining; it's like a therapy (…)

In their interview, Alcantagram points out that playing the extreme converts their anger and problems into something positive. They add that playing Metal is "a matter of personal taste" that "should not be judged" in their opinion. Furthermore, Alcantagram's writing process is motivated by its attempt to uncover the dark cult of human beings and issues related to psychological disturbance that are considered taboo topics in their society. They also mention the power of growling instead of singing and its impact on their psyche. For example, Mouhssin Sag Ine, the lead vocalist and songwriter of the band reveals that "(…) You cannot be yourself in this country, and they ask you why you growl? If I don't growl, I will choke you (laughs) (…)."

As a way of digesting the transgressive aspect of Metal music, it is very important to consider the experience of Metal enthusiasts both artists and fans, and the effectiveness of sonic and thematic transgression in their music as a tool for releasing negative energy, reflecting psychological hardship, and asserting symbolic power. In this sense, transgression is approached as a platform for psychological healing. In his book, "The History of Sexuality," Foucault argues that discovering what's deeply hidden from individuals is an equally important function of modern psychiatric practice to finding what someone conceals in their psyche (Foucault 1976). Rafalovich and Schneider (2005) oppose Foucault's assertion, arguing that the transgressive references to psychological chaos (such as suicide, alienation and excessive aggression found in Metal music inherently rebels against the idea that advocates establishing a relationship between the self and something external, be it another person or an organized therapeutic apparatus. This claim is corroborated by Jonathon et al (1990) who dismiss the need and validity of seeking consolation from other parties affirming that the psychological pain

portrayed in various Metal songs is strictly individual and idiosyncratic, and thus requires solutions suiting only that particular individual. Baker and Brown (2016) conducted a literary-lyrical analysis of Metal songs, the results showed that transgressive songs that could be interpreted as a negative influence can induce feelings of relief and comfort in the listeners which as a result makes Metalheads able to bear negative emotions and cope with sudden breakdowns easily. Additionally, speaking of Metal and individual empowerment, Mouhssin Sag Ine, the vocalist and lyricist of Alcantagram, who is also known for his interviews about Metal with different media platforms such as Morocco World News, implicitly reveals in his narratives how the act of "growling" can be interpreted as an act of empowerment that gives the growler a generous sense of intensity and exclusivity through releasing and sharing repressed anger.

Almeida (2017) elaborates on both verbal and symbolic transgression used by Moroccan artists such as the case of the Moroccan Rapper Chaht Man who uses the swearword 'Fuck You' in his artwork as an expression of rebellion and protest. She also mentions the example of Don Bigg, with his 2006 album Mgharba Tal Mout (Moroccans till Death) which represents a symbolic revolution using swearwords and street Darija to denounce the sociopolitical conditions in Morocco. Boum and Ben-Layashi go further by categorizing Moroccan rappers as "new rebels" (Boum 2013, 174), "revolutionaries and 'anarchists' hip-hop youngsters" (Ben-Layashi 2013, 151). Going back to the auditory, verbal and visual transgression used by Moroccan Metal artists, it is obvious that both underground Metal and Rap share common elements as far as verbal and symbolic transgression is concerned. For example, swearing words and growling could be both put in the same category as a musically unconventional way to express dissatisfaction with the sociopolitical conditions of a given society. The distinctive dress codes of both Metal and underground Rap communities also represent a transgressive yet symbolic statement against the dominant identity politics.

Drawing from Moroccan Metal artists' motivation about transgression, one could conclude that the bands use this controversial genre to actively promote values of the culture of courage, individuality, difference and freedom of choice in a conservative setting. The bands also practice their musical activism by raising awareness about "taboo" issues such as psychological disturbance, suicide, dark imagery and violence that are disregarded in mainstream music. Metal for this community occupies the role of a safe space where fans and artists practice symbolic power with the use of provocative language, visuals, sounds and content since other mainstream styles according to the bands are limited in terms of expression and creativity.

Finally, such a style is used by bands and audiences alike to release negative energy and cope with reality twists.

Promoting co-existence and denouncing cultural hegemony

For the five Moroccan Metal bands, being involved as an artist of Metal music is not an easy task as it comes with its challenges. According to them, this genre is shaped by misrepresentations, negative stereotypes and pre-judgments. In this regard, denouncing hegemony and promoting co-existence stands as a motivational cause that reinforces their musical discourse previously elaborated with the theme of anti-extremism, solidarity and co-existence.

On the one hand, Sakadoya expresses that advocating messages of co-existence in their music allows them to target different sorts of ideology-based conflicts to "represent the open-minded Moroccan." Hicham, elaborates that: "(…) In the USA some things happened like when some people trait Arabs or Muslims as terrorists and illiterate (…) We are not living in Sahara and travelling with camels (laughs) (…)." Interestingly, the band also mention the situation of the Jewish community in Morocco arguing that some of their songs including *"Let's Pray"* talk about issues of difference, ethnocentrism, disunity and division. Accordingly, the example of *"Let's Pray"* addresses the generalized depiction of the Jewish community by some Moroccans as profane thanks to the influence of the Palestinian issue which is highly politicized. The band continue that over-generalization is dangerous as it motivates creating extreme tendencies and dichotomy in societies. On the other hand, Kawn's band explain that their music may encourage other artists to be more open-minded about Metal music by "trying new things." The discography of the band seems to communicate such values as they associate different styles and languages in Metal structure to positively impact negative attitudes about Metal. As the drummer of the band Salah Din Kida explains, "We want people to understand Metal", Mohamed-Amin Benabdelmoumen, the founder, and keyboardist of the band also adds "Myrath did it before us" [referring to the international Tunisian band that incorporates Arabic language and oriental scales in Metal music]. However, despite the musical activism of Kawn to familiarize Metal, dogmatic Metal fans especially underground/extreme fanatics tend to show sceptical attitudes towards such adjustments that seem to endanger the authenticity of Metal as the band argues.

Suicide Machine band point out that "Metal music does what the Moroccan educational system could not do." Mohamed Horaira, argues: "You should not force other people to be like you, dress like you or think like you (…) You know, we studied in 'Zham' [a metaphor that indicates poor education] Metal is our school (…)" About the problem of co-existence, Mouhssin Sag Ine of Alcantagram, reveals the following:

> We've reached this stage of *"l'kalakh"* [Moroccan term for utter stupidity] when sometimes people like your family judge you because of the fictional zombie painted in your black T-shirt. I rent an apartment; I'm living by myself just to avoid judgments when I record my growls (…)

Suicide Machine band add that the previous generation [Millennials] tend to be more judgmental and less open-minded in comparison to the current generation. The latter according to the band is doing fine somehow due to the advent of the internet and the improvements that have shaped the Moroccan educational system during the last years. The band also argue that besides the fact that Metal is a "lifestyle" for them, it is also their best choice to resist oppression and ignorance. Globally, for the time being, extreme attitudes against Metal are losing ground as the world is becoming more globalized. Hjelm et al. (2012) go in the same vein adding that both governments and mainstream Islamic movements in Morocco, Egypt and even Saudi Arabia have become more tolerant toward Metal culture because they realized the importance of not alienating the "new generation" (11–12). Joseph Ouechen, a passionate photographer interested in Moroccan subcultures, elaborates on the Moroccan situation adding "A few years ago, I couldn't even wear skinny jeans without people looking at me weirdly." He maintains that with *L'boulevard*, people have started getting familiar with Metal culture (as cited Kaabi 2019). This happens in times when Metal bands are still getting banned worldwide such as the example of Behemoth in Russia, Lamb of God in Malaysia, and many more. Some bans could last for years even (Divita 2018).

As a way of using transgressive music to denounce extremism, Alcantagram mention that some of their songs such as "*Dehumanization"* and *"Perfect Revolution"* are violently provocative songs because they were inspired by some tragic incidents such as the one that happened to the two female Scandinavian tourists in Morocco in 2018[9]. They explain that some of the violent lyrics in their songs deliberately depict the twisted psychological aspect of the murderers who cold-heartedly committed their crimes under the influence of a certain belief. For instance, Hatim Saghdani, the bass player of Alcantagram, reveals that:

> (…) You need to correctly interpret the words (…) We are not the killers; we describe the mentality of the killers (…) I see many hateful comments on Facebook coming from some people, believe me, bro, it's too extreme (…) I play the extreme [Death Metal] and I see people moshing [A style of Metal dancing in which participants push or slam into each other

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[9] In 2018 three Islamic State group supporters murdered two Scandinavian hikers in Morocco. Check this link for details: https://bbc.in/3ylQVJC

aggressively] around me like what you see in a mental hospital
(laughs), I cannot even kill a fly (laughs)

The band also express their constant fear of being subjected to an act of terrorism in their concerts. For example, Mouhssin, narrates:

> During the Tremplin competition in Casablanca, I'm talking about this last edition in 2018, I and my friend left the 'RUC Stadium' [the concerts' venue] to go buy some cigarettes just around the area. Suddenly, some people started throwing stones at us and yelling 'Wa zwaml!!' [Homo-sexuals] We didn't do anything to them (…). They stoned us this time, next time, I don't know, they will bomb us *'Fham Tsetta'* [a Moroccan proverb used to express lack of rationality]

Suicide Machine's members also chime in on the phenomenon aforementioned by Alcantagram arguing that being a Metalhead in Morocco may cause you to be insulted or be given uncomfortable stares by random people. The band add that these incidents motivate them to address issues of ethnocentrism and musically voice their opinion. The lead vocalist and lyricist of Suicide Machine, Mohamed Ilias Horaira elaborates that he was subjected to different kinds of harassment in the streets of Casablanca on many occasions in the past indicating that the situation has recently changed for the better. He narrates that:

> (…) At *'Lma'arif'* [One of the city's most Westernized areas, with a busy shopping district] some thugs with knives surrounded our way thinking that we were Satanists, atheists, homosexuals you know, it's all included in Metal (…) Sometimes people spit at you because you are wearing a chain or piercing (…) One day I was going near the Mosque of the neighbourhood when a group of Muslim brotherhood started preaching me. Someone took it to another level by putting his hand on me and started reciting *'Ayatul Kursi'* [a Quranic verse] as if I'm possessed [the whole band laughs sarcastically][10]. So, I've convinced myself that music is in my mind, heart and ears; I've stopped wearing Metal clothes outside the context of concerts. I will wear what I want when I'm in another country, but I'll always talk about the stuff that bothers us (…)

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[10] One important interpretation of such an act is the fact in the Islamic part of the Moroccan culture, some individuals who suffer from mental illnesses or follow alternative lifestyles may be perceived as "Mskoun," or having "Mas mina Chaitan" believed to be possessed by Jinn. This belief is rooted in the idea that Jinn was created before humans and can inhabit human beings. More about this topic is documented by Abdel Haleem in his 2004 book entitled *The Qur'an,* published in Oxford by Oxford University Press.

Thrillogy band also share their experience of discrimination stating that the worst thing that happened to them was when someone cut off the power supply during their *Thrash Metal* show in 2015 at Fez City. Salah Din Kida, the drummer of Kawn band, adds that his band were humiliated when someone from the audience started publically uttering "Satan worshipers" during their 2018 *L' Boulevard* show. Similarly, Ali Drab, the guitarist of Suicide Machine and the oldest as well as the most experienced member of all the five bands, criticizes some Moroccan media outlets, such as some local Youtube channels, Chouf TV and Hespress arguing that they deliberately tarnish the reputation of the Moroccan Metal subculture to make material profit. He also strikes up an interesting event that happened in 2015 he says, "(…) I was shocked when the marriage of our friend Amine was rejected because of Satanism accusations (…) More will happen as long as some people look at us this way." Such incidents, according to Ali Drab, tend to generally reinforce the inner suffering of the Metal community within Moroccan society.

To discuss the bands' motivations for making their music, it is worth mentioning Sakadoya's concern with the Jewish community and how it is generalized and misrepresented by some Muslim Moroccans. The narratives regarding this matter may reflect their great sense of musical activism that targets issues that are commonly absent from other mainstream music styles. The contribution of Moroccan bands towards raising cultural awareness about the dominant misrepresentation of the other reminds us of the complex discourse of Orientalism discussed by Edward Said that implies the old-school problematic Western depictions of the Orient as barbaric, exotic, and lustful population (Said 1985). Such a discourse could repeat itself in modern days, because of the stereotypical depictions attributed to the Moroccan Jew and Metal community as the bands reveal. Sakadoya's position towards the different other goes hand in hand with Mendes-Flohr (2013) who argues that tolerance is the ability to both accept and celebrate the different other as a manifestation of a higher acceptance level. In addition to their messages of solidarity, the musical hybridity adopted by Kawn embodies a brave attempt to transcend Metal limitations in terms of language and sound so that mainstream audiences could finally embrace Metal culture as a meaningful platform of art and hybridity. Such a multicultural perspective has already been communicated by Moroccan women photographers mainly Lala Essayd, Leila Alaoui, and Ytto Barrada, and their artistic efforts to project an inclusive Morocco through their camera lenses (Nachit 2016). Going back to music, at a certain point in time, Rappers in Morocco were portrayed as symbols of Western imperialism due to their imitation of Western Rappers. However, such perception has changed because Rap music, as an example, has successfully proven its flexibility and relevance by incorporating authentic

elements such as the Moroccan language to appeal to the general audiences (Almeida 2017).

As far as the issue of Metal music and ethnocentrism is concerned, the provocative depictions of the extreme religious mentality embodied in Suicide Machine songs like the case of "*Old as New"*, which is already discussed in the previous section, seem to resonate with the serious challenges that shape Metal community in terms of personal freedom and privacy. For example, In addition to the event of 2003 mentioned in the review of the literature when Metalheads were arrested and jailed by Moroccan authorities because of Satanic accusations, the narrative of Ali Drab reminds us of a relatively recent questionable act performed by Moroccan authorities that exposed itself in 2015 at Agadir's court when Amine Khairi, a Metal enthusiast, was denied the legal request to marry his female German partner due to the accusations of "Satanism" (Jabran 2015). Such extreme reactions tend to limit individual freedoms in Moroccan society given the fact that the Metal community is represented by conservative attitudes as a threat to the Muslim "Ummah" as if Metal music competes with Islam. To strike back, Moroccan bands seem to artistically communicate their alternative discourse about religious extremism through their songs as Mohamed Ilias Horaira argues when he says: "We try to differently re-narrate the content of religion according to our imagination." Put differently, Moroccan Metal bands are artistically engaged in denouncing issues related to ethnocentrism. For example, after the terrorist attacks[11] executed by the Islamic radicals on 16 May 2003 in Casablanca, the people behind the Moroccan annual festival, L'Boulevard, immediately responded by organizing a "Metal against terrorism" concert (Langendonck 2010).

All in all, Moroccan Metal bands are artistically and narratively involved in resisting acts that aim to restrict the freedom of Moroccan individuals in the name of ideologies by impeding progressive voices with the excuse of "threatening the national identity" (Langendonck 2010). The five bands have shown equal concern about the extreme views assigned to their community in particular and to the others in general. As a reaction, they use their music as a weapon to counterattack or satirically represent and criticize different forms of cultural hegemony, human violence, and political manipulation to inspire their small community to develop some sense of political awareness. However, careful observation of the bands' narratives especially Mohamed Ilias Horaira's shows that despite the critical content of Moroccan Metal songs as a discourse of resistance, some Metal artists and fans tend to adopt submissive attitudes to avoid cultural tension since they are forced to comply with their societal norms, practices and identity politics in a way or another.

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[11] The 2003 Casablanca bombings were a series of suicide bombings on May 16, 2003, in Casablanca, Morocco. The attacks were the deadliest terrorist attacks in the country's history. Check this link for details: https://nyti.ms/386dOX2

Conclusion

The paper is set to explore the multi-dimensional discourses of Moroccan Metal music. The focus is on the lyrical content and the subjective experience of five Moroccan Metal bands with the ultimate objective of identifying and understanding their general views, motivations, political discourses, philosophies and sense of musical activism. The paper has used both content analysis and semi-structured interviews to achieve its objectives. Generally, Moroccan Metal songs convey a meaningful discourse that takes counter-hegemonic attitudes with the primary purpose of engaging the listener in a political, philosophical and psychological debate on human actions. However, due to the limitations of Moroccan Metal music in terms of cultural representations, sound and language use, this form of art is doomed to be buried underneath with little to no chance of climbing the mainstream musical ladder as Rap music does. Additionally, Metal music fails to influence the mainstream public in terms of social action and intellectual behaviour because of its unpopularity. Moreover, according to Moroccan Metal bands, this music exceeds its traditional role as it is actively becoming a matter of identity to them. The findings of this study also expose the struggle of Moroccan Metal bands and how they are subjected to different acts of violence, social harassment, and discrimination. The exposed incidents that portray different institutional and social attacks on Metal bands in Morocco may reflect the lack of a deeper understanding of Metal music, its visual culture and its sophisticated discourses. As a result, despite the Moroccan bands' narratives that seem to convey optimistic attitudes toward their culture as being gradually accepted in comparison to the past, Metal artists and fans may consciously or unconsciously submit to the dominant social norms to avoid tension despite the critical content of Metal music as a discourse of individual empowerment, resistance and culture of courage. Based on such perspectives, one could argue that Metal music for Moroccan Metal bands is not necessarily a countercultural form of expression that seeks to encourage radical reactions or destroy central values of Moroccan society, it is rather a flexible platform used by contemporary Moroccan artists and the youth to voice their concerns as a form of musical activism and provide interesting social commentary. Metal music seems to assist the Moroccan bands in releasing their negative energy and expressing their existential frustration in a framework of influencing their respective communities without being censored or judged.

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Perception de la Sanction, Perception de la Justice Sociale et Attitude a l'Egard du Paiement de l'Impot chez les Chefs de Menage d'Abidjan (Cote d'Ivoire)

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Résumé

En dépit de l'importance indéniable des recettes fiscales dans la constitution du budget de l'Etat et, par conséquent, pour le financement des projets d'utilité publique, un nombre de plus en plus élevé de contribuables en Côte d'Ivoire refusent de payer l'impôt en dissimulant leurs biens ou en les déclarant partiellement. La présente étude tente de comprendre cette situation en examinant l'incidence de la perception de la sanction encourue pour fraude ou évasion fiscale et de la perception de la justice sociale sur l'attitude à l'égard du paiement de l'impôt chez les chefs de ménage d'Abidjan. L'enquête porte sur un échantillon représentatif de 350 participants recrutés selon la technique de l'échantillonnage par quota. Les données sont recueillies grâce à un questionnaire et traitées à l'aide du test du « t de Student ». Les résultats obtenus corroborent nos hypothèses. D'une part, les chefs de ménage qui sous-estiment la sanction qu'ils encourent pour fraude ou évasion fiscale sont moins favorables au paiement de l'impôt que ceux qui surévaluent cette sanction. D'autre part, les chefs de ménage percevant une injustice sociale sont moins favorables au paiement de l'impôt que leurs pairs percevant une justice sociale. Ces résultats pourraient aider à l'élaboration de stratégies de sensibilisation plus efficaces pour favoriser la conformité fiscale volontaire.

Mots-clés: Perception de la sanction, justice sociale, attitude, impôt, chef de ménage

Perception of Sanction, Perception of Sovial Justice and Attitude towards Payment of Tax among Heads in Abdjan (Cote d'Ivioire)

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Abstract
          Despite the undeniable importance of tax revenues in the constitution of the state budget and, consequently, for the financing of public utility projects, an increasing number of taxpayers in Côte d'Ivoire refuse to pay tax by concealing their property or by partially declaring it. This study attempts to understand this situation by examining the impact of the perception of the penalty incurred for tax evasion or fraud and the perception of social justice on the attitude towards paying tax among heads of households in Abidjan. The survey is based on a representative sample of 350 participants recruited using the quota sampling technique. The data are collected through a questionnaire and processed using Student's t-test. The results obtained corroborate our hypotheses. On the one hand, the heads of households who underestimate the penalty they incur for tax fraud or evasion are less favorable to paying the tax than those who overestimate this penalty. On the other hand, the heads of households perceiving a social injustice are less favorable to the payment of taxes than their peers perceiving a social justice. These results may help in the development of more effective awareness-raising strategies to encourage voluntary tax compliance.

Keywords: Perception of sanction; social justice; attitude; tax; head of household

Introduction
          L'évasion fiscale désigne le fait d'éviter de payer l'impôt en exploitant les faiblesses de la législation fiscale ou les vides juridiques qui la caractérisent (Sanae & Mohammed, 2016). Lorsque cette pratique procède de la violation d'une loi fiscale, on parle de « fraude fiscale ». L'impôt est un prélèvement

financier obligatoire effectué par la puissance publique (l'État ou les collectivités territoriales) sur les ressources des personnes physiques ou morales vivant sur son territoire ou y possédant des biens. Il est destiné au financement des projets d'utilité publique.

Le phénomène des fraudes et évasions fiscales est mondial. Selon le Rapport de Global Alliance For Tax Justice (2021)**,** les pertes fiscales annuelles dans le monde avoisinent 482,6 milliards de dollars américains. Lorsque l'on rapporte les sommes perdues en raison des fraudes et évasions fiscales à la quantité de richesses produites sur chaque continent, l'Europe est le continent le plus frappé par ce phénomène, avec 225,2 milliards de dollars de déperditions fiscales par an, soit 1,1% de son PIB (Global Alliance For Tax Justice, 2021). Elle est immédiatement suivie de l'Afrique, de l'Amérique Latine, et des Îles Caraïbes et Américaines dont les pertes fiscales respectives équivalent à 0,7% de leur PIB (Global Alliance For Tax Justice, op. cit.).

En Afrique, la Côte d'Ivoire est l'un des pays qui enregistrent le plus fort taux de fraudes et d'évasions fiscales. Elle perd chaque année environ 192,8 millions de dollars en raison de ce phénomène, soit 0,4% de son PIB (Global Alliance For Tax Justice, op. cit). Près d'un citoyen sur cinq en Côte d'Ivoire reconnait avoir refusé de payer l'impôt au cours de l'année 2020 ou avoue qu'il le ferait si l'occasion se présentait (Afro-baromètre, 2021). D'ailleurs, la proportion de citoyens ivoiriens qui remettent en question la légitimité de l'Etat à percevoir l'impôt augmente avec le temps (Afro-baromètre, op. cit.). Cette proportion était de 23% en 2013. Elle est passée à 26% en 2017, puis a augmenté de 9% en deux ans pour atteindre 35% en 2019.

Ces faits indiquent que l'incivisme fiscal prend de l'ampleur en Côte d'Ivoire.
Si rien n'est fait pour inverser cette tendance, le gouvernement ivoirien risque de ne plus pouvoir mobiliser suffisamment de fonds propres pour financer les projets d'intérêt public.
Il ne serait donc plus à mesure de construire de nouvelles infrastructures publiques pour répondre aux besoins des populations, ni financer l'entretien de celles déjà existantes, à moins de s'endetter pour y arriver. Cela aurait pour répercussion d'entraver la satisfaction des besoins fondamentaux des populations, surtout les plus pauvres, notamment l'accès à l'eau potable, à la santé, à l'éducation, au logement, etc.

En réponse à cette situation préoccupante, le gouvernement ivoirien a mis en place un plan stratégique couvrant la période de 2020 à 2024 (CAPEC, 2021). Ce plan procède de l'application de mesures comme la baisse de la Taxe sur la Valeur Ajoutée (TVA) qui passe désormais de 25 à 24%, la réduction des impôts sur le revenu en particulier pour les personnes à faible revenu et les travailleurs ayant souscrit à un prêt immobilier, la rationalisation de la fiscalité locale pour éviter qu'elle ne se superpose à celle de l'Etat ainsi

que la suppression ou la réduction de la contribution employeur pour les microentreprises et les entreprises nouvellement créées durant les trois premières années de leur existence (CAPEC, op. cit.).

Cependant, en dépit des efforts déployés par le gouvernement ivoirien pour optimiser le recouvrement fiscal, l'incivisme fiscal ne cesse de croître chez les contribuables ivoiriens et spécifiquement abidjanais. Au regard des conséquences néfastes de ce phénomène, il est important d'en rechercher les déterminants pour tenter de le réduire à défaut de pouvoir l'éradiquer totalement. Dès lors, comment peut-on expliquer cette propension des contribuables à refuser de payer l'impôt ? Certains modèles théoriques tentent de répondre à cette question.

Selon le modèle de la dissuasion économique, l'individu choisit délibérément de ne pas payer l'impôt s'il juge que les avantages de la fraude fiscale sont supérieurs aux inconvénients de cette pratique (Walsh, 2012). En clair, l'individu décide de dissimuler ses biens ou de les déclarer partiellement lorsqu'il estime, d'une part, que le taux d'imposition est trop élevé et, d'autre part, lorsqu'il juge que la probabilité qu'il soit interpellé pour fraude ou évasion fiscale de même que la sanction qui lui sera appliquée dans ce cas sont faibles.

La théorie de l'échange fiscal propose une autre explication de l'incivisme   fiscal. Elle soutient que l'impôt est perçu par le contribuable comme étant la contrepartie des biens et services publics dont il bénéficie de la part de l'Etat. Ainsi, l'individu est défavorable au paiement de l'impôt s'il estime que les recettes fiscales sont mal gérées, voire détournées par les gouvernants à des fins personnelles. En revanche, il est favorable au paiement de l'impôt s'il considère que les recettes fiscales sont honnêtement utilisées au profit de l'intérêt général.

Outre les explications théoriques, la littérature scientifique éclaire aussi sur les principaux facteurs responsables de l'incivisme fiscal. Elle met en exergue une variété de facteurs explicatifs du comportement fiscal ou de l'attitude à l'égard de la conformité fiscale pouvant être résumés en trois grandes catégories : les facteurs juridico-institutionnels, les facteurs socio-environnementaux, et les facteurs individuels.

Les facteurs juridico-institutionnels sont en rapport avec la politique économique de l'Etat, le fonctionnement de l'administration fiscale, les lois fiscales et leur application. À titre illustratif, au Sri Lanka, Jayawardane & Low (2016) mettent en évidence que le taux d'imposition élevé, la complexité et l'injustice du système fiscal, l'insuffisance des audits fiscaux, la faible probabilité de détection des fraudeurs ainsi que les faibles pénalités expliquent l'incivisme fiscal des contribuables. En outre, la méta-analyse conduite par Alm & Malezieux (2021) révèle qu'un système d'imposition forfaitaire et le

fait d'accorder l'amnistie fiscale diminuent la conformité fiscale des contribuables. En revanche, Sentanu & Budiartha (2019) observent en Indonésie que la facturation et le paiement électroniques des impôts améliorent chacun la conformité fiscale des individus.

Les facteurs socio-environnementaux sont relatifs au fonctionnement communautaire. Ils incluent essentiellement les normes sociales, l'influence des pairs, la corruption, le nombre d'infrastructures publiques ainsi que la qualité des infrastructures et des services publics. Par exemple, Yimam (2021) montre que l'évasion fiscale endémique et l'influence de pairs défavorables au paiement de l'impôt provoquent une baisse de la conformité fiscale chez les plus riches contribuables d'Addis-Abeba, en Ethiopie. À Lagos, au Nigéria, Adepoju & Ajayi (2019) établissent que la corruption, le manque ou le mauvais état des infrastructures publiques (routes, hôpitaux, écoles, système d'alimentation en eau potable …), de même que des services publics de mauvaise qualité réduisent la volonté des propriétaires de biens immobiliers résidentielles de payer l'impôt foncier.

Les facteurs individuels influençant la conformité fiscale sont ceux liés au contribuable. Ils sont d'ordre sociodémographique (sexe, âge, niveau d'études, appartenance politique), socioéconomique (chômage, niveau de vie) et psychologique (traits de personnalité, facteurs affectifs, facteurs cognitifs). En effet, Ibadin & Kemebradikemor (2020) étudient les facteurs sociodémographiques associés à la conformité fiscale à partir d'une recension des écrits. Ces auteurs révèlent que les contribuables de sexe masculin, jeunes et de faible niveau de scolarité sont plus réfractaires au paiement de l'impôt que ceux de sexe féminin, d'âge avancé et de niveau d'études élevé. Péclat (2015) observe, pour sa part, que les contribuables affiliés au parti politique au pouvoir sont plus favorables au paiement de l'impôt que ceux affiliés aux partis de l'opposition.

En outre, Hassoune (2010) analyse l'effet des facteurs socioéconomiques sur la conformité fiscale. Il établit, à ce propos, que la précarité économique et le chômage du sujet incitent celui-ci à la fraude fiscale.

L'influence des facteurs psychologiques sur les conduites fiscales est examinée par des auteurs comme Hassoune (2010), Christian & Alm (2014), Deyganto (2018), Castellano (2018). A cet égard, les travaux de Hassoune (op. cit.) de même que ceux Christian & Alm (op. cit.) révèlent que des traits de caractère comme l'altruisme, l'empathie et la sympathie favorisent le paiement de l'impôt ; en revanche, un autre trait de personnalité comme l'égoïsme pousse l'individu à la fraude fiscale et développe chez ce dernier une attitude hostile envers l'administration fiscale. Par ailleurs, Deyganto (op. cit.) observe que les riches commerçants du Sud de l'Ethiopie sont d'autant plus favorables au paiement de l'impôt qu'ils sont sensibilisés sur les pénalités

fiscales, possèdent de bonnes connaissances fiscales, perçoivent le système d'imposition comme simple, équitable et le taux d'imposition ainsi que la probabilité d'être audités comme élevés. En revanche, Castellano (op. cit.) démontre que la non-conformité fiscale est directement liée au manque de confiance dans le système politique et fiscal, à la perception d'une inefficacité, d'une non-transparence et d'une injustice dans les actions de l'administration fiscale.

L'examen des travaux existants révèle que les facteurs juridico-institutionnels ainsi que les facteurs socio-environnementaux sont ceux sur lesquels agissent d'ordinaire les pouvoirs publics pour inciter les contribuables à s'acquitter de leur charge fiscale. Mais, la réticence des populations vis-à-vis du paiement de l'impôt ne cesse de se renforcer en Côte d'Ivoire. Cela nous conduit à relativiser le poids de ces deux catégories de facteurs dans l'explication de l'incivisme fiscal en Côte d'Ivoire. Tout porte à croire que les facteurs individuels seraient les plus influents dans la propension à l'incivisme fiscal en Côte d'Ivoire. L'enquête Afro-baromètre (2021) précise la nature de ces facteurs. Elle révèle que les raisons les plus fréquemment avancées par les contribuables ivoiriens pour justifier leur refus de payer l'impôt sont en rapport avec la minimisation de la sanction encourue pour fraude fiscale et la perception d'une injustice sociale. En effet, 60 % des enquêtés estiment que les impôts sont trop élevés, alors que les citoyens n'ont pas les moyens de payer ces taxes. En outre, 7% d'entre eux sont convaincus que les fraudeurs ne sont pas sanctionnés. Ils considèrent également qu'il n'y a pas de transparence dans l'utilisation des recettes fiscales et soupçonnent les dirigeants de détourner impunément les fonds publics. De surcroit, 5% des citoyens ivoiriens estiment, non seulement, que les services publics rendus par le gouvernement sont de mauvaise qualité, mais aussi que le gouvernement dilapide les recettes fiscales.

Au vu de ces constatations, la présente étude se propose d'examiner l'incidence de la perception de la sanction encourue pour fraude ou évasion fiscale et de la perception de la justice sociale sur l'attitude à l'égard du paiement de l'impôt chez les chefs de ménage d'Abidjan.

Sur la base des modèles théoriques évoqués plus haut dont les principes sont confortés par les résultats des travaux examinés, nous émettons les hypothèses suivantes :

H_1 : Les chefs de ménage qui sous-estiment la sanction encourue pour fraude ou évasion fiscale développent une attitude moins favorable au paiement de l'impôt que leurs homologues qui surestiment cette sanction.

H_2 : Les chefs de ménage qui perçoivent une injustice sociale au sein de la société ivoirienne développent une attitude moins favorable au paiement de l'impôt que leurs pairs qui perçoivent une justice sociale.

La vérification de ces hypothèses requiert la mise en œuvre d'une démarche méthodologique adaptée qu'il convient de présenter.

1- Methodologie

La démarche méthodologique adoptée dans ce travail se résume en trois axes : la description des variables, la construction de l'échantillon d'étude et la présentation de l'instrument de collecte des données.

1.1- Description des variables

Les hypothèses opérationnelles émises plus haut laissent poindre deux variables indépendantes et une variable dépendante.

Les variables indépendantes considérées dans la présente étude sont la perception de la sanction encourue pour fraude ou évasion fiscale et la perception de la justice sociale.

La perception de la sanction encourue pour fraude ou évasion fiscale est une évaluation effectuée par le sujet à la fois sur la probabilité et la sévérité de la pénalité qui lui sera infligée par l'administration fiscale s'il ne paie pas ses impôts, dissimule ses biens ou viole la législation fiscale.

Cette variable est de nature qualitative avec deux modalités :

- la sous-estimation de la sanction encourue pour fraude ou évasion fiscale ;
- la surestimation de la sanction encourue pour fraude ou évasion fiscale.

On parle de « sous-estimation de la sanction encourue pour fraude ou évasion fiscale » lorsque le sujet estime avoir une faible probabilité d'être appréhendé s'il ne paie pas ses impôts, dissimule ses avoirs ou viole les lois fiscales, et juge insignifiante la pénalité ou l'amende qui lui sera infligée dans ce cas.

En revanche, on parle de « surestimation de la sanction encourue pour fraude ou évasion fiscale » lorsque l'individu juge avoir une forte probabilité d'être appréhendé s'il commet la moindre infraction aux lois fiscales, dissimule ses biens ou ne paie pas du tout ses impôts, et considère qu'il risque d'être sévèrement puni ou condamné à une lourde amende s'il s'adonne à ces pratiques.

La perception de la justice sociale désigne un jugement porté par l'individu sur l'application ou non dans la société ivoirienne des principes qui garantissent l'égalité entre les citoyens. Ces principes consistent pour les autorités publiques à gouverner de sorte que tous les citoyens jouissent des mêmes droits et soient jugés de la même manière (l'égalité de droit), à veiller à ce que ceux-ci bénéficient des mêmes opportunités sociales et chances de réussite peu importe leur genre, classe sociale, origine ethnique, appartenance religieuse ou parti politique (l'égalité de chance), et enfin à s'assurer que leurs

concitoyens bénéficient tous de conditions de vie au moins décentes (l'égalité des conditions de vie).

Cette variable est de nature qualitative avec deux modalités :
- la perception d'une injustice sociale ;
- la perception d'une justice sociale.

Lorsque l'individu a tendance à considérer que tous les résidents de la Côte d'Ivoire ne sont pas égaux devant la loi, n'ont pas les mêmes chances de réussite et ne bénéficient pas majoritairement de conditions de vie acceptables, on dit qu'il perçoit une injustice sociale. En revanche, lorsque l'individu a tendance à estimer que les résidents de la Côte d'Ivoire sont traités de façon égalitaire devant la loi, bénéficient des mêmes chances de réussite ainsi que de conditions de vie au moins décentes, on dit qu'il perçoit une justice sociale.

Cette étude examine une seule variable dépendante : l'attitude à l'égard du paiement de l'impôt. Il s'agit d'un ensemble de croyances, de sentiments et d'intentions traduisant la plus ou moins forte inclination ou aversion individuelle pour le paiement de l'impôt. Cette variable est de nature quantitative. Elle est mesurée à l'aide de l'échelle de conformité fiscale de Kirchler & Wahl (2010). Il s'agit d'une échelle de type Likert en 4 points (allant de « pas du tout d'accord » à « tout à fait d'accord »). Les scores sur cette échelle varient en théorie de 19 à 76. Le score 19 caractérise l'attitude la moins favorable à la conformité fiscale, tandis que la note 76 décrit l'attitude la plus favorable à la conformité fiscale. En d'autres termes, le sujet est d'autant plus hostile au paiement de l'impôt que sa note tend vers 19. Par contre, il est d'autant plus favorable au paiement de l'impôt que sa note tend vers 76.

1.2- Echantillonnage

L'ensemble des chefs de ménage de la ville d'Abidjan constitue notre population d'étude. De cette population, nous avons envisagé extraire un échantillon représentatif de sorte que les résultats de la présente étude soient généralisables à l'ensemble des chefs de ménage. La technique de l'échantillonnage par quota permet de construire un tel échantillon. Le principe de cette technique consiste, selon Grais (1998), à reproduire dans l'échantillon la distribution de certaines variables, telle que celle-ci a été observée dans la population. Ces variables, appelées variables de contrôle, doivent être en corrélation avec le phénomène étudié ; l'on doit disposer de leur distribution dans la population et elles doivent être faciles à observer (Grais, op. cit.).

Les variables de contrôle retenues ici pour construire notre échantillon d'étude sont le sexe, l'âge et la commune de résidence. En effet, Deyganto (2018), Aygama (2020), montrent que les contribuables de sexe féminin et

d'âge avancé développent une attitude plus favorable au paiement de l'impôt que les jeunes contribuables de sexe masculin. Jackson & Milliron (1986) révèlent que le lieu de résidence influence la conformité fiscale. La distribution des variables de contrôle dans la population d'étude est consignée dans le tableau ci-dessous.

Tableau I. Répartition des chefs de ménage d'Abidjan selon le sexe, l'âge et la commune de résidence

Variable sociodémographiques	Modalités	Effectif	Pourcentage
Sexe	Homme	981 642	77,80%
	Femme	280 109	22,20%
Âge	≤ 25 ans	42 900	3,40%
	26 – 35 ans	302 820	24,00%
	36 – 45 ans	432 780	34,30%
	46 – 55 ans	264 968	21,00%
	≥ 56 ans	218 283	17,30%
Commune de résidence	Abobo	280 206	22,21%
	Adjamé	72 671	5,76%
	Attécoubé	67 683	5,36%
	Cocody	169 438	13,43%
	Koumassi	97 794	7,75%
	Marcory	50 945	4,04%
	Plateau	1 584	0,13%
	Port-Bouët	146 903	11,64%
	Treichville	25 046	1,99%
	Yopougon	349 480	27,70%
Total		**1 261 751**	**100%**

Source : Recensement Général de la Population et de l'Habitat (INS, 2021)

Déterminons à présent la taille minimale de notre échantillon. Elle s'obtient par la formule suivante (Grais, 1988) :

$$n = \frac{z^2 \times p(1-p)}{e^2}$$

n = taille minimale de l'échantillon à interroger

z = taux de confiance correspondant à la valeur z dans la table de la loi normale réduite (z = 1,96 pour un niveau de confiance de 95%)

p = proportion estimée du phénomène étudié (p = 35%, d'après l'Enquête Afro-baromètre de 2021)

e = marge d'erreur tolérée (e = 5% dans ce travail)

n = 1,96² x 0,35 (1- 0,35) / 0,05²

n = 349,59 ≈ 350 chefs de ménage

L'échantillon d'étude devrait être constitué de 350 chefs de ménage au moins pour être représentatif. Le nombre de chefs de ménage à interroger en fonction de chaque modalité d'une variable de contrôle s'obtient en multipliant la taille de l'échantillon par le pourcentage correspondant à cette modalité de la variable. Par exemple, le quota des hommes à interroger s'obtient en multipliant 350 (participants) par le pourcentage des hommes chefs de ménage qui est de 77,80% ; ce qui donne 272 hommes. L'application de ce procédé à tous les variables de contrôle aboutit aux résultats consignés dans le tableau ci-dessous :

Tableau II. Caractéristiques démographiques de l'échantillon d'étude

Variables de contrôle	Modalités	Pourcentage	Quota
Sexe	Homme	77,80%	272
	Femme	22,20%	78
Âge	≤ 25 ans	3,40%	12
	26 – 35 ans	24,00%	84
	36 – 45 ans	34,30%	120
	46 – 55 ans	21,00%	74
	≥ 56 ans	17,30%	61
Commune de résidence	Abobo	22,21%	78
	Adjamé	5,76%	20
	Attécoubé	5,36%	19
	Cocody	13,43%	47
	Koumassi	7,75%	27
	Marcory	4,04%	14
	Plateau	0,13%	0
	Port-Bouët	11,64%	41
	Treichville	1,99%	7
	Yopougon	27,70%	97
Total		**100%**	**350**

En somme, 350 chefs de ménage résidant à Abidjan composent l'échantillon d'étude dont 272 hommes et 78 femmes. 12 (3,40%) des participants ont moins de 25 ans ; 278 (78,30%) sont âgés de 26 et 55 ans ; 61 (14,14%) ont 56 et plus. Respectivement 78 (22,21%), 20 (5,76%), 19 (5,36%), 47 (13,43%), 27 (7,75%), 14 (4,04%), 41 (11,64%), 7 (1,99%), 97 (27,70%) des participants habitent les communes d'Abobo, Adjamé, Attécoubé, Cocody, Koumassi, Marcory, Port-Bouët, Treichville, Yopougon.

1.3-   Instrument de recueil des données

L'instrument d'enquête est un questionnaire. Il est structuré en quatre parties. La première partie recueille des informations de nature sociodémographique sur les participants. Il s'agit de variables influençant l'attitude à l'égard des impôts, mais dont nous ne voulons pas ici en étudier les effets. Ces variables sont le sexe, l'âge, le niveau socioéconomique, le niveau d'études, la religion et la commune de résidence.

Le deuxième axe abrite une échelle de mesure de la perception de la justice sociale. Cet outil a été élaboré par Ekanza (2022) et est adapté à la population abidjanaise. Il s'agit d'une échelle nominale composée de 11 items admettant chacun 2 modalités de réponses : « d'accord » ; « pas d'accord ». Elle est unidimensionnelle, possède une variance expliquée élevée (85,98 %) de même qu'une forte cohérence interne (KR-20 = 0,75).

Le troisième axe héberge l'échelle de perception de la sanction encourue. Celle-ci est empruntée à Palil (2010). Il s'agit d'une échelle de type Likert en cinq points. Les scores sur cette échelle varient de 23 à 115 points. Le score 23 caractérise le niveau le plus élevé de sous-estimation de la sanction encourue pour fraude ou évasion fiscale, alors la note 115 décrit le plus haut degré de surestimation de la sanction encourue pour fraude ou évasion fiscale.

Le dernier axe est occupé par l'échelle de conformité fiscale empruntée à Kirchler & Wahl (2010). Il s'agit d'une échelle de type Likert en quatre points composée de 20 items. Cette échelle est structurée en 5 facteurs. Elle possède une cohérence interne élevée (α = 0,81) de même qu'une variance expliquée appréciable de 52,89 %. Le premier facteur de cette échelle traite de l'engagement pour le paiement de l'impôt (α = 0,88). Le deuxième facteur se rapporte à l'adhésion au paiement de l'impôt (α = 0,78). Le troisième facteur mesure la résistance au paiement de l'impôt (α = 0,81). Le quatrième facteur réfère au désengagement vis-à-vis de paiement de l'impôt (α = 0,49) et le dernier facteur évalue le décèlement des défaillances du système fiscal (α = 0,69).

Les participants sont rencontrés individuellement en fin de semaine à leur domicile. Ils ont tous donné leur consentement éclairé pour participer volontairement à l'étude sous anonymat et assurés de la confidentialité de leurs réponses.

2.   Resultats

Le test statistique du t de Student convient à la comparaison de moyennes ou de scores. Il est ici appliqué pour comparer les niveaux moyens d'attitude à l'égard du paiement de l'impôt des chefs de ménage d'Abidjan en fonction, d'une part, de la perception de la sanction encourue et, d'autre part, de la perception de la justice sociale. Cela correspond à deux niveaux de résultats qu'il convient de présenter.

2.1- Perception de la sanction encourue pour fraude ou évasion fiscale et attitude à l'égard du paiement de l'impôt

La comparaison des scores moyens d'attitude à l'égard du paiement de l'impôt des chefs de ménage sous-estimant la sanction encourue pour fraude ou évasion fiscale et de ceux surestimant cette sanction permet de mettre en évidence l'influence de la sanction encourue sur la conformité fiscale. Le graphique suivant permet de visualiser ses niveaux moyens de conformité fiscale.
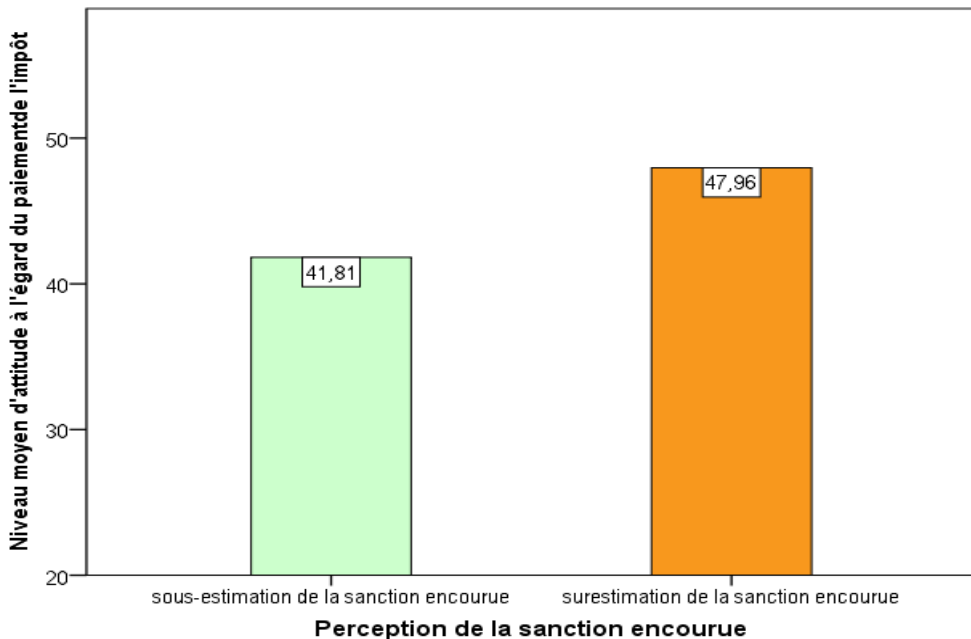
Figure 1. Niveau d'attitude à l'égard du paiement de l'impôt selon la perception de la sanction encourue pour fraude fiscale

L'examen de ce graphique (figure 1 ci-dessus) semble indiquer que le niveau moyen d'attitude à l'égard du paiement de l'impôt des chefs de ménage qui sous-estiment la sanction encourue pour fraude ou évasion fiscale ($m_1 = 41,81$) est moins élevé que celui de leurs homologues qui surestiment cette sanction ($m_2 = 47,96$). Toutefois, cette apparente différence entre ces moyennes est-elle significative ? Le test du t de Student permet de répondre de façon rigoureuse à cette question. L'application de ce test est consignée dans le tableau ci-dessous.

Tableau III. Comparaison des scores moyens d'attitude envers le paiement de l'impôt en fonction de la perception de la sanction encourue

Perception de la sanction encourue pour fraude ou évasion fiscale	Effectif	Moyenne	Ecart-type	Valeur du t	Sig.
G1 : Chefs de ménage sous-estimant la sanction encourue	$n_1 = 156$	$m_1 = 41,81$	$\delta_1 = 10,00$	$t = -5,797$	$p \leq 0,01$
G2 : Chefs de ménage surestimation la sanction encourue	$n_2 = 194$	$m_2 = 47,96$	$\delta_2 = 9,76$		

Source : Traitement des données d'enquête au moyen du logiciel SPSS 21.0

Ce tableau indique que le niveau moyen d'attitude à l'égard du paiement de l'impôt des chefs de ménage qui minimisent la sanction encourue pour fraude et évasion fiscale ($m_3 = 41,81$) est significativement moins élevé que celui de leurs pairs qui surestiment cette sanction ($m_4 = 47,96$). Cela est attesté par la valeur t = -5,797 significative au seuil de probabilité .01. Ce résultat confirme notre première hypothèse de travail selon laquelle les chefs de ménage d'Abidjan qui sous-estiment la sanction encourue pour fraude et évasion fiscale développent une attitude moins favorable au paiement de l'impôt que leurs homologues qui surestiment cette sanction.

Ce résultat peut s'expliquer à partir de la théorie de la dissuasion économique. Selon ce modèle théorique, les individus qui refusent de payer l'impôt jugent qu'il est plus avantageux de ne pas s'acquitter de leur charge fiscale plutôt que de le faire. En effet, les chefs de ménage sous-estimant la sanction encourue pour fraude et évasion fiscale sont persuadés qu'il est peu probable qu'ils soient interpellés par l'administration fiscale pour avoir violé la loi. Même si d'aventure cela arrivait, ces chefs de ménage croient qu'ils auraient toujours la possibilité de négocier à la baisse l'amende à payer ou éventuellement corrompre certains agents fiscaux véreux pour atténuer les sanctions réglementaires prévues par la loi. En un mot, il leur parait plus bénéfique de se soustraire du paiement de l'impôt pour deux raisons essentielles. D'une part, il est peu probable qu'ils soient appréhendés s'ils se livrent à de l'évasion ou à de la fraude fiscale. D'autre part, même si par extraordinaire ils sont pris par le fisc, leur sanction serait toujours plus faible que celle prévue par la loi, car ils pourraient soudoyer certains agents fiscaux corrompus ou négocier à la baisse leur amende.

En revanche, les chefs de ménage surestimant la sanction encourue pour fraude ou évasion fiscale considèrent que la probabilité qu'ils soient appréhendés et aussi la sévérité de la sanction qui leur serait infligée s'ils s'adonnent à de l'évasion ou à de la fraude fiscale sont élevés. Pour cette seconde catégorie de chefs de ménage, il parait plus raisonnable de s'acquitter

de sa charge fiscale plutôt que de ne pas le faire pour deux raisons principales. D'une part, ces chefs de ménage sont quasiment convaincus qu'ils seront interpellés par l'administration fiscale dès qu'ils commettront la moindre entorse à la loi fiscale et, d'autre part, si cela venait à se produire leur peine serait démesurément sévère. Leurs croyances les dissuadent donc totalement de tenter de contourner ou de violer la loi fiscale.

2.2- Perception de la justice sociale et attitude à l'égard du paiement de l'impôt

La comparaison des scores moyens d'attitude à l'égard du paiement de l'impôt des chefs de ménage percevant une injustice sociale et de ceux percevant une justice sociale permet de mettre en évidence l'influence de la perception de la justice sociale sur la conformité fiscale.

Le graphique ci-dessous permet de visualiser ses niveaux moyens d'attitude envers le paiement de l'impôt.

Figure 2. Perception de la justice sociale et niveau d'attitude à l'égard du paiement de l'impôt

A l'analyse de ce graphique, le niveau moyen d'attitude envers le paiement de l'impôt des chefs de ménage percevant une injustice sociale (m_1 = 39,20) parait visiblement moins élevé que celui de leurs homologues percevant une justice sociale (m_2 = 53,83). Toutefois, cette apparente différence entre ces moyennes est-elle significative ? Le test du t de Student peut apporter une réponse rigoureuse à cette question. Le tableau ci-dessous résume l'application de ce test.

Tableau IV. Comparaison des scores moyens d'attitude envers le paiement de l'impôt
en fonction de la perception de la justice sociale

Perception de la justice sociale	Effectif	Moyenne	Ecart-type	Valeur du t	Sig.
G3 : Chefs de ménage percevant une injustice sociale	$n_3 = 202$	$m_3 = 39,20$	$\delta_3 = 7,47$	$t = -18,229$	$p \leq 0,01$
G4 : Chefs de ménage percevant une justice sociale	$n_4 = 144$	$m_4 = 53,83$	$\delta_4 = 7,27$		

Source : Traitement des données d'enquête au moyen du logiciel SPSS 21.0

Ce tableau indique que le niveau moyen d'attitude à l'égard du paiement de l'impôt des chefs de ménage qui perçoivent une injustice sociale ($m_3 = 39,20$) est significativement inférieur à celui de leurs homologues qui perçoivent une justice sociale ($m_4 = 53,83$). Cela est attesté par la valeur t = - 18,229 significative au seuil de probabilité .01. Ce résultat confirme notre seconde hypothèse de travail d'après laquelle les chefs de ménage qui perçoivent une injustice sociale développent une attitude moins favorable à l'égard du paiement de l'impôt que leurs pairs qui perçoivent une justice sociale.

Selon la théorie de l'échange fiscal, les contribuables considèrent l'impôt comme étant la contrepartie des services publics dont ils bénéficient de la part de l'Etat. Or, certains chefs de ménage perçoivent une injustice sociale. Ils estiment notamment que tous les Ivoiriens ne sont pas traités de la même manière devant la loi, ne bénéficient pas des mêmes chances de réussite, ni d'un niveau de vie décent. Ils ont aussi le sentiment que les services publics (l'hôpital public, l'école publique, l'administration publique, le système judiciaire) qui devraient être améliorés grâce au paiement de l'impôt se dégradent d'année en année. De surcroit, ces services leur sont de plus en plus inaccessibles en raison de leurs coûts perçus comme étant élevés. Dans ces circonstances, le paiement de l'impôt leur parait non profitable, voire inutile. On comprend alors pourquoi les chefs de ménage percevant une injustice sociale sont plus réfractaires au paiement de l'impôt, car ils ont le sentiment d'être abusés par les gouvernants.

En revanche, les chefs de ménage percevant une justice sociale ont tendance à considérer que les Ivoiriens sont traités de la même manière devant la loi, bénéficient des mêmes chances de réussite de même que de conditions de vie convenables. Ils ont aussi le sentiment que l'impôt qu'ils paient sert à l'amélioration des services publics (l'hôpital public, l'école publique, l'administration publique, le système judiciaire). Il leur parait alors bénéfique de continuer à s'acquitter de leurs obligations fiscales, ce qui explique leur adhésion plus prononcée à la conformité fiscale.

3.   Discussion

La présente étude a examiné l'influence de la perception de la sanction encourue pour fraude ou évasion fiscale et de la perception de la justice fiscale sur l'attitude envers le paiement de l'impôt à partir d'un échantillon représentatif des chefs de ménage d'Abidjan. Elle est parvenue à deux résultats essentiels : (1) les chefs de ménage qui sous-estiment la sanction dont ils écoperont s'ils violent la législation fiscale développent une attitude moins favorable au paiement de l'impôt que leurs homologues qui surestiment cette sanction ; (2) les chefs de ménage percevant une injustice sociale en Côte d'Ivoire développent une attitude moins favorable au paiement de l'impôt que leurs homologues percevant une justice sociale.

Le premier résultat rapporté dans ce travail est conforté par les conclusion d'autres travaux, entre autres, ceux de Jayawardane & Low (2016), Aygama (2020), Mwalingo (2020). En effet, dans le Sud de l'Ethiopie, Aygama (op. cit.) établit que plus les contribuables sont soumis à un taux d'imposition élevé, à des audits rares, et à des pénalités faibles ou inexistantes, plus ils développent une attitude défavorable au paiement de l'impôt. De même, à Colombo la capitale du Sri Lanka, Jayawardane & Low (op. cit.) mettent en évidence que l'insuffisance des audits fiscaux, la faible probabilité de détection de contrevenants à la législation fiscale, le faible recours de l'administration fiscale aux sanctions réduisent la conformité fiscale chez les contribuables. Dans le même ordre d'idées, Mwalingo (op. cit.) révèle, pour sa part, que les contribuables sont d'autant plus prompts à s'acquitter volontairement de leurs obligations fiscales qu'ils perçoivent la probabilité d'être contrôlés par l'administration fiscale comme étant élevée.

Le second résultat rapporté par la présente étude indique que la perception d'une injustice sociale développe l'attitude négative vis-à-vis de la conformité fiscale chez les chefs de ménage d'Abidjan. En revanche, la perception d'une justice sociale favorise une attitude d'adhésion au paiement de l'impôt chez ces chefs de ménage. Ce résultat est conforté par les conclusions de l'enquête Afro-baromètre (2021). Il s'agit, comme la nôtre, d'une étude attitudinale sur l'incivisme fiscal ayant porté sur un échantillon représentatif de 34 pays d'Afrique subsaharienne incluant la Côte d'Ivoire. Elle révèle que les Ivoiriens qui perçoivent une amélioration des services publics de base sont significativement moins susceptibles de développer l'intention de ne pas s'acquitter de leur charge fiscale. Ce constat est le même pour l'ensemble des 34 pays d'Afrique subsaharienne composant l'échantillon d'étude. En outre, pour l'ensemble des pays, les individus qui ont confiance en leurs dirigeants de même que ceux qui perçoivent le régime fiscal comme étant légitime ont moins tendance à nourrir l'intention de ne pas payer l'impôt. En résumé, cette étude tend à montrer que les individus sont d'autant plus

favorables au paiement de l'impôt qu'ils perçoivent une justice sociale dans leur pays.

Le fait que la perception d'une injustice sociale ait pour effet de freiner l'adhésion individuelle au paiement de l'impôt (établit dans la présente recherche) est aussi rapporté par des d'autres études. Il s'agit, entre autres, des travaux de Adepoju & Ajayi (2019), Sebele-Mpofu (2020), Jayawardane & Low (2016). En effet, au Nigéria, Adepoju & Ajayi (op. cit.) observent que les dépenses publiques non-transparentes, les services et infrastructures publics (routes, hôpitaux, écoles, système d'approvisionnement en eau potable, système d'assainissement) de mauvaise qualité, le niveau élevé de corruption, l'injustice du système fiscal, les taux élevés d'imposition réduisent sensiblement la volonté des possesseurs de propriétés résidentielles de payer l'impôt foncier. De même, au Zimbabwe, Sebele-Mpofu (op. cit.) établit que l'opacité dans les dépenses publiques effectuées par le gouvernement, en particulier le nombre réduit et la mauvaise qualité des infrastructures et services publics développent chez les contribuables une attitude négative envers le paiement de l'impôt. Cela conduit au bout du compte les contribuables à ne pas s'acquitter de leurs obligations fiscales. À Colombo, la capitale du Sri Lanka, Jayawardane & Low (op. cit.) montrent que l'attitude non-transparente du gouvernement en matière de dépenses publiques, le taux d'imposition élevé, de même que le fait d'être confronté à un système fiscal injuste et complexe réduisent sensiblement la conformité fiscale chez les contribuables.

La présente étude n'a examiné que l'effet isolé de la perception de la sanction encourue pour fraude et évasion fiscale et celle de la justice sociale sur l'attitude à l'égard du paiement de l'impôt. Aussi, la plupart de travaux vont dans le sens de ceux ici rapportés. Toutefois, la méta-analyse de Alm & Malezieux (2021) révèle que les audits et les sanctions interagissent pour agir sur le comportement fiscal. Ainsi, chez les contribuables ordinaires, c'est-à-dire apriori non-fraudeurs, la capacité de l'amende à améliorer la conformité fiscale est d'autant plus forte que la probabilité d'être audité est élevée et inversement. Cependant, chez les fraudeurs fiscaux, plus la probabilité d'être audité est élevée, plus forte est la capacité de l'amende à réduire la conformité fiscale individuelle.

En somme les conclusions de ces travaux corroborent celles de la présente étude en confirmant que les contribuables sont généralement d'autant plus réfractaires au paiement de l'impôt qu'ils sous-estiment la sanction encourue pour fraude ou évasion fiscale et perçoivent une injustice sociale au sein de leur nation.

Conclusion

La présente étude a montré que la minimisation de la sanction encourue pour fraude ou évasion fiscale et la perception d'une injustice sociale sont des facteurs contribuant au développement d'une attitude défavorable au paiement de l'impôt chez les chefs de ménage d'Abidjan. Ce résultat pourrait aider à la mise en place de mesures correctives ainsi qu'à l'élaboration de programmes de sensibilisation plus efficaces pour accroitre la conformité fiscale volontaire. Pour ce faire, les autorités publiques devraient veiller à ce que tout contrevenant à la loi fiscale écope effectivement de la sanction prévue à cet effet. Ils devraient aussi agir de sorte que les contribuables ivoiriens perçoivent une plus grande justice sociale. L'augmentation du nombre d'infrastructures et de services publics, l'amélioration de l'accessibilité économique de ceux-ci ainsi qu'une meilleure redistribution des richesses nationales pourraient contribuer à améliorer la justice sociale. De telles actions aideraient à améliorer la perception de la justice sociale chez les ivoiriens et contribueraient par conséquent à accroitre la conformité fiscale nationale.

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Reflexiones de Becarios y Becarias a Partir de un Programa Posdoctoral en la Post-Pandemia

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Resumen
El escrito propone aportes para repensar críticamente metodologías interdisciplinarias en procesos de investigaciones postdoctorales. Se parte de la experiencia de becarios y becarias pertenecientes a Argentina, Costa de Marfil y Ecuador para comprender las características de participación a partir del Covid-19: espacio virtual-territorial, diálogo entre diversas disciplinas, cuestiones de género, organización y gestión de los tiempos. A partir de un enfoque cualitativo y un diseño narrativo, se recogen las experiencias y reflexiones de los becarios/as del programa post-doctoral, y a partir de unidades narrativas y categorías de análisis, se identifican posibilidades y limitaciones para los estudios post-doctorales, tales como el desarrollo de competencias investigativas a través de la presencialidad y la virtualidad.

Palabras clave: Reflexión, post-doctorado, conocimiento crítico, interdisciplinario, pandemia.

Reflections from Postdoctoral Fellows in the Post-Pandemic Era

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Abstract

This article aims to generate contributions to critically re-think interdisciplinary methodologies in postdoctoral research processes. Drawing on the experiences of fellows from Argentina, Ivory Coast, and Ecuador, this study aims to understand the characteristics of participation in postdoctoral research processes, particularly in the context of Covid-19. Employing a qualitative approach and a narrative design. This exploration provides insights into the nuances of postdoctoral studies, shedding light on both possibilities and limitations through the examination of narrative units and categories of analysis, as the hybrid development of research skills.

Keywords: Reflection, post-doctorate, critical thinking, interdisciplinary, pandemics

Introducción

En la última década se observan transformaciones importantes en los vínculos entre la educación superior y los usos de las tecnologías en sus programas académicos. No obstante, la irrupción de la COVID-19 provocó la aceleración de estos procesos. Consecuentemente, el acceso y uso de las herramientas digitales han reconfigurado las posibilidades y limitaciones de continuar los procesos educativos a nivel global: mientras que para algunas instituciones de educación significó la continuidad de los procesos educativos a través de sesiones formativas remotas o emergentes (Hodges et al., 2020).

Para otras, implicó la integración, con poca o nula preparación y reflexión sobre el uso de la tecnología en sus carreras y programas de posgrados. En el caso de las instituciones que tuvieron que incorporar las herramientas tecnológicas de manera improvisada se pueden distinguir dos estrategias: por un lado, el formar y/o empoderar a sus profesoras/es en el uso de recursos educativos abiertos y redes sociales mientras se continuaban los procesos; o detener las actividades hasta capacitar al claustro académico y continuar con las clases (Hodges et al., 2020). No obstante, también se identifican experiencias exitosas de integración de la tecnología durante el aislamiento: entornos virtuales de aprendizaje o sistemas de gestión de aprendizaje (*Learning Managment System*, LMS), ecosistemas digitales de aprendizaje, plataformas de videollamadas, entre otros, son algunas de las herramientas tecnológicas adoptadas por las instituciones educativas durante la pandemia (García-Peñalvo, 2018).

Para profundizar en estas experiencias exitosas, en el presente artículo se reflexiona sobre un programa posdoctoral europeo, a partir de la experiencia de becarios/as de diferentes continentes. Se identificaron experiencias académicas de los/as becarios/as en un programa post-doctoral post-pandemia y cuáles son sus posibilidades y limitaciones. Además, esta reflexión propone una mirada crítica desde las experiencias investigativas de Argentina, Costa de Marfil y Ecuador.   La pandemia fue un acontecimiento planetario que inició en el año 2020, y cuyas consecuencias continúan hasta el día de hoy. Desde este hecho histórico, se identifican diferentes formas de cómo se afrontó la pandemia desde una mirada de países del Sur Global, frente a propuesta del Norte Global.

En el caso de Argentina las clases presenciales permanecieron suspendidas en todos los niveles y de forma absoluta desde marzo de 2020 hasta julio de 2021 durante la pandemia, completando más de un año sin clases presenciales (GrupoLaProvincia.com, 2021; Chequeado, 2021). La presencia física de los/as alumnos/as fue reemplazada por clases virtuales en los lugares donde existía conectividad, la infraestructura y las posibilidades socio-familiares, elementos esenciales para instrumentar esta estrategia educativa. De esta manera, mientras sólo el 58% de los hogares en Argentina poseía conexión antes de la pandemia, un 23% más accedió a la conexión a internet durante la pandemia y el 19% restante no tuvo acceso. De estos últimos hogares sin acceso a internet, el 83% corresponde a los dos estratos socioeconómicos más vulnerables del país (UNICEF, 2021a). A los datos mencionados, debemos sumar que el 47% de los hogares donde hay niños, niñas y adolescentes no tiene computadoras, mientras que el 70% de los hogares más pobres no poseen dispositivos para realizar tareas escolares, ni mucho menos acceso a Internet domiciliaria (Infancia en Deuda, 2020). Esto

resquebraja el acceso a la educación pública y gratuita, considerando mayormente aquellas infancias sistemáticamente vulneradas.

No obstante, uno de los reclamos persistentes durante la pandemia en las escuelas argentinas –aun cuando el mismo no tuvo mayor éxito-, fue el de contar con algún tipo de presencialidad educativa (UNICEF, 2021b; Reliefweb, 2021). De igual forma, desde la sociedad civil, nacieron grupos de madres y padres organizadas/os que, a modo de defensores/as de derechos humanos de los niños, niñas y adolescentes, reclamaron por la vuelta de las clases presenciales. Así, estos grupos conformaron una Red de Familias de carácter Federal[1]. Estos movimientos sociales utilizaron tanto el activismo tradicional como el digital, para pedir por sus derechos (Infobae, 2021; Yerba Buena Online, 2021).

Durante el período post-pandémico, el derecho a la educación fue uno de los más afectados. Así, miles de niños, niñas y adolescentes quedaron "desconectados/as" de su rutina escolar, ya que debieron abandonar sus estudios por falta de conectividad o de acceso a computadoras u a otros aparatos electrónicos que les permitieran ser parte de las actividades escolares (Perfil, 2021). De esta manera, se evidenció la disparidad existente en referencia a disponibilidad, distribución geográfica y calidad de estas herramientas digitales, obstruyendo el derecho a la educación. El gobierno nacional argentino otorgó una licencia para trabajadoras y trabajadores del Sector Público Nacional que tuvieran a cargo niñas, niños y adolescentes que desarrollaran escolaridad virtual durante el ciclo lectivo 2021 (BO, 2021). La situación educativa comenzó a mejorar a partir de agosto de 2021, cuando la mayoría de las 24 jurisdicciones provinciales autorizaron el regreso parcial a clases presenciales.

Con referencia a la educación universitaria en la post-pandemia, las clases presenciales han reemplazado ya por completo a las virtuales, que solo quedan reservadas para actividades de post-grado. No obstante, la cantidad de estudiantes cursantes ha disminuido en relación con la pre-pandemia. Esto tal vez pueda explicarse por la crisis económica que impide que un porcentaje de estudiantes que no habitan en las ciudades donde se ubican las universidades, residan en ellas durante el año escolar, y también por la existencia de otras opciones de estudio universitario, mayormente virtuales.

En cuanto al contexto africano, cabe resaltar que cuando estalló la pandemia en el mundo, se suponía que iba a afectar de manera dura al conteniente. Al inicio de la pandemia se percibió que en la región habría una catástrofe inevitable. Es más, las primeras estimaciones de las consecuencias de la pandemia en el continente eran pesimistas, según una nota de síntesis de

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[1] Ver el siguiente sitio web: https://www.padresorganizados.ar/

la ONU (2020). No solo África pudo encarar la crisis, sino que también encontró soluciones[2].

En el caso de Costa de Marfil, cuando la pandemia inició, se suspendieron todas las clases presenciales por decisión gubernamental. El cierre de las clases ocurrió a unas 23 semanas antes de las 32 semanas que se necesitaba para completar el año escolar[3]. De esta manera, se organizaron las clases en modalidad a distancia bajo el impulso del Ministerio de Educación. Para la educación infantil, primaria, ESO y Bachillerato, se empezó a difundir programas educativos diarios por la radio y por la televisión hasta finalizar el curso escolar (Gil Alcazar et al., 2020)[4].

En las Universidades públicas, los/as estudiantes que solían utilizar redes sociales como Facebook o WhatsApp no encontraron dificultades para adaptarse a las clases en línea y lograr la continuidad de los aprendizajes. Más tarde, fue necesario el uso de otras plataformas de aprendizaje virtual como Moodle (Bogui y Coulibaly, 2021)[5]. En cuanto a las universidades privadas, varias instituciones habían optado por la modalidad híbrida antes de la crisis sanitaria; es decir, parte de las clases se desarrollaban en línea y otras en modalidad presencial. La tecnología más usada durante la pandemia fue la plataforma de Google para las investigaciones y el LMS de Moodle para las clases.

En la Escuela Normal Superior, que es la escuela de formación para docentes de la enseñanza secundaria, las clases del primer semestre habían finalizado cuando la pandemia inició. En virtud de la decisión del Ministerio de la Enseñanza Superior, órgano regente de las universidades en Costa de Marfil, la Escuela Normal Superior también tuvo que adoptar la virtualidad como una estrategia para la continuidad de las clases (Ministère de l'Education Nationale, de l'Enseignement Technique et de la Formation Professionnelle,

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[2] Varias plataformas fueron puestas en puestas en marcha en distintos países africanos, para el aprendizaje desde casa: *E-jang*, para la formación profesional y técnica*; Apprendre à la maison* (aprender desde casa) o *Ecoles fermées, cahiers ouverts* (escuelas cerradas, cuadernos abiertos). Eso fue a iniciativa tanto privada como pública (desde los distintos ministerios o las instituciones). https://unesdoc.unesco.org/ark:/48223/pf0000374160_fre,

[3] https://www.ilo.org/dyn/natlex/docs/ELECTRONIC/110489/137442/F275011089/CIV-110489.pdf

[4] Fue puesto en marcha el Plan de Respuesta del Sector Educación- Formación contra el covid-19 o le Plan de Réponse du Secteur Éducation-Formation contre le COVID-19 (PRSE-COVID).

[5] En un estudio realizado sobre las clases a distancia de la Universidad de Cocody (primera universidad pública de Costa de Marfil), se pone de relieve la teoría de las contingencias según la cual se debe tener en cuenta varios factores y circunstancias para garantizar el buen funcionamiento de la organización de la enseñanza a distancia. Cf. *Téléphonie mobile et enseignement à distance à l'université Félix Houphouët Boigny Abidjan Côte d'Ivoire*, escrito por BOGUI y COULIBALY, en https://www.ensg.eu/IMG/pdf/geomatice2021_bogui_coulibaly_17.pdf

2020). Por lo tanto, fue necesario un tiempo de capacitación de los/as docentes y de los discentes a la nueva modalidad virtual. Mientras que la capacitación de los docentes duró entre tres a cuatro semanas, los estudiantes se capacitaron durante dos meses con algunos altibajos, reanudándose las clases presenciales en el segundo semestre del año 2020. Varias de las actividades académicas como clases, exámenes, inspecciones, trabajos de fin de grado, entre otros, se desarrollaron en la aplicación de TEAMS.

Por otro lado, la educación ecuatoriana experimentó una situación similar a la educación argentina y marfileña. Varias universidades trasladaron su oferta académica en modalidad presencial a una educación virtual (e-learning). No obstante, este proceso de transformación no garantizó una educación virtual de calidad en la que se prima los diseños instruccionales de las aulas virtuales por parte de un/a profesor/a autor/a del acompañamiento de una acción tutorial, sino que se asemejaba más a una educación remota (Hodges et al., 2020). De hecho, la virtualización de la docencia giraba en torno a clases virtuales a través de herramientas de videollamada, lo que se asimila más a un modelo educativo híbrido (Ramos-Pla et al., 2022; Pardo y Cobo, 2020) o a una educación remota (Bordoloi et al., 2021; Balladares-Burgos, 2020).

Sin embargo, en un proceso de transformación digital las universidades también incrementaron su presencia a través de portales web y las redes sociales (Carius, 2020); experiencias de educación abierta como la oferta de MOOC – *massive online open course* (Del Moral y Villalustre, 2015), seminarios virtuales *(webinars)* y clases abiertas *(openclass o masterclass)* son propuestas de educación abierta que vincula a la universidad con la sociedad. En este escenario, se deben reconocer los problemas de conectividad y de falta de infraestructura tecnológica en los actores de la comunidad universitaria. Previo a la pandemia, hay estudios que advierten de la brecha digital como un problema para los procesos educativos en la educación superior (Soomro et al., 2020; Vidal y Pinargote, 2019). La brecha digital se manifestó entre los/as estudiantes y docentes dependiendo de su situación geográfica, lo que limitó la participación activa tanto de la enseñanza como el aprendizaje (Shackleton y Mann, 2021).

La pandemia invitó a repensar la educación no solamente en ámbitos formales y presenciales, sino también desde ámbitos informales y no-formales para la educación, en los que el aprendizaje puede residir fuera de las propias instituciones educativas. Tal es el caso del aprendizaje cotidiano a través del uso de las tecnologías como las conexiones en la información a través de redes y TIC, la educación virtual, la educación a distancia, educación móvil, educación híbrida, educación ubicua, entre otras (Balladares-Burgos, 2021b). Estos nuevos escenarios permiten comprender los nuevos ambientes virtuales en el que el profesorado y los estudiantes se encuentran e interactúan.

Por último, se pueden apreciar características comunes en los casos analizados de Argentina, Costa de Marfil y Ecuador. En primer lugar, la pandemia provocó ausencias físicas en la educación en todos sus niveles. La presencialidad fue reemplazada por la virtualidad educativa. En segundo lugar, este reemplazo reflejó ciertos problemas estructurales de las economías "no desarrolladas": quienes tuvieron la posibilidad de contar con acceso a internet de cierta calidad y los medios físicos como computadora, *tablet* o *smartphone*, pudieron continuar con sus aprendizajes. Por el contrario, una parte numéricamente importante de la población se vio privada del derecho fundamental a la educación al no tener acceso a la tecnología o a la conectividad. En tercer lugar, esta inequidad de base continúa durante la pospandemia en la medida en que un porcentaje de niños y adolescentes abandonaron la escuela.

Parecería ser que en las experiencias de estos tres países se concretó eficientemente la delegación de responsabilidades que el estado, dentro de la lógica neo liberal, delega a niveles de gobierno inferiores o locales, llegando en realidad a depositarla en el mismo individuo quien debería gestionar su propia educación, minimizando el papel del Estado. Varios de los derechos básicos pasaron de ser garantizados por el estado a ser procurados por el individuo: quien tuvo recursos y herramientas estuvo mejor parado. Sin embargo, la peor parte la llevaron quienes no las tuvieron, que corresponden a los excluidos tecnológicos. Si bien la pandemia no fue un acto deliberado, el ejercicio practicado habría mostrado a los gobernantes de nuestros que sí es posible achicarse, ausentarse, o perderse, y delegar al más pequeño las responsabilidades que les corresponde asumir como mandatarios de un estado.

Metodología

Esta indagación se llevó a cabo desde un enfoque cualitativo y con un diseño narrativo de tópico, donde se recogen experiencias y reflexiones en torno a una temática (Hernández et al. 2014). De hecho, el diseño narrativo de tópico no solo se enfoca en una temática, sino también en un suceso o fenómeno.

Partimos del supuesto de que todo proceso social humano se desarrolla inscrito en relaciones sociales, que pueden ser de diverso carácter: simétricas, asimétricas, conflictivas, no conflictivas, etcétera. En este sentido, el diálogo y la reflexión surgidos entre los integrantes del grupo provenientes de diferentes disciplinas y de varios países, que corresponde en y desde nuestra propia experiencia como becarias y becarios pertenecientes a países del Sur Global, cuya muestra lo constituyeron investigadores e investigadoras provenientes de Argentina, Ecuador y Costa de Marfil, que confluyeron en un programa postdoctoral con fondos europeos. En este sentido, la metodología y los diálogos permanentes entre los/as cinco investigadores que escribimos

este escrito se configuran como la forma más pertinente para comprender las relaciones entre las categorías problemáticas centrales de este estudio: programa post-doctoral, interdisciplinariedad, desarrollo profesional, pensamiento crítico, metodología y pandemia.

Para lograr estas reflexiones en torno a un programa post-doctoral, se realizaron los siguientes pasos en función del diseño narrativo de tópico:

1) Revisión, relevamiento y sistematización de los encuentros de formación o reflexión que llevamos a cabo de forma virtual a lo largo del programa de formación post-doctoral entre noviembre de 2021 y junio de 2022. De la misma forma sistematizamos las características de quienes cursan el programa ESI, que van desde una visita de investigación presencial, clases en línea, acompañamiento tutorizado de las investigaciones individuales, participación en grupos de investigación interdisciplinaria, la posibilidad de publicar resultados de investigación, entre otros. Para ello, se utilizó la técnica de la observación participante y se utilizaron diferentes instrumentos de registro.

2) Se conformó un grupo de trabajo en idioma español -dentro de 5 grupos en los cuales se hablaba inglés- que se reunió sistemáticamente durante 6 encuentros que acompañaron todo el proceso del programa postdoctoral. Las reuniones se realizaron en entornos virtuales de Google Meet, siguiendo la estructura base de una clase: los temas y bibliografía que las/os participantes aportarían a cada encuentro acordado previamente; durante las sesiones se analizó las contribuciones individuales. Al terminar cada sesión se resumían y consolidaban los avances. Entre sesión y sesión, el trabajo se centró en búsqueda de información y reflexión individual. De esta forma fuimos reconstruyendo las dificultades, tensiones y acuerdos que nos planteaba el programa.

3) Como parte del programa, se realizó una estancia de investigación durante 15 días en la Universidad de La Laguna donde pudimos conocernos y compartir nuestras experiencias y sentires, ejercicio que nos permitió esbozar este trabajo. Además, las técnicas utilizadas en la investigación fueron las observaciones participantes y no participantes en los distintos espacios del programa[6] las cuales hemos analizado cualitativamente con el propósito de observar las diversas prácticas y estrategias que desarrollan en los programas pensados en Europa para la formación postdoctoral en diálogo crítico[7] con las expectativas de los y las participantes del grupo de becarias/os de países del sur en relación a sus propias formaciones.

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[6] El programa ESI contempló más de 6 encuentros virtuales, y la estadía presencial en España que originó un seminario internacional sobre personas en movilidad humana y pandemia.

[7] En un diálogo crítico se presentaron las diferentes argumentaciones y se respetaron las contraargumentaciones para lograr consensos y conclusiones.

4) Partiendo del interés investigativo sobre las experiencias de los participantes en la realización de un programa posdoctoral en un entorno pandémico, con las limitaciones que esto implicó (dificultad de acceso a bibliografía, diferencia horaria entre distintos países, etc.) se adoptó un diseño narrativo de tópico, en el que los investigadores e las investigadoras utilizaron su propio conocimiento y experiencia para seleccionar los temas o tópicos relevantes para el estudio (Hernández Sampieri et al., 2014); en este caso, el tópico se constituyó la reflexión en torno a la experiencia en un programa post-doctoral durante la pandemia.

5) Debido a la imposibilidad de realizar un trabajo con etapas secuenciales (primeros acercamientos, trabajo de campo, análisis en gabinete), las mismas sesiones virtuales constituyeron el referente empírico del trabajo y el único lugar de observación participante y reflexión posible y válido, pesar de las limitaciones que conlleva la propia virtualidad. Los datos se generaron a partir de la información aportada de forma oral (mayormente espontánea) o escrita (mayormente motivada), por cada participante. La información se obtuvo con dos cuestionarios: el primero (denominado como Auto cuestionario) buscó exteriorizar las visiones que cada participante tuvo sobre los elementos del problema que motivó este estudio; el segundo cuestionario (denominado Factor de sintonización) que indagó las tensiones vividas y las tensiones que caracterizan la formación y desempeño profesional de los participantes.

Hallazgos a partir de la experiencia

A partir de estas primeras reflexiones, se pueden generar las siguientes categorías en función de las posibilidades y dificultades al momento de participar en un programa post-doctoral europeo. Se presentan las principales fortalezas mencionadas por los/as investigadores/as post-doctorales.

Tabla 1. Fortalezas del programa de formación post-doctoral

Número	Unidades narrativas	Categoría de análisis
1	[…] logré mejorar mis competencias investigativas a través del programa post-doctoral	Formación de investigadores/as
2	[…] hemos quedado vinculados para actividades futuras.	Posibilidad de continuar con equipos de investigación interdisciplinario
3	[…] se estableció una entre investigadores/as de áreas y países diversos […]	Vínculos de amistad entre integrantes de sociedades científicas provenientes de territorios con características culturales propias
4	[…] puedo mencionar la socialización académica […]	Relacionar integrantes de sociedades científicas

| 5 | […] la visita presencial como estancia de investigación fortaleció las relaciones entre investigadores/as de todo el mundo […] | Estancia presencial del post-doctorado. |
| 6 | […] Posibilidad de formación post-doctoral antes que buscar plazas de investigadores/as post-doctorales para el reconocimiento por parte de una universidad | Programa de formación post-doctoral flexible. |

Elaboración propia

A partir de las categorías de análisis, se puede destacar que el programa de formación post-doctoral ha mejorado las competencias investigativas de sus participantes, y que facilita el acceso a quienes desean formarse post-doctoralmente. A su vez, la competencia colaborativa o interdisciplinaria permite que un investigador post-doctoral amplíe su portafolio de contactos con otros investigadores para actividades conjuntas en un futuro. A su vez, la parte relacional entre investigadores de diferentes partes del mundo se fortalece no solamente en la virtualidad, sino también en la presencialidad.

A continuación, se presentan las principales limitaciones mencionadas por los/las investigadores/as a partir de su experiencia de participación en el programa post-doctoral.

Tabla 2. Limitaciones del programa de formación post-doctoral

Número	Unidades narrativas	Categorías de análisis
1	[…] problemas de enfocar la investigación a la realidad de mi país […]	Dificultades de participar en un programa post-doctoral europeo.
2	[…] acceso a la conexión de internet […]	Inconveniente con la conectividad dependiendo del lugar de conexión.
3	[…] me dificultó […] seguir las charlas online […]	Seguimiento incompleto o inadecuado de las charlas, como resultado del inconveniente técnico y del idioma.
4	[…] conciliación de la vida privada con las charlas	Hacer compatibles dos responsabilidades de diferente naturaleza
5	[…] tareas de los/as hijos/as y sus actividades. A veces las charlas coincidían con las horas de la siesta	Inconveniente por rol social y/o cultural
6	[…] dificultad es […] la forma de financiar el viaje […]	Inconveniente de tipo económico

Elaboración propia

Entre las limitaciones que aparecen en las unidades narrativas a partir de las categorías de análisis, se puede mencionar la dificultad que tuvieron algunos investigadores al momento de enfoque su respectiva investigación a

la realizada del país. Asimismo, se reconocen las dificultades de acceso a internet tanto en la conectividad como en las charlas o conferencias virtuales que el programa proporcionada a sus becarias y becarios.

A partir de las categorías de análisis recogidas en los diferentes diálogos entre el grupo de investigadores/as participantes en el programa postdoctoral, se plantean algunas reflexiones, a manera de discusión, sobre su experiencia y valoración de participar en un programa de formación de post-doctores/as:

a) Des-centramiento del poder del conocimiento: desde la perspectiva de los/as investigadores/as del curso, la metodología de trabajo seguía centrada en estructuras del poder del conocimiento con una visión euro-céntrica sin lograr una ruptura epistémica desde las miradas de países del sur. Queda latente el cómo generar investigaciones y conocimientos más contextualizados a las realidades propias del Sur global como África y América, esto implica un punto de vista epistemológico, es decir, ubicarnos desde un lugar, que vendría a ser una postura filosófica, y defender dicha postura, que vendría a ser una postura política.

b) La herencia naturalista y positivista, como formas coloniales de construcción de conocimiento, se siguen sintiendo. Los modelos, tomados de autores/as europeos/as y norteamericanos/as, porque tienen más aceptación para una publicación en revistas que constan en bases de datos reconocidas por académicos/as, pueden ser algunas de las herramientas sí, pero los materiales para la construcción del conocimiento desde nuestras realidades, cuestionan nuestro actuar sentado atrás de un escritorio: la reflexión, en tres niveles, del investigador/a, de las personas que nos colaboran en los trabajos, y la reflexión entre ambas, en el trabajo en campo.

c) Virtualización del programa post-doctoral: las posibilidades de participar en clases virtuales a través de videoconferencias permitieron el participar en el programa desde cada país de residencia. Las diferentes herramientas virtuales de comunicación –como el caso de Google Meet- posibilitaron el conformar grupos interdisciplinarios de investigación. De alguna u otra manera, a partir de la pandemia surgen experiencias de investigaciones internacionales. Si bien la implementación de entornos virtuales estuvo en función de las circunstancias específicas existentes en cada país, región o localidad, el obligado, por necesario, uso de diferentes herramientas virtuales de comunicación, hizo que pasemos de considerar como una probabilidad el trabajo interdisciplinario de investigación, a plantearnos como una alternativa válida que elimina el problema de la presencialidad y facilita espacios de diálogos dialécticos.

d) Problemas de conectividad: a pesar de que la mayoría del tiempo del programa post-doctoral se lo realizó de forma virtual, no obstante, no faltaron los problemas de conectividad. A su vez, las diferencias horarias de encuentros virtuales se constituían en un impedimento porque la hora de una clase virtual coincida con horas de trabajo o de actividades familiares.

e) Encuentro internacional con otros/as investigadores/as: el programa post-doctoral con ESI brinda las posibilidades de encontrarse con investigadores/as de diferentes países en el mundo, de diversas culturas. La posibilidad de generar una comunidad de formación post-doctoral es un factor clave para un programa post-doctoral, logrando conexiones con investigadores/as de diferentes universidades y organizaciones en el mundo.

Conclusion

La pandemia generó una virtualización de la educación y la investigación, integrando herramientas tecnológicas en ambos procesos. La virtualización de la docencia implica la temporalización de la enseñanza, el desarrollo de competencias digitales docentes (Balladares-Burgos, 2021a), la formación universitaria en tecnología educativa (Valverde-Berrocoso, 2015) y una mejor gestión de la información y comunicación a través de entornos virtuales. A su vez, se logra reincorporar algunas metodologías innovadoras que permiten responder al proceso educativo virtualizado (Ramos-Pla et al., 2022). En cuanto al aprendizaje de los estudiantes, hay investigaciones que afirman que se percibió una mayor autonomía y empoderamiento en el aprendizaje de las y los estudiantes (Herrera-Pavo, 2021; Cobo & Moravec, 2011).

Tradicionalmente para la comunidad científica el doctor o Ph.D. que realizaba un post-doctorado tenía como propósito el aplicar u obtener una plaza o trabajo como investigador/a en una Universidad o centro de investigación (Horta, 2009). El post-doctorado puede ser considerado como un proceso de entrenamiento para adquirir nuevas habilidades y conocimientos en la investigación científica, por otro lado, puede ser un período donde los/as investigadores/as trabajan de forma autónoma proyectos de mayor interés que se desprenden de la formación doctoral. Se puede concebir el post-doctorado de la siguiente manera:

> …el postdoctorado es un puente entre una profundización en el entrenamiento en investigación y el desarrollo académico autónomo con el fin de posicionarse, ya sea en una universidad u otra institución, o incluso en una empresa.
> (Caqueo-Urízar, 2016, 1).

El trabajo de un/a estudiante post-doctoral es mal remunerado y muchas veces implica varias horas de trabajo en docencia o en gestión, cuando lo principal es que el estudiante post-doctoral desarrolle competencias investigativas (Melin y Janson, 2006). En cuanto a los programas de post-doctorados, hay estudios que manifiestan que quien realiza estudios post-doctorales, no solamente mejora su producción científica, sino que tiene la posibilidad de integrarse con comunidades internacionales de investigadores. Dentro de las características de los programas post-doctorales, se menciona que este debe ser un tiempo productivo para el quien investiga, es decir, que sea un momento para mejorar sus capacidades investigativas; por otro lado, lo interdisciplinario es un elemento clave en un post-doctorado porque brinda la posibilidad de comunicarse e interactuar con otras disciplinas. Por último, un post-doctorado te abre la posibilidad para realizar una movilidad internacional (Melin y Janson, 2006). Además, el aspirante a un post-doctorado cuenta con la supervisión de un/a mentor/a, con quien comparte intereses en común y que le permita mejorar su producción científica (Caqueo-Urízar, 2016).

En los países del sur la falta de reconocimiento económico en el ámbito laboral, de estudios de posgrado y en mayor medida, de post-doctorado, conspira ciertamente en contra de una capacitación continua de los y las profesionales, tanto en el ámbito público como en el privado. Esta situación provoca que en general, los estudios post-doctorales sean una *rara avis*, descansando más en el interés personal de superación, que en consecuencias laborales o profesionales prácticas, que sumen al progreso material de quien se profesionaliza. En una sociedad de pretensiones capitalistas, la apatía de los decisores respecto de la capacitación de quienes se profesionalizan, reduce las ambiciones de progreso individual y junto a ellas como su consecuencia- de progreso en las carreras individuales de las personas que se dedican a la investigación en nuestros países.

Desde una mirada del Sur Global, se puede afirmar que los estudios postdoctorales inter y multidisciplinarios producen pensamientos críticos desde cualquiera de las ciencias implicadas a partir de una interdisciplinariedad. Por otra parte, las relaciones humanas constituyen un factor relevante aun en épocas de absoluta conectividad virtual. Asimismo, pareciera que la incorporación de un espacio de visitas académicas presenciales genera sinergias en los procesos investigativos y entre las/os investigadoras/es más sólidas que con la mera virtualidad. Finalmente, se valora y se destaca la posibilidad de programas de formación post-doctoral a fines que generen espacios y promuevas tiempos para el desarrollo de competencias para investigaciones interdisciplinarias e internacionales.

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The Compliance Model as an Instigation for Post-Financial Crisis Efficiency in Corporations

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Abstract

This paper examines how the compliance model improves corporate governance and efficiency post-financial crisis. This paper focuses on the goals of the compliance model, the strategies for its integration into corporate governance structures, as well as the results and conclusions. The compliance model prioritizes legal and regulatory compliance, ethical standards, and best practices in corporate governance. This methodology helps organizations prevent wrongdoing, enhance transparency, and build stakeholder confidence. Mixed methods study evaluates the compliance model. First, it reviews the theoretical and practical consequences of the compliance model. Next, a quantitative analysis compares pre- and post-compliance model performance metrics in a sample of firms. Finally, qualitative interviews with key stakeholders assess the impact of the model. This study shows that the compliance approach boosts post-financial crisis corporate efficiency. The approach improves corporate governance, malfeasance, and efficiency. Organizations with a culture of compliance, honesty, and responsibility gain stakeholder trust. The results show that the compliance model can help companies revive their corporate governance practices following financial crises. This methodology reduces risks, ensures legal and ethical compliance, and boosts efficiency and effectiveness. This study emphasizes the role of the compliance model in post-financial crisis corporate efficiency. It highlights the favorable effects of the model on corporate governance and organizational success. The report adds to the corporate governance literature and offers practical advice for companies trying to improve their governance in a

complicated business environment.

Introduction

The 2008 financial crisis highlighted corporate governance problems and the need for complete corporate sector reform. Regulators, policymakers, and business executives are exploring ways to improve efficiency and restore stakeholder confidence. The efficiency of compliance model has increased since the post-financial crisis period.

This article examines the complex role of the compliance model in revitalizing corporate governance following the financial crisis. The study examines the 2008 financial crisis, the compliance model, the role of compliance in efficiency, compliance-driven innovations in post-financial crisis corporations, challenges and limitations of the compliance model, strategies for effective compliance model implementation, and emerging technologies affecting compliance and efficiency. The 2008 financial crisis, which affected the global economy, resulted from issues in risk management, ethics, and corporate governance. It showed the necessity for strong governance systems that prioritize accountability, transparency, and risk reduction. Understanding the context and effects of the crisis is essential to understanding the need for corporate governance reform.

The compliance model represents proactive corporate governance. It promotes legal, ethical, and industry best practices. Companies use the compliance model to avoid wrongdoing, increase transparency, and rebuild stakeholder confidence. This approach includes strong internal control mechanisms, risk management frameworks, and a culture of compliance, integrity, and responsibility. The compliance model improves corporate efficiency. Compliance-driven initiatives streamline operations, improve decision-making, and decrease non-compliance risks. It may save costs, improve operations, and boost stakeholder confidence.

After the financial crisis, organizations have used compliance-driven innovations to handle evolving regulations and new challenges. Utilizing technology and data analytics to enhance monitoring and reporting, establishing effective whistleblower programs, and implementing ethical frameworks for decision-making are key advancements in this regard. Nevertheless, the compliance model has drawbacks. A successful compliance structure involves financial investment, experienced staff, and managerial commitment. Maintaining conformity across countries and keeping up with continuously changing legislation is difficult. Corporate compliance model implementation techniques must address these issues. This includes building

a strong compliance culture, providing thorough training and awareness programs, incorporating compliance into strategic decision-making, and encouraging collaboration between compliance and other essential areas. Emerging technologies will shape compliance and efficiency. AI, ML, and blockchain provide automation, monitoring, and data integrity. These innovations might transform compliance and corporate governance.

This study seeks to shed light on the role of the compliance model in post-financial crisis corporate efficiency. It synthesizes current research, includes empirical information, and provides practical advice for firms trying to manage corporate governance in the modern economic context.

1.   Understanding the Compliance Model
1.1.   Definition and Principles of the Compliance Model

The compliance model emphasizes legal and regulatory compliance, ethics, and best practices in corporate governance. This paper discusses the concept and principles of the compliance model, highlighting its importance in post-financial crisis corporate governance.

Organizations take proactive steps to comply with legal and ethical requirements under the compliance model. It requires strong internal control mechanisms, risk management frameworks, openness, responsibility, and a culture of compliance and integrity. The compliance model requires robust internal control mechanisms and these systems identify, analyze, and manage hazards throughout company activities (Galietti & Francesco, 2015).

As earlier mentioned, strong internal controls empower organizations to prevent misbehavior, fraud, and regulatory breaches. This concept emphasizes the necessity of building a framework that promotes adherence to rules. The compliance model requires comprehensive risk management mechanisms. Risk management helps detect hazards to an organization's operations, finances, and reputation. The compliance model integrates risk management with governance, allowing firms to identify and minimize risks using methodical procedures (Nietsch & Michael, 2019).

Generally, there are two unique ideas known as compliance and coherence, each with a different emphasis. On the one hand, in the context of law, economics, and ethics, compliance is the act of conforming to external rules, laws, or norms. It involves ensuring that actions align with established rules and specifications, often enforced by external agencies. On the other hand, cohesiveness centers on the internal unity and connections within a system, whether it is a group, organization, or a piece of material. It emphasizes cooperation and teamwork and focuses on how well-connected a system's parts can be. Cohesion encourages internal harmony and productive collaboration within a system, while compliance ensures adherence to external norms.

Furthermore, compliance requires transparency and responsibility. Organizations should operate, disclose, and report transparently. Stakeholders including shareholders, employees, and regulators need clear and accurate information. Accountability ensures that members of an organization are accountable for their actions and decisions. The compliance model fosters integrity and compliance in organizations. This principle recognizes the need to foster ethics and values across organizations (Galietti & Francesco, 2015). In addition, organizations promote a culture of compliance to encourage staff to act ethically, report infractions, and serve stakeholders. The compliance model emphasizes legal compliance, risk management, transparency, accountability, and ethical behavior in governance frameworks. These concepts can help post-financial crisis organizations improve corporate governance, stakeholder trust, and efficiency. The compliance model encourages ethical business practices, risk mitigation, and resilient companies.

1.2.   Evolution of the Compliance Model in the Aftermath of the Financial Crisis

The 2008 financial crisis highlighted corporate governance issues and the need for a more thorough compliance strategy. After the financial crisis, the compliance model changed focus and techniques to handle corporate difficulties. The compliance approach started with legal and regulatory compliance, involving the creation of systems to ensure organizations adhered to the law. This rule-based approach minimized legal risks and fines but lacked a wider governance and risk management perspective. However, the financial crisis spurred compliance model re-evaluation and expansion. Stakeholders acknowledged that relying solely on legal compliance alone could not prevent wrongdoing, systemic hazards, and ethical failings. Consequently, the compliance model evolved into a more comprehensive framework. Post-financial crisis compliance models link compliance practices with risk management frameworks. Companies identified and addressed legal, strategic, operational, financial, and reputational risks (Arellano-Gault & David, 2023).

This shift recognizes the interdependence of risk and compliance and promotes proactive and comprehensive risk management in organizations. The evolving compliance approach also emphasizes ethics and integrity. Organizations have increasingly incorporated ethical issues in their compliance programs, recognizing that relying solely on legal compliance does not guarantee responsible behavior. Ethical leadership, values-based cultures, and responsible business behavior are included in decision-making frameworks (Grote, Rainer, 2021). The compliance model has evolved and incorporates both principles and results. Rather than solely fulfilling legislative obligations, organizations should focus on building a culture of

integrity, preventing wrongdoing, and retaining stakeholder confidence. This shift fosters a more flexible and adaptive approach to compliance, customizing practices to organizational circumstances while adhering to fundamental principles. Technology has also shaped the compliance model. Automation, data analytics, and AI have improved monitoring and reporting, compliance detection, and risk identification. Technology has improved compliance efficiency, accuracy, and risk management (Arellano-Gault & David, 2023).

After the financial crisis, the compliance model evolved towards a more comprehensive, risk-based, and ethical approach to corporate governance. It addresses legal, strategic, operational, and reputational risks. Organizations, in response to the financial crisis, may proactively manage risks, promote integrity, and improve governance by adopting this compliance methodology.

1.3. Relationship Between Compliance and Corporate Governance

Compliance and corporate governance are essential to responsible business practices. This analysis shows how compliance and corporate governance are interdependent and support one another. Compliance and corporate governance form a foundation for ethical company behavior (Nietsch & Michael, 2019). Compliance entails adhering to legal and regulatory obligations, ethical standards, and best practices, while corporate governance refers to the direction and regulation of organizations. It serves as the foundation for corporate governance, ensuring that organizations comply with laws, ethics, and stakeholder commitments. This, in turn, prevents misbehavior, fraud, and regulatory infractions while fostering business openness, responsibility, and trust (Grote & Rainer, 2021). Compliance and corporate governance extend beyond legality. Effective corporate governance goes beyond legal compliance, which is essential. It requires risk management, ethics, stakeholder participation, and sustainable decision-making mechanisms. Compliance enforces corporate governance. It also helps organizations evaluate risks, maintain openness and accountability, and follow ethical practices. In a nutshell, compliance can improve governance effectiveness.

As mentioned, compliance promotes ethical corporate practices and safeguards stakeholders' interests. It promotes ethical decision-making, integrity, and responsibility in the organization (Arellano-Gault & David, 2023). Additionally, compliance-driven companies care about shareholders, workers, consumers, and the community. Corporate governance oversees compliance including the board of directors, senior management, and internal control departments, which have clear roles, duties, and responsibilities in effective governance arrangements. It promotes conformity from the top down. Compliance and corporate governance extend beyond alignment.

Compliance promotes openness, accountability, and responsible decision-making, thus strengthening corporate governance (Nietsch & Michael, 2019). Effective corporate governance promotes compliance, ethical ideals, and organization-wide compliance. Compliance and corporate governance are complementary, indicating that corporate governance requires compliance to ensure legal and ethical behavior. Corporate governance also creates an environment of honesty and accountability. However, organizations may foster responsible corporate behavior, stakeholder trust, and sustained success by recognizing and developing this link.

2.   The Role of Compliance in Enhancing Efficiency
2.1   Compliance as a Tool for Risk Management
Compliance helps organizations to analyze, minimize, and monitor risks. The content of "compliance" as a risk management tool promotes responsible and sustainable company practices. Compliance helps detect and analyze organizational hazards and organizations can detect compliance risks by assuring legal and regulatory compliance. Companies can assess data privacy, financial reporting, workplace safety, environmental sustainability, and ethical conduct concerns through complete compliance programs. Compliance helps organizations in minimizing and managing once identified. Compliance-driven risk management develops and implements effective control systems and regulations to prevent and detect hazards. Effective internal controls decrease compliance failures, financial losses, reputational harm, and legal consequences (Tarantino & Anthony, 2008).

Compliance fosters a risk-aware and responsible workplace by motivating all employees to acquire and adhere to best practices in risk management. Training and awareness programs assist staff in identifying and reporting issues, thereby improving the company's risk management. Compliance monitors and assesses potential hazards. Compliance assessments and audits play a crucial role in assisting organizations by ensuring that their risk management practices remain effective, up-to-date, and in compliance with evolving regulations. Organizations may discover new risks, evaluate current controls, and make appropriate improvements by regularly monitoring compliance (Galietti & Francesco, 2015).

Compliance-driven risk management also includes ethics, with a growing emphasis on ethical considerations in risk management practices. Compliance programs promote integrity and responsible behavior by guiding decision-making (Tarantino & Anthony, 2008). Ethical risk management addresses bribery, corruption, conflicts of interest, fraud, and other unethical practices that might affect the organization and its stakeholders. Nonetheless why is compliance beneficial? It helps companies discover, analyze, minimize, and monitor risks. In a nutshell, compliance is a risk management

tool that helps companies negotiate business difficulties and safeguard stakeholders.

2.2   Impact of Compliance on Corporate Culture and Ethics

Generally, compliance programs foster organizational integrity. Organizations demonstrate that ethical behavior is required and non-compliance is unacceptable by developing effective compliance procedures as programs assist workers in grasping the company's values and expectations by setting ethical standards (Marcus & Alfred, 2021). It also promotes corporate openness and responsibility and requires clear and accurate reporting, which promotes "transparency" and "honesty". Employees are more inclined to behave ethically and responsibly when they think compliance requirements are being checked (Galietti & Francesco, 2015). Compliance programs help workers make ethical decisions by educating and raising awareness which happens by integrating ethical concerns into compliance practices and empowering workers to act ethically and make ethical judgments. Compliance programs also build stakeholder confidence. Stakeholders, including shareholders, workers, consumers, and regulators, gain trust in an organization's ethics and responsibility when they exhibit compliance. Trust improves the organization's reputation and builds stakeholder connections, which increases loyalty and support.

Compliance-driven organizations are more ethical and less dishonest. A strong compliance program deters unethical behavior and promotes reporting. Organizations promote a culture of compliance to encourage ethical behavior and enable employees to report misbehavior. Compliance programs enable ethical self-assessment and continual development. Self-evaluation and improvement strengthen the organization's ethical behavior and assure compliance with legal and regulatory standards. Compliance greatly affects business culture and ethics (Marcus & Alfred, 2021). Integrating ethics into compliance practices helps workers make moral decisions and decrease wrongdoing. "Compliance and Ethics" contribute to sustained success and stakeholder confidence by ingraining responsible and ethical behavior in the organization.

2.3.   Streamlining Operations through Compliance Processes and Protocols

Organizations seeking efficiency and productivity must streamline operations as a result of compliance practices and regulations (Marcus & Alfred, 2021). Logically, compliance processes generally analyze operations to find redundancies, inefficiencies, and waste. This process is needed since streamlining and standardizing procedures reduces waste, duplication, and

inefficiency. However, workflow optimization allows staff to focus on value-added tasks, increasing productivity and output.

Adherence to compliance standards serves as a risk mitigation strategy. By proactively addressing compliance-related risks, organizations can prevent costly interruptions, legal complications, reputational damage, and other potential issues. Risk mitigation simplifies operations by minimizing interruptions and guarantees company continuity and stability. Generally, compliance processes enable automated systems and technology, thereby streamlining and simplifying operations. Nowadays, technology automates compliance monitoring, reporting, and documentation. This not only saves time but also enhances accuracy, providing real-time updates on compliance status. Digital solutions simplify data administration, document control, reporting, and improving compliance.

Standardizing and centralizing compliance processes reduces duplication and streamlines operations. Compliance rules reduce disparities and improve collaboration between departments and units. Organizations may streamline compliance, reduce silos, and assure consistency by centralizing compliance processes (Marcus & Alfred, 2021). This centralization facilitates communication, decision-making, reporting, and enhances operational efficiency. Compliance practices streamline operations beyond regulatory compliance and drive constant progress. This enables operational evaluation, improvement, and regular audits reveal optimization and innovation potential. Accordingly, compliance input may enhance procedures, adopt best practices, and boost operational efficiency.

Finally, compliance practices and regulations streamline business operations. Optimizing operations, eliminating risks, and using technology may boost efficiency, productivity, and performance. Compliance-driven streamlining promotes innovation and legal compliance. Therefore, this kind of organization is better positioned to succeed in the dynamic and competitive business environment (Grote & Rainer, 2021).

3. Compliance-Driven Innovations in Post-Financial Crisis Corporations
3.1. Efficiency Gains Achieved through Compliance-driven Innovations

In today's competitive corporate environment, efficiency advantages are essential. This analysis examines how compliance-driven innovations improve organizational efficiency, including their tactics, techniques, and results. Compliance-driven innovations are practices, procedures, and technology that improve compliance and operational efficiency. These technologies expedite compliance procedures, cut costs, and help organizations fulfill regulatory obligations.

As mentioned, technology integration is crucial to compliance-driven innovations. Compliance management systems, automation technologies, and data analytics are helping organizations improve compliance operations. These technologies speed up data gathering, processing, reporting, and improve accuracy (Arellano-Gault & David, 2023). Cloud-based compliance tools centralize data, improve communication, and automate reporting. They also eliminate manual data input, administrative burden, and data accessibility. Why do we need this process? To say it briefly, data analytics helps organizations understand compliance patterns, identify risks, and optimize operations. Compliance-driven innovations improve risk assessment and management, which are helping companies identify and minimize compliance concerns. Predictive modeling, machine learning, and artificial intelligence provide real-time risk assessment, mitigation prioritization, and resource allocation (Marcus & Alfred, 2021).

Nowadays, compliance-driven innovations are changing training and awareness programs. Companies are using e-learning platforms, gamification, and immersive training to teach compliance. Interactive training approaches boost information retention and help employees apply compliance ideas to their regular jobs. This eliminates compliance violations, boosts employee productivity, and encourages compliance. Compliance-driven developments like digital signature technology and electronic document management systems increase efficiency. These tools expedite document management, approval, and compliance audits. Eliminating handwritten paperwork reduces administrative costs, processing time, document security, and accessibility. Compliance-driven innovations also use process optimization methods like "Lean Six Sigma" to decrease waste and inefficiencies in compliance-related activities. Organizations may improve efficiency by charting and analyzing procedures. It has to be mentioned that compliance-driven innovations have real-world effects. These advances increase compliance, productivity, risk management, and cost. Compliance-driven innovations help organizations allocate resources, focus on value-added operations, and adapt to regulatory changes (Arellano-Gault & David, 2023).

In conclusion, compliance-driven innovations help organizations improve efficiency. Technology, updated risk assessment methods, redesigned training programs, and process optimization are the issues that can improve compliance and operational efficiency. These solutions help companies navigate regulatory settings, cut costs, eliminate risks, and promote compliance. Compliance-driven innovations can help companies continue efficiency improvements and stay competitive.

3.2. Benefits of Transparency and Accountability in Compliance-driven Organizations

As mentioned in the last paragraphs, in compliance-driven organizations, transparency and accountability are essential to ethical behavior, trust, and success. According to this research assessment, transparency and accountability in compliance-driven organizations improve stakeholder relationships, organizational culture, and performance. Transparency helps stakeholders trust compliance-driven organizations. Organizations exhibit integrity and ethics by providing compliance practices, policies, and outcomes. Transparency creates trust and loyalty among stakeholders, including workers, consumers, investors, and regulators.

However, what kind of place do transparency and accountability in compliance-driven organizations have? To say it briefly, transparency boosts organizational repute. Companies that openly report their compliance efforts and results demonstrate their commitment to ethics, risk management, and regulation. Transparency and accountability attract stakeholders that respect ethical business practices, boosting consumer trust, investor confidence, and public perception. Generally, compliance-driven organizations need accountability (Arellano-Gault & David, 2023). Hence, they foster accountability and repercussions for non-compliance by holding people and teams accountable for compliance-related tasks and results. Clear roles and duties and strong monitoring and enforcement ensure that staff understands and own compliance initiatives.

Transparency and accountability strengthen organizational culture by building trust and minimizing wrongdoing. Transparency in decision-making and information dissemination fosters inclusiveness, fairness, and openness in compliance-driven organizations. Valued, engaged, and knowledgeable employees have increased work satisfaction and morale. This culture boosts staff retention and productivity and attracts top personnel who value ethics. Compliance-driven organizations improve through transparency and accountability. Organizations can benefit by sharing compliance outcomes. Its failures can improve practices, rules, and prevention. Continuous improvement helps the company adapt to new requirements, manage risks, and enhance operations. Transparency and accountability also help organizations handle regulatory investigations (Arellano-Gault & David, 2023). Compliance-driven organizations show regulatory compliance by keeping correct records, documenting compliance actions, and giving information. This simplifies regulatory audits, investigations, and inquiries.

To sum up, compliance-driven organizations gain from openness and accountability. Transparency builds trust, reputation, and ethical stakeholders. Accountability increases ethics, eliminates misbehavior, and improves organizational culture. Transparency and accountability strengthen

stakeholder relationships, regulatory compliance, and long-term organizational performance. Compliance-driven, transparent, and accountable organizations can negotiate regulatory hurdles, create stakeholder connections, and succeed in today's business climate.

4.   Challenges and Limitations of the Compliance Model
4.1   Balancing Compliance Requirements with Operational Flexibility

Regulated companies must balance compliance with operational freedom. In this chapter, this scholarly study discusses solutions, advantages, and considerations for balancing compliance requirements with operational flexibility. Organizations must follow legal, regulatory, and industry standards to reduce risks and safeguard stakeholders. However, strict compliance can impede operational flexibility, reducing organizations' capacity to react to changing market conditions, and capture new possibilities.

Risk-based compliance balances operational flexibility and compliance. Risk assessments identify compliance hazards and rank them by effect. Organizations may better allocate resources to high-risk areas, providing flexibility in lower-risk areas while ensuring compliance in important areas. Technology and automation may expedite compliance procedures, lowering an administrative load and allowing operational flexibility. Compliance management solutions automate data collection, reporting, and monitoring. Automation boosts efficiency and frees resources for strategic initiatives and operational agility. It also creates a compliant culture that encourages flexibility and creativity. Organizations may encourage staff to identify compliance issues and provide flexible solutions by making compliance a shared responsibility and a driver of continuous development. This method lets you try new things while meeting compliance goals. Organizations can also talk to regulators to clarify and find compliance flexibility. Open communication and industry forums help organizations understand regulators' expectations and design compliance standards that provide operational flexibility without compromising compliance goals. Compliance with operational flexibility has major benefits. Organizations that strike this balance can handle regulatory challenges while adapting to market changes. They may grab business opportunities, react to changing client requirements, optimize resource allocation, and improve competitiveness and sustainability.

Organizations innovate by balancing compliance with operational flexibility. Organizations may promote innovation and entrepreneurship by promoting innovative problem-solving and adaptability. Exploring new markets, products, and processes drives organizational development and distinction. However, the dangers and problems of balancing compliance and operational flexibility must be considered. Flexibility must not jeopardize

compliance program integrity or risk. Risk assessments and monitoring should identify operational flexibility-related compliance gaps and vulnerabilities. Organizations struggle to reconcile compliance and operational flexibility. A risk-based strategy, technology, a culture of compliance and innovation, and interaction with authorities may help organizations find a balance. Agility, innovation, and competitiveness help organizations traverse regulatory frameworks and capitalize on growth prospects. In dynamic, regulated contexts, organizations must strike a balance between compliance and operational flexibility.

4.2   Potential Conflicts Between Compliance and Innovation

Organizational success depends on compliance and creativity, yet these might clash. This chapter discusses how to balance compliance with creativity in organizations. On the other hand, Innovation encourages companies to try new things to stay ahead, provide value, and satisfy customers. Innovation challenges conventions, while conformity follows regulations. Risk aversion and risk-taking can clash with compliance and innovation. Compliance-driven organizations prioritize risk minimization and standardization, which can inhibit innovation. Innovative ideas may be stifled by compliance and regulatory concerns (Marcus & Alfred, 2021).

Another contradiction is between innovation's agility, speed and compliance's slowness. Compliance requires considerable documentation, reporting, and approval, which slows innovation. In fast-changing markets, complicated regulatory environments and clearances may slow innovation. Compliance frameworks may also conflict with new technology and business strategies. Innovation frequently involves new technology, markets, or disruptive goods and services. However, compliance standards may not have kept pace with these improvements, creating confusion and possible conflicts for organizations trying to innovate while complying (Arellano-Gault & David, 2023). Organizations may be proactive and smart to handle compliance-innovation conflicts. First, promote a culture of compliance and creativity. Promote the idea that compliance and innovation are complimentary to organizational success. In addition, creative thinking within compliance should be encouraged. Compliance and innovation stakeholders might join cross-functional teams or committees. This promotes open communication, collaboration, and ideation to meet compliance and innovation goals. Regular communication and collaboration between these teams can detect possible disputes early and generate effective solutions.

Second, emerging technology can also improve compliance and innovation. Advanced analytics, automation, and digital platforms may help organizations efficiently handle compliance needs, freeing up resources and time for innovation. Technology-driven solutions may give real-time visibility

into compliance performance, helping organizations make educated decisions and comply with regulations. To grasp compliance issues and the need for innovation, organizations should work with regulators. Collaboration and knowledge-sharing may create flexible compliance frameworks that meet regulatory goals. Relationships with regulators may streamline compliance and clarify innovative compliance standards.

Organizations may manage and balance compliance and innovation. Organizations may balance compliance with innovation by developing a culture that values both, collaborating cross-functionally, using technology, and interacting with regulators. Organizations that want to negotiate complicated regulatory frameworks, develop continuously, and stay competitive in changing markets must find compliance-innovation synergies.

4.3.   Regulatory Complexities and Compliance Overload

Regulated companies face regulatory complexity and compliance overburden. This scholarly review investigates the effects of regulatory complications and compliance overload on organizations and proposes solutions. Laws, rules, and industry standards are changing, creating complicated regulatory frameworks. Globalization, technology, and the need for better risk management and consumer protection cause this complexity. Organizations must comply with many regulatory obligations across jurisdictions, industries, and sectors. Over time, regulatory requirements pile up, causing compliance overload. Compliance activities include data collecting, reporting, policy creation and implementation, monitoring and auditing, and staff training. The size of these duties can strain resources and take time away from key corporate tasks.

Regulatory complexity and compliance overload have several effects. Firstly, organizations may struggle to comprehend and execute regulatory changes quickly. Compliance gaps or misinterpretations can lead to legal, reputational, and financial repercussions. In addition, stress can also reduce operational efficiency and agility. Its costs can impede innovation, growth, and strategic goals. Furthermore, its administrative requirements can delay, increase expenses, and diminish competitiveness for small and medium-sized firms with limited resources. Organizations can use numerous methods to manage regulatory complexity and compliance overload. Secondly, a good compliance management system simplifies and centralizes compliance. Automation, clear processes, and technology to improve efficiency and accuracy are examples. Organizations may improve compliance management and resource allocation by using a methodical approach such as they may handle compliance risk proactively. Usually, regular risk assessments identify and prioritize compliance concerns, concentrating on the highest impact areas. Organizations may allocate resources and build focused compliance strategies

by knowing their compliance obligations. Organizations can also handle regulatory difficulties by collaborating and sharing expertise with peers and regulators. Sharing best practices, attending industry events, and talking to regulators can help solve compliance issues. Collaboration may improve compliance frameworks, lowering an organizational load and fostering consistency. A top-down compliance culture should also be stressed. This entails encouraging ethics, accountability, and shared compliance within the organization. Training and awareness programs may educate staff on compliance standards, encourage honesty, and enable individuals to recognize and solve compliance concerns proactively.

Organizations struggle with regulatory complexity and compliance overload. They may overcome these obstacles by creating comprehensive compliance management systems, risk assessments, teamwork, and compliance culture. Proactive and systematic compliance may reduce risks, improve operational efficiency, and assure regulatory compliance while concentrating on essential company objectives.

5. Strategies for Effective Compliance Model Implementation
5.1 Integration of Compliance into Organizational Structure and Strategy

Governance and risk management need compliance integration with organizational structure and strategy. This scholarly study in this part, explores the benefits, problems, and solutions of seamless compliance integration in an organization.

Compliance has always been separated from fundamental corporate activities. However, recognizing compliance as an important component of the organizational structure and strategy is crucial for developing ethical behavior, risk minimization, and long-term sustainability (Arellano-Gault & David, 2023). Compliance integration improves strategy alignment. Organizations can proactively handle compliance obligations by integrating them into strategic planning and decision-making. Integration prevents compliance from becoming an afterthought and improves risk management.

Integrating compliance within the organizational structure fosters a compliance culture. When compliance is embedded in the organization, all workers understand their ethical and regulatory duties. This integration promotes shared accountability, decreasing compliance violations, and encouraging ethical behavior across the organization. Integrating compliance within the organizational structure helps compliance professionals communicate with other departments. Organizations may assure compliance by breaking down silos and encouraging cross-functional collaboration. This connection allows compliance specialists to advise operational teams on meeting compliance standards without compromising efficiency. Integrating

compliance within the organization is challenging. Clear roles, duties, and reporting lines for compliance specialists are a big issue. Compliance officers need power, independence, and access to key decision-makers in their reporting structures. This ensures compliance issues are addressed and compliance specialists influence organizational plans and practices (Galietti & Francesco, 2015).

There are several ways that can help organizations integrate compliance into their structure and strategy. First, organizations should create a thorough compliance program that matches their goals and risk appetite. This program should outline compliance professionals' duties and responsibilities and explain how to incorporate compliance into everyday operations and strategic decision-making. Organizations can also provide compliance training and awareness programs to staff. Organizations may embed compliance into their principles and culture by promoting it from the start. Organizations should also build methods for monitoring and assessing compliance integration initiatives (Galietti & Francesco, 2015). Risk assessments, internal audits, and continuous improvement efforts identify opportunities for improvement and assure compliance throughout the organization. For successful governance and risk management, organizations must integrate compliance into their structure and strategy. Organizations may integrate compliance into their operations by aligning compliance with strategic goals, developing a culture of compliance, fostering cross-functional cooperation, and investing in training and assessment. Integrating ethics, risk mitigation, and organizational performance improves long-term success and sustainability.

5.2   Training and Education Programs to Foster a Culture of Compliance

Organizations need training and education to promote compliance. This brief scientific study shows how such programs promote ethics, regulatory compliance, and compliance awareness. Employees learn compliance requirements through training and education. These programs teach employees about laws, rules, and industry standards and emphasize ethical behavior and the consequences of non-compliance (Bailey & Michael, 2020). Organizations may guarantee staff make educated decisions and act ethically by providing extensive training and education. These programs educate staff on compliance risks, the penalties of non-compliance, and how to resolve compliance issues. Training and education programs also foster an organization-wide compliance language. These programs help workers speak a single compliance language and connect their behavior with organizational values and regulatory needs by setting clear norms and expectations (Arellano-Gault & David, 2023). A good training program should address legal and

regulatory frameworks, corporate policies and processes, ethical decision-making, and compliance best practices. The program should address industry-specific demands and staff roles and responsibilities. Organizations can use numerous methods to improve training and education. Workshops, case studies, simulations, and e-learning modules are examples. Updates and refreshers can also reinforce compliance ideas and handle new compliance challenges. Organizations should also include compliance training in new hire on boarding and professional development. This keeps compliance a priority and keeps staff informed about changing compliance standards.

Finally, training and education programs promote compliance in organizations. These programs encourage ethical behavior, regulatory compliance, and compliance awareness by equipping employees with the information, skills, and awareness. Training and education help employees make educated judgments and follow the highest ethical standards.

5.3. Technology and Automation Solutions for Efficient Compliance Management

Technology and automation may improve corporate compliance management. This brief scientific overview, in this unit, discusses how technology streamlines compliance processes and improves efficiency. Automating repeated compliance duties reduces manual work and human error. Advanced analytics, artificial intelligence, and machine learning algorithms can improve data gathering, processing, reporting, and enabling real-time compliance monitoring and preemptive detection. Automation also standardizes compliance processes, ensuring organization-wide compliance. Centralized compliance management solutions improve workflows, document control, and reporting, lowering administrative overhead and enhancing operational efficiency (Harasimiuk & Dominika, 2021).

Technology also streamlines compliance documentation and evidence management. Cloud-based platforms and document management systems allow quick retrieval and audit trails for compliance-related data. Compliance management technology increases openness and accountability. Stakeholder insight into compliance procedures improves trust, internal controls, and reporting accuracy (Harasimiuk & Dominika, 2021). Real-time dashboards and analytics let organizations track compliance, see trends, and close gaps. Organizations should assess their needs and choose solutions that meet their compliance standards and strategic goals to use technology and automation for compliance management. Integrating, securing, and using technological solutions requires collaboration with IT and compliance teams. Organizations should also consider technology adoption issues and concerns. Data privacy and security, system upgrades and maintenance, and balancing automation with human oversight and judgment are all issues.

Technology and automation improve compliance management. These technologies enhance compliance workflows by automating operations, standardizing procedures, and increasing transparency. Strategically assessing needs, collaborating across departments, and adopting technological solutions that correspond with compliance goals ensures smooth integration and improves compliance management practices.

6.   Future Trends and Implications
6.1   Emerging Technologies Shaping the Future of Compliance and Efficiency

Technology is changing compliance and improving efficiency and effectiveness. In this chapter, we talk about how developing technology will change compliance management.

AI and machine learning can improve compliance processes. These tools automate data analysis, find trends, detect abnormalities, and help organizations identify and mitigate compliance concerns. AI-powered chatbots and virtual assistants help employees with real-time compliance guidance and support, thereby raising company compliance awareness (Harasimiuk & Dominika, 2021).

Robotic Process Automation (RPA): RPA automates repetitive, rule-based compliance processes, freeing up staff and enhancing productivity. RPA systems automate data input, report generation, regulatory filings, and eliminate manual work and human error. RPA solutions streamline compliance procedures, allowing organizations to focus on strategic compliance goals and higher-value tasks.

Blockchain Technology: Compliance applications benefit from its transparency, immutability, and security (Kerrigan & Charles, 2022). Blockchain can decentralize and tamper-proof compliance data including supply chain transactions, regulatory filings, and audit trails. This system enhances compliance reporting trust, traceability, and accuracy while easing data exchange and stakeholder cooperation. Predictive modeling and data visualization help organizations understand compliance risks and trends (Harasimiuk & Dominika, 2021). Organizations may anticipate compliance difficulties, predict risks, and optimize compliance strategies by analyzing enormous amounts of structured and unstructured data. Data-driven decision-making helps organizations manage resources, mitigate risk, and improve compliance.

*Cybersecurity and Cloud Computing***:** Cloud computing stores manage compliance data securely. Cloud-based solutions centralize compliance data and enable real-time collaboration. Cloud computing protects data and meets privacy standards with strong security and encryption.

Internet of Things (IoT) and Connected Devices: IoT devices create massive volumes of compliance data. IoT sensors and devices may track assets, monitor environmental conditions, and assure regulatory compliance. Real-time data gathering, remote monitoring, and proactive compliance management improve efficiency and reduce compliance risks (Arellano-Gault & David, 2023).

Hence, new technologies are transforming compliance management, delivering unparalleled efficiency, efficacy, and risk mitigation. AI, machine learning, RPA, blockchain, data analytics, cloud computing, and IoT help organizations automate activities, get insights, boost transparency, and expedite compliance (Kerrigan & Charles. 2022). Data privacy, security, and technology expert-compliance professional teamwork are necessary for successful deployment. These technologies can improve compliance and sustain performance in a dynamic regulatory framework.

6.2   The Role of Regulators in Promoting Compliance-Driven Efficiency

Organizational compliance-driven efficiency depends on regulators. This brief overview shows how regulators influence compliance and efficiency. Organizations must follow regulations set by regulators. Regulators assist organizations in comprehending compliance needs through thorough frameworks and recommendations on their behalf. Regulators ensure all organizations follow the same compliance rules to level the playing field. By regularly enforcing these norms, authorities make compliance a priority for competitive organizations (Bailey & Michael, 2020). This supports effective compliance management systems and fair competition. By advising companies on best practices, regulators boost compliance-driven efficiency, while regulators exchange knowledge on compliance, risk management, and emerging trends through publications, industry consultations, and partnerships. This guideline helps organizations streamline compliance procedures, implement industry-leading practices, and anticipate regulatory changes (Kerrigan & Charles, 2022).

Regulators also oversee compliance performance. Regulators check, audit, and examine organizations to find compliance issues and take remedial action. Non-compliance can lead to sanctions, reputational harm, or legal action. Therefore, this supervision supports compliance-driven efficiency (Harasimiuk & Dominika, 2021). Regulators promote industry stakeholder-compliance professional collaboration. Regulators may comprehend organizational difficulties and complexity through interacting with organizations, industry groups, and compliance professionals. This partnership helps regulators create practical and efficient compliance frameworks that address sector demands and mitigate risk. Technology and

innovation are helping regulators improve compliance efficiency. Data analytics, automation, and digital reporting systems improve regulatory operations and compliance management. This technology simplifies information interchange, eliminates administrative requirements, and allows regulators focus on risk assessment and oversight (Bailey & Michael, 2020).

In conclusion, regulators help organizations achieve compliance-driven efficiency by setting clear criteria, providing guidance, assessing compliance performance, and encouraging collaboration. In a fast-changing regulatory environment, regulators may increase efficiency and compliance by embracing technology and innovation.

6.3. Potential Long-Term Impacts on Corporate Governance and Business Practices

COVID-19 has affected corporate governance and commercial practices. This brief scientific assessment evaluates the pandemic's long-term effects on various regions and their organizations.

Resilience and Risk Management: The pandemic showed the necessity of resilient organizations that can handle unexpected disruptions. Risk management and contingency planning may become more important in corporate governance. To reduce future risks, organizations should strengthen risk assessment frameworks, diversify supply networks, and improve crisis response (Kerrigan & Charles, 2022).

Remote Work and Digital Transformation: The epidemic boosted remote work and digital technology. This change may affect business and corporate governance. Organizations may use flexible work arrangements and a larger talent pool using virtual communication and collaboration solutions to adapt to digital change (Grote & Rainer, 2021).

***ESG and Sustainability*:** The epidemic showed how corporations, society, and the environment are intertwined. As a result, corporate governance may prioritize ESG considerations. Investors, consumers, and regulators are prioritizing sustainability. ESG concerns, openness in ESG reporting, and sustainable business strategies may be needed by organizations.

***Stakeholder Engagement and Social Responsibility*:** The epidemic stressed stakeholder engagement and corporate social responsibility. Stakeholder engagement, employee support, and community well-being earned trust and goodwill. In the long term, corporate governance may prioritize stakeholder interests, resulting in more inclusive decision-making and a stronger focus on social responsibility (Bailey & Michael, 2020).

***Board Dynamics*:** The pandemic may also change corporate boards. By considering more talents, knowledge, and viewpoints, organizations may increase board diversity. Crisis management and digital transformation expertise may be sought by boards. The epidemic has also shown the

importance of board, management, and stakeholder communication and collaboration, which may influence future board structures and governance practices (Grote & Rainer, 2021).

Compliance and Regulations: The epidemic forced governments and regulators to take emergency steps and change legislation. This changing regulatory environment may affect business governance and compliance. Organizations may need to negotiate to change legislation, improve risk monitoring and compliance, and show resilience in crises (Harasimiuk & Dominika, 2021).

Finally, the COVID-19 pandemic may alter corporate governance and commercial practices. Resilience, remote work, ESG, stakeholder involvement, board dynamics, and the legal landscape may influence corporate governance. In a changing business climate, proactive organizations may succeed.

Conclusion

After the financial crisis, the compliance model revitalized corporate governance and increased efficiency. We examined the definition and principles of the compliance model, its evolution, its relationship to corporate governance, its impact on risk management, corporate culture, ethics, and streamlining operations, and its transformative potential in corporations. The compliance model has helped organizations traverse the complicated regulatory landscape and improve risk management post-financial crisis. Compliance-driven solutions simplify operations, increase transparency, and promote responsibility. The compliance model's emphasis on rules and regulations promotes ethics, integrity, and ethical company behavior, which is essential for long-term success.

This paper also discussed transparency and accountability, the need to balance compliance requirements with operational flexibility, the potential conflicts between compliance and innovation, regulatory complexities and compliance overload, and compliance integration into organizational structure and strategy. These factors demonstrate the complexity of compliance and the continual efforts needed to improve corporate governance. It is clear that companies who prioritize compliance and use it as a strategic driver may gain a competitive edge after the financial crisis. Compliance-driven efficiency improves risk management, operations, legal and reputational risks, and stakeholder confidence. Compliance may help organizations expand sustainably and face future difficulties.

In conclusion, compliance is essential for long-term organizational success. The compliance model guides governance, risk management, and compliance culture. However, compliance is a lifelong commitment. To achieve compliance-driven efficiency, organizations must adapt to changing

legislation, use new technology, engage in training and education, and work with regulators. Emerging technology, changing regulatory environments, and increasing cultural expectations will continue to influence the compliance model. Organizations must be proactive, nimble, and adaptable to maximize the compliance model and lead in corporate governance and efficiency. By doing so, organizations may recover and prosper after a financial crisis and contribute to a resilient and sustainable business ecosystem for all stakeholders.

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Factors Shapping the Adoption of Mobile Marketing in Rural Areas of Tanzania: The Case of South Region in Unguja

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Abstract

The explosive use of mobile phones facilitates the introduction of different mobile app services which become an essential part of daily life. This forces the business vendors to place individually targeted marketing messages through mobile phones to ensure easy access to the service since the mobile phone is in the hands of owner all the day long. Most of the studies in mobile marketing adoption focused on urban and university consumers. This study aims to investigate the perception of consumers in rural areas on their intention to adopt mobile phone applications such as mobile marketing. The TAM model extended with the UTAUT2 model to achieve the study objective. a cross-sectional survey conducted to collect data through self-administered questionnaires to 500 villages owning mobile phones, through a stratified sampling design in the South district of Unguja. SEM technique was employed to analyze the collected data. The analysis was aided by SPSS version 25. The results showed that perceived usefulness, perceived ease of use, and facilitating conditions were the significant determinants of behavioral intention to adopt mobile marketing to consumers of rural areas. Furthermore, the attitude partially mediates the relationship between consumers' perception and behavioral intention. The finding of this study is vital to business entities in the extension of mobile marketing coverage together with rural consumers to improve the way of life in the current mobile phone era. The Implications

and limitations of the research were discussed.

Introduction

The Communication revolution from landline to mobile phone technology led to changes in lifestyle, which initially was not based on technology. Nearly everyone is aware of the mobile phone nowadays and is highly adopted for social and business use. From a business perspective, the use of mobile phones has increased its popularity owing to marketers' recognition of incremental value to the customers and shareholders. Globally, the number of mobile phone subscribers has continued to increase at an alarming rate as reported to reach 8.6 billion in 2022 (Statista, 2023). The situation has prompted the innovation of mobile marketing communication channels. Mobile marketing provides consumers with the ability to receive or search brands and product information from any place and at any time based on his/her convenience.

Unlike traditional marketing, the innovative mobile marketing strategy facilitates the interaction of consumers and sellers and also the personalization of advertising messages to the targeted consumers, the service contrary (Hall, 2018). The personalization of mobile marketing communication is based on customers' search history and buying nature hence vendors ensure the frequent pop-up of emails, SMS, and MMS. The Statista Research Group (2023) reported the growing trend of mobile marketing since its inception in 2022 accounting for 327 billion US $ globally and expected to reach US $ 400 billion by 2024. In some African countries such as Nigeria, South Africa, and Kenya (Nyarusanda and Mollel, 2020) consumers also realize the ubiquitous of purchasing products and services through mobile phones, as mobile marketing reached 5.7 billion US $ in 2017 and was expected to increase as the number of internet users across Africa would continue to increase (Africa in Focus Report, 2019). However, in most East African countries such as Uganda, Tanzania, Burundi, and Rwanda the consumers' adoption of mobile marketing are still low (Engotoit et al., 2016; Chille et al., 2021; Nyatsambo, 2021; Uwamariya, 2021). Therefore, there is a need to understand mobile marketing consumer perceptions and intentions to adopt such technology. Mobile marketing is regarded to be more beneficial to its users for its convenience, competitive prices, wider selection, rich product information (Nabot, Omar, and Almousa, 2019), and also reach to consumers' places. Consequently, the continued advancement of mobile phone technology with Internet service facilitates mobile shopping, mobile money, and mobile banking which leads to changes in people's lifestyle through the use of mobile phones. In Tanzania, it is reported there is an increase in mobile money

adoption after cash (Kombe et al., 2020; Abdinoor and Ulingeta, 2017). A report by Finscope (July 2023) also showed that 72 percent of the population used mobile money in Tanzania. Studies in mobile marketing adoption in Tanzania focused on major cities in Tanzania, Dar es Salaam (Chille, et al., 2021; Abraham, 2018; Ndyali, 2014) Iringa (Sabokwigina, Mpogole and Malima, 2013) Morogogo (Msavange, 2012) Zanzibar (Maisara, 2022; Omar, Hamad and Yussuf, 2022). There is a gap of knowledge on the research question of which factors affect rural consumers' intention to adopt mobile marketing as this group has been poorly represented in the previous studies conducted in the region, as most of the studies were conducted in the main cities of Tanzania.

In studying consumer adoption of technology, many studies used the Technology Acceptance Theory (TAM) and Diffusion of Innovation theory (DOI). TAM is the most popular model used in addressing consumer adoption of different technologies (Choudrie, et al, 2018). However, the TAM model has been criticized for its weaknesses of inadequacy in explaining consumer behavior. This study opts to extend the TAM model with the UTAUT 2 theory, by adding a facilitating condition construct based on the fact that, in rural areas, most services are not adequately obtained compared to urban areas and major cities of the country. The study adds to the body of knowledge related to the information technology research field, with high adoption of mobile phone technology, by explaining factors affecting consumers' perception of adopting mobile marketing. This study aims to investigate motivation factors affecting the perceptions of rural consumers in adopting mobile marketing technology. The study will provide in-depth insight into identifying the factors affecting rural consumers' decision to adopt mobile marketing technology through their mobile phones by employing TAM and UTAUT 2 as basic models. The proposed model in this study will help to understand the factors affecting rural consumers' perception of mobile marketing and provide futuristic research ideas and expansions in this scope.

The study begins firstly by reviewing the available literature related to consumer intention toward adoption of mobile marketing and secondly will explain the TAM theory to see the influential factors enforced to extend the TAM model with new factors from UTAUT 2 theory. The remaining part is structured as follows: Begin with a review of the literature on investigating consumer perceptions together with an understanding of their attitude toward mobile marketing adoption, research hypothesis will be presented. The methodology used to achieve the study objective and finally, the results and discussion and conclusion of the study will be presented.

Review of literature
Theoretical review

Technology Acceptance Model (TAM)

The theory was developed by Davis (1989), and it examines how users come to accept and use a technology based on the perception or belief behind that particular technology. Consequently, if the system is recognized to make the task easier to perform, this increases the probability of the system being accepted as being useful (Ajibade, 2018). TAM is an extension of Ajzen and Fishbein's theory of reasoned action (TRA), which holds that social behavior is motivated by an individual attitude which then tends to predict technology use (Lin, Shih and Sheh, 2007). The notion holds for the technology of personal use, as one would be convinced by social peers like family and colleagues or experts' recommendations through advertisements to adopt the technology (Ajibade, 2018). However, Davis (1989) replaced many of TRA's attitude measures with the two technology acceptance measures; perceived ease of use (PEOU), and perceived usefulness (PU). External variables affect attitude toward (ATT) using the technology and behavior intention (BI) through PEOU and PU, which affect the actual use (AU) of the technology.
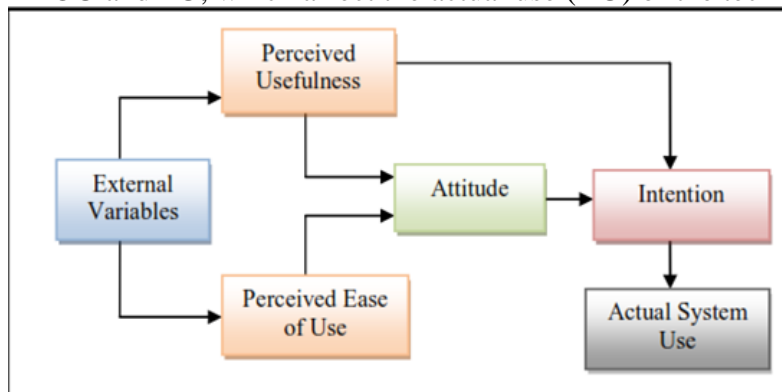

Figure 1. Technology Acceptance Model
Source: Adopted from Davis, Bagozi & Warsaw, (1989)

TAM assumed the success of new technology adoption based on positive attitudes towards two measures. These are PU which means whether or not someone perceives that technology to be useful for what they want to do, and PEOU means if the technology is easy to use, then the barriers are controlled. If it's not easy to use and the interface is complicated, no one has a positive attitude towards it. Thus, these two perceptions create a favorable Behavioral Intention (BI) toward using innovation that consequently affects its self-reported implementation (Davis et al., 1989).

Despite TAM being highly adapted to technology adoption, however, the theory does not reflect the variety of user task environments and constraints (Olushola and Abiola, 2017). Despite of TAM model being tested widely and proven to be valid and reliable with different samples and situations, TAM assesses the increase in demand for technology usability and

therefore lacks emphasis on the essential measures relating to users' perception of the usability of the technology and the system characteristics which might affect users' intention to adopt the IS (Holden and Rada, 2011). TAM model was designed for Western culture, where people use "a rational cause and effect paradigm to create perceptions" (Anandarajan et al, 2005, p51). Therefore, TAM constructs do not fully show the influence of technological adoption in countries such as Tanzania as Lwoga and Lwoga, (2017) find most of the people have less experience in technology use. From that point, the TAM hypothesis on understanding human behavior through empirical settings is not reliable. Therefore, the TAM model needs to be extended to include other psychological or physical constructs such as; hedonic motivation and facilitating conditions to effectively predict technology acceptance and use. This will raise the robustness of TAM since individuals might have been forced or tempted by other factors rather than their perception toward the technology on their intention to learn new technology.

Unified Theory of Adoption of Unified Technology (UTAUT 2)

The theory extended by Venatakesh et al (2012) from the original theory UTAUT (Ventakeshet al 2003) concerning the user intentions to adopt the technology innovation and their intention to continue usage behavior. Ventakesh et al (2003) mentioned four key attributes that affect the individual decision to adopt and use behavior; performance expectancy, effort expectancy, social influence, and facilitating conditions. UTAUT (Venkatesh et al., 2003) tested and found to have an R^2 of 70%, implying the model explains 70% of the variance in individual adoption intentions to use information technology. Thus, Ventakesh et al (2012) extended UTAUT2 has seven attributes that were measured together with demographics as a control variable; these attributes are performance expectancy, effort expectancy, social norms, facilitating condition, experience and habit, hedonic motivation and price value. the model empirically proved to explain 74% of the variance.
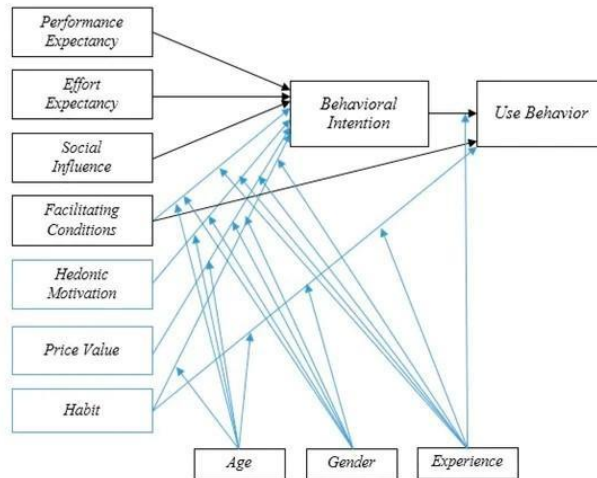
UTAUT2 Model (Ventakesh, Thong and Xu, 2012)

Although UTAUT2 holds that intention to use technology is influenced by hedonic motivation, price value, and habit however the theory ignores the attitudinal effect which is a cognitive process that depicts the positivity or negative thinking of the. Thus the UTUT2 was adapted as a supplementary theory extended on TAM theory to guide this study so that to increase the explaining power of the TAM theory.

Empirical Review

Mobile marketing is a marketing practice takes place via mobile phones and may include promotional messages sent through text messages, mobile telemarketing, viral marketing, geo-targeting and mobile broadcast advertising (Iqbal et al., 2019). Thus, is the marketing practices which involves the startup of relationships, acquire, generate activity and stimulate social interaction with organization and customers. Mobile marketing is a tool used for promotion strategy in many organizations. Since happened to be an interactive communication process that combines push, pull, and dialogue marketing form. According to prior researchers Huang., (2012); Riquelme et al., (2011) Tanakinjal., and Tanakinjal (2008) mobile marketing is the sole medium that achieves greater consumer responses than other media of promotion, while permission and acceptance play a vital role in obtaining the consumer responses and interaction for the efficiency of this channel in communication. Studies revealed the adoption of the mobile marketing is still at infancy stage at most of the countries (Oscar et al., 2017; Chille, et al.,2021). Few countries such as Ecuador, Turkey, Malaysia and China (Chimborazo et a, 2021; Chan et al., 2022; Zhang et al.,2023). Developing countries (Indonesia) and many African countries adoption of mobile marketing innovation is still low (Engotoit et al., 2016; Uwamaiya, 2021). Based on

Tanakinjal et al, (2011) the intention to adopt mobile marketing is the mental process through which a person passes from first learning about an innovation to final decision of mobile marketing adoption through consideration of factors such as; trust, risk, and permission. Thus, there is a need to investigate the factors affecting consumers' intention to adopt mobile marketing in most countries, while the adoption of mobile marketing channel declared by Duzgun and Yamamoto, (2017) to have a great value to the organization and consumers.

In assessing relevant predictors of technology adoption to consumers, scholars have applied various information technology theories such as the Technology Acceptance Model (TAM), Diffusion of Innovation Theory (DOI), and unified theory of acceptance theory (UTAUT). However, TAM is mostly used because of its simple nature (Ajibade, 2018), but the results have not been in consensus . Perceived usefulness (PU); is the individual perception of how technology will improve tasks or roles in terms of efficiency and effectiveness (Davis, 1989). Therefore, researchers argued that consumers will only use mobile marketing if they enjoy shopping through mobile phone devices. PU strongly influences the consumers' intention to participate in mobile marketing in the Netherlands and Portugal (Plasse,2017) Kenya (Bosire, 2021), and Dar es Salaam (Tanzania) (Chille et al., 2021). The main advantage of mobile marketing via mobile phone over e-marketing via PC is always powered on and on the hand of the owner, which enables ubiquitous reach, personalization, and instant interaction between the marketer and mobile phone owner. However, Chimbarazo et al., (2021) in Ecuador found the insignificant effect of PU on influencing the intention to adopt mobile marketing. Chimbarazo et al., (2021) argued that when consumers have high experience in smartphone use and usually interact through social media, the perception of usefulness has an insignificant effect to influence the intention to use mobile marketing.   Therefore, the following hypothesis formulated

H1; *Perceived Usefulness has a significant influence on consumers' intention to adopt mobile marketing technology in rural areas.*

Perceived Ease of Use (PEOU) is concerned with the learning process involved in the system or application of the innovation to free from complications and trouble of the process involved. Studies showed PEOU is an essential construct affecting consumers' intention to adopt mobile marketing since they need to gain confidence in using the application (Chimborazo et al, 2021; Chivizhe, 2019). Therefore, if they face difficulties in using the application, eventually causes an obstacle to intention. Consumers' intention to adopt mobile marketing increased if they perceived it easiest the web search, collect information, and execute transactions via mobile phone. From this review, we postulate the following hypothesis;

H2; *Perceived Ease of Use has a significant influence on consumers' intention to adopt mobile marketing technology in rural areas*

The Mediating Role of Attitude on Intention to Adopt Mobile Marketing

Attitude has a great role in consumers' decision to adopt or not to adopt mobile marketing since it is the cognitive process that depicts the positivity or negative thinking of the innovation. Globally the role of attitude was found vague due to differences in culture and perception toward the technology innovated. Putra in Indonesia found PU and PEOU did not influence the adoption directly though affect indirectly through attitude., while, Haq and Ghouri (2018) found the PEOU has an insignificant indirect influence on attitude toward m-advertising in Pakistan. In Africa, the effect of PEOU on attitude toward intention to adopt mobile marketing is scarcely investigated. Maduku et al, (2016) found that PEOU does not affect SMEs' attitudes toward the adoption of mobile marketing in South Africa. From this review, we postulate the following hypotheses;

H3a; *Attitude has a significant influence on the consumers' intention to adopt mobile marketing technology in rural areas.*

H3b; *Attitude mediates the relationship of perceived usefulness and perceived ease of use with consumer intention to adopt mobile marketing technology in rural areas.*

Facilitating Condition (FC)

Venkatesh et al (2003) explained the facilitating condition as the degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system. It reveals the user's knowledge of the new technology, ability to perform the marketing communication as other means of promotion, and financial resources incurred on the execution. Literature adopting the UTAUT model shows that there is a significant effect of the facilitating condition on the behavioral intention to adopt the technology such as mobile marketing. The studies of Shareef et al (2017), Nysveen and Pedersen (2016), Wong et al (2015), and Oliveira et al (2014) support that when consumers have favorable technology infrastructure tend to be more willing to adopt mobile marketing than other medium. Therefore, we postulate the following hypothesis;

H4; *Facilitating conditions have a significant influence on consumers' intention to adopt mobile marketing technology in rural areas.*

Hedonic motivation

It is the pleasure or enjoyment individuals derive from utilizing a particular technology (Tamilmani, Rana, and Dwivedi, 2019). Hedonic and utilitarian motivations are regarded as fundamental in investigating consumer

behavior as individual behavior differs from each other as either problem solvers or fun and enjoyment seekers (Zefreh, Edrie and Esztegar, 2023) According to UTAUT 2 consumer gratification of using technology is crucial as the individual intention to technology adoption is self-determination. According to Ventakesh et al., (2012), hedonic motivation has a strong correlation with behavioral intention toward technology adoption. In mobile marketing, the adoption is enforced by the intrinsic motivation to seek enjoyment, and pleasure (Eneizan, Mohammed, and Eneizan, 2019; Madav and Yadav, 2018) and recognition that one cope with fashion and style of the technology environment (Nyvseen et al 2005). Thus, hedonic motivation concluded that a consumer who perceives enjoyment while using a mobile phone for marketing purposes will be more engaged in the activity and, therefore, more likely to use their mobile phone for marketing.

H5; *Perceived consumers' hedonic motivation has a significant effect on consumers' intention to adopt mobile marketing technology in rural areas.*

From the review of the literature, the proposed research model and hypothesis development are presented in Figure 2. They suggest that the intention to adopt mobile marketing depends on perceived usefulness, perceived ease of use, facilitating conditions, and hedonic motivation.
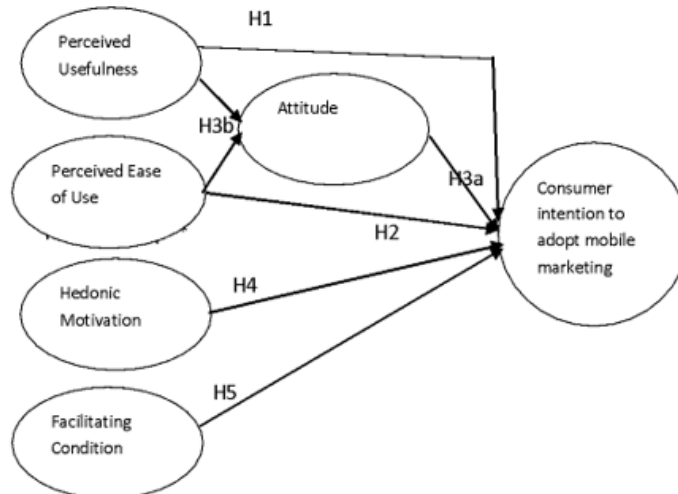
Research Methodology

It is the explanatory research aim to find the causal link among the variables relating to the objective of the study as suggested by Bhattacheree, (2012), The study opted for the positivist paradigm to study the reality that can be measured quantitatively through the set of hypothesis and statistically analyzed to be well understood. This study adopted a cross-sectional design to collect data from the villagers of South district of Unguja living in Paje and Kizimkazi from June to August 2023. The villagers aged from 18 years to 60

years owning a mobile phone during the study were the target population and selected through a stratified random sampling, so that to ensure there is representation of respondents from the selected villages. These two villages were selected because expected to have high economic conditions compared to neighboring villages such as Kitogani, Makunduchi, and Bwejuu due to a higher concentration of hotels and higher tourism-related businesses thus the selected villages expected to have a high number of mobile phone users which is the base for mobile marketing adoption.

The constructs under the study were adapted from the existing literature concerning mobile commerce and mobile marketing to guarantee content validity. All questionnaire items were measured using a 5-point Likert-type scale, where 1 = "strongly disagree" and 5 = "strongly agree". The survey instrument was initially piloted by university students at the State University of Zanzibar. From the pilot study, minor modification was made to the pre-determined set of questions. This is performed to increase the response rate and accuracy of responses as recommended by Gyankovandar, (2022). The sample size was estimated based on the N; Q rule (Jackson 2003) where the Ideal sample size to parameter ratio, while the items measured was 25 hence the required sample for this study was a minimum of 10*25=250 while the maximum to be 20*25=500.

A total of 500 survey questionnaires were distributed to consumers accordingly. 425 valid responses from the survey instruments were obtained and 14 responses were incomplete, thus ignored from the analysis. 54.8% of respondents were males and 43.2% were females. The age of participants was from 18 years to 60, youth from 18-29 were 180 (43.8%), Adults 30-49 were 150 (36.5%), and seniors from the age of 50-60 were 81 (19.7%). Of which 138 (33.6%) were female and 273 (66.4) were male. Therefore, the sample size for the study was 411, this sample size was appropriate for the Structural Equation modeling which was opted for this study analysis as it was verified by (Hair et al., 2006).

Results

Measurement Model, the reliability of the model is measured through confirmatory factor analysis (CFA). Maximum Likelihood Estimator (MLE) algorithms were employed because it is accurate and efficient based on Baistaman et al., (2020). The construct validity was assessed through goodness of fit indices (GIF), thus, the results from the Second-order CFA model revealed that the data fits well in the model since GIF values were above the acceptable cut-off point based on Hu and Bentlers (1999). $X^2/$ df of 2.5, RMSEA of 0.057, TLI of 0.932, GFI of 0.91, CFI of 0.944 and RMR of 0.03. Convergent validity and discriminant validity were assessed and revealed composite reliability (CR) values ranging between 0.87 to 0.95. the average

variance extracted (AVE) values of 0.63 to 0.78 as shown in Table 1 below, therefore the convergent validity met according to Fornell and Larcker (1981). Besides the construct and discriminant validity maintained as the value of AVE appeared to be greater than the squared correlation coefficient as depicted in Table 2 (Fornell and Larcker, 1981).

Table 1. Results of the Measurement Model

Variable	Question	Crobanch Alpha	Standardized loading	Average Variance Extraxted (AVE)	Composite Reliability (CR)
FAC	The existence of Interoperable network infrastructure is appropriate for all mobile phone users to receive marketing message	0.93	0.924		
	High penetration of mobile phone usage in the country is appropriate for us to share our marketing message with our friends.		0.907	0.78	0.95
	I have a mobile phone which is appropriate to receive our marketing message at their convenience.		0.897		
	I have the knowledge and the resources to interact with mobile marketing messages		0.887		
	I will not look into mobile marketing messages because it will cost me		0.809		
PERUSEF	Marketing messages received on my mobile phone will help me make better shopping decisions.		0.918		
	Marketing messages received on my mobile phone will help me to reduce the time I take to search for products and services	0.90	0.877	0.75	0.92
	Marketing messages received on my mobile phone will help to improve my shopping efficiency,		0.851		

	especially when I am in a hurry or in a new city			
	I think marketing messages received on my mobile phone will save me money.		0.818	
PEOU	I believe purchasing via mobile phone is very easy		0.931	
	WI believe receiving marketing ads through mobile phones is very effortless.	0.91	0.911	0.66	0.9
	The search for marketing messages via mobile phone is very simple		0.756	
	The task of interacting with marketing messages via mobile phone is very simple		0.733	
	It would be easy for me to become skillful in using mobile marketing		0.700	
CID	Given the chance I intend to use mobile marketing		0.816	
	I intend to buy products and services via my mobile phone	0.82	0.815	0.63	0.87
	I expect to continue with mobile marketing in the future		0.811	
	I would respond to a coupon offer for a product or service on my mobile phone.		0.743	
ATT	It just makes sense to use mobile marketing to the familiarity of mobile technology nowadays		0.846	
	Mobile marketing is so interesting, that you just want to learn more about it	0.85	0.826	0.67	0.89
	If someone taught me how to use mobile marketing, I would continue to use it		0.810	
	Other people should use mobile marketing		0.791	

HM	Mobile marketing would be compatible with mobile lifestyle	0.86	0.880		
	Mobile marketing would be appropriate for me to express my personality and status		0.828	0.7	0.88
	Mobile marketing would be much more pleasant and entertaining to me		0.810		

Table 2. Discriminant Validity; Correlation Matrix and AVE Values

FACTOR	PEOU	CIA	FAC	PU	ATT	HD	Square of AVE
PEOU	**1**						**0.812**
CIA	0.349	**1**					**0.793**
FAC	0.377	0.385	**1**				**0.883**
PU	0.405	0.305	0.317	**1**			**0.866**
ATT	0.370	0.352	0.401	0.546	**1**		**0.818**
HM	0.587	0.350	0.354	0.315	0.426	**1**	**0.836**

Note: CIA: Consumer Intention to adopt Mobile Marketing, HD: Hedonic Motivation, FC: Facilitating Condition, PU; Perceived Usefulness, PEOU; Perceived Ease of Use. ATT; Attitude.

Latent model

The latent relationship in the model was measured through SEM-AMOS version 25. The structural model found that most of the GIF indices meet the accepted fit for the data in the hypothesized model based on Byrne (1998). The evaluation of GIF reports that the $\chi2 =1015.238$, df=393, p=.00, χ^2/df is 2.5 which is satisfactory for the sample of N>200, RMR=.05, RMSEA values 0.06 which indicates of good fit between the hypothesized model and the observed data (Byrne, Barbara p101; Hu and Bentler,1999). the NFI = 0.9 acceptable cutoff (Byrne 1998), CFI value 0. 927 meets the cutoff criteria based on Hu and Bentler (1999) the result caused by the low observed correlations for most of the variables in the study.

Among the hypotheses, perceived usefulness was found to have significant positive effects on the consumer intention to adopt mobile marketing (B= 0.166 p<0.05), and perceived usefulness also had a positive significant effect on consumer intention to adopt mobile marketing (B=0.263 p<0.05), facilitating condition also has a positive significant effect on consumer intention to adopt mobile marketing in rural areas (B=0.291 p<0.000), therefore H1; H2 and H5 were accepted. The unexpected result appeared that Attitude did not affect consumers' intention to adopt mobile marketing (B=0.096p>0.05), thus H3$_a$ was rejected. Hedonic motivation did not affect consumers' intention to adopt mobile marketing (B=0.166 p>0.05)

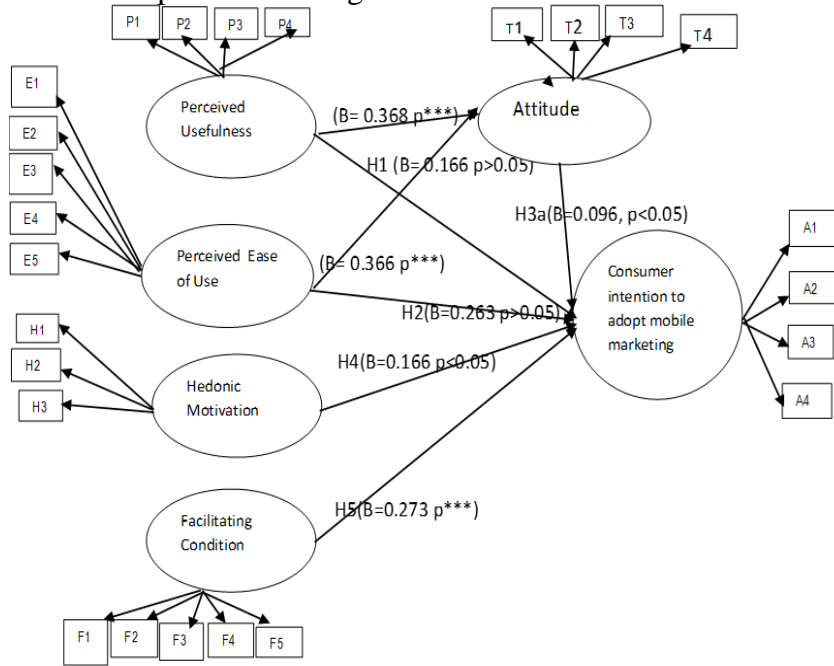and therefore H4 was rejected. The structure model of the extended TAM framework is presented in Figure 2 below

Figure 2. SEM results. (source; Authors data, 2023)

Mediation

The mediation effect of attitude toward the relationship between PU, PEOU, and consumer intention to adopt mobile marketing is shown in Table 2. The Hayes Macro is used to analyze the mediating effect of attitude on consumer intention. The results revealed significant mediating effect of ATT on the relationship between PU and CIA (β=368, Boot-LLCI=0.0212, ULCI-0.1810, p=.000). The mediating effect of attitude on the relationship between PEOU and CIA was (β=.0. 0.3663, p=.000) together providing sufficient evidence of mediating effect and enforced to support the hypothesis H3b.

Table 3. Mediation

Relationship	Total Effect	Direct Effect	Indirect Effect	Confidence interval		T statistics	Conclusion	Label
				Lower bound	Higher bound			
PU->ATT->CIA	0.368 (0.000)	0.272 (0.05)	0.096	0.0212	0.1810	3.7900	Partial Mediation	Supported
PEOU->ATT->CIA	0.3663 (0.000)	0.315 (0.000)	0.0560	0.0174	0.0966	5.9915	Partial Mediation	Supported

Discussion

The purpose of this study was to explore consumers' intention to adopt mobile shopping among rural consumers in the South district of Unguja and the mediating effects of attitudes toward behavioral intention regarding the perception of usefulness and ease of use. Concerning TAM, the obtained results of this study provide evidence that attitude mediates the relationship between PEOU, PU, and BI. This infers that if mobile marketing is perceived to be easy to use, has no complexity encountered in getting knowledge, and is expected to be compatible and useful to them, creates a positive attitude toward the intention to adopt mobile marketing.

Perceived usefulness was found to be associated with consumers' intention to adopt mobile marketing in rural areas. Mobile marketing platforms with a user-friendly interface will increase consumers' intention to adopt such particular innovations. The design interface quality will affect the traffic of consumers while information quality will raise the consumers' intention to purchase through mobile phones (Sun and Chi, 2018). Consumers in rural areas will feel positive toward mobile marketing if they can easily access brands by browsing their mobile phones, and thus minimize their shopping time. According to Ghazali et al. (2018), the vital characteristics of mobile marketing technology the personalization and interactivity offering consumers the ability to interact and communicate directly with retailers the flexibility features of this chanel increase the usefulness of the mobile marketing technology hence becoming the driving factor of consumer behavioral intention toward mobile marketing adoption. The finding is about Chille et al., (2021) and Haq and Ghouri (2018)

PEOU has a significant effect at $p<0.05$ (in the research model) on consumer intention as stipulated in TAM theory (Davis et al., 1989). Consumers in rural areas will be more likely to adopt the innovative technology when they perceive the mobile marketing technology as easier to learn no much effort needed to study and be able to use efficiently. Thus, the complexity of the mobile marketing technology affects their intention and will diminish the propensity to adopt such technology. Since the study was based in rural areas, consumers have little or no technical skills that could help them execute mobile applications effectively, thus the perception of less technical complexity to grasp the expertise on the application did influence their adoption decision.

This result was deemed relevant in the prior scholars related to mobile marketing adoption in different contexts. The study of Chille et al., (2021), Ghazali (2018), and Chan et al., (2022) concomitantly suggest that consumers tend to adopt technology when they believe the mobile marketing innovation will be free of effort to learn and to use, hence directly could improve their intention toward adoption of the innovative technology. Based on this study

sample most of the respondents were youth aged from 18 to 29 years regarded as the early majority in the adoption of innovation specifically on mobile phone technology (Kharono et al., 2022, Arora, Malik and Chawla, 2020) become keen to find the awareness on how to use the innovation, the perception of less complexity is the main determinants of their decision to adoption as stipulated by Rogers (2003).

The study, however, is contrary to the findings of previous researchers who found the perceived ease of use to have no significant effect on the adoption. Ismail (2015), and Elizavita and Jean-Paul (2012) found the insignificant effect of complexity on technology adoption. This could be attributed to the familiarity with the use of such technology as expected to reduce the anxiety of complexity as revealed by Maduku et al., (2016).

Hedonic motivation as an extended construct in the TAM model was found to have an insignificant effect on consumers of rural areas to propel their intention to adopt mobile marketing. The expected consumers' hedonic motivation obtained from using mobile marketing such as consumers' enjoyment, personality, and social status did not influence consumers in rural areas. They just consider the usefulness such as interactivity and ubiquity of the mobile marketing channel rather than luxury and enjoyment purposes. Therefore, consumers in rural areas appear to be less concerned about the leisure and gratification obtained when it comes to adopting mobile marketing. The hedonic motivation is also not significant in the adoption of mobile applications such as mobile banking (Oliveira, Thomas, Baptista, and Compos, 2016) and Slade, Williams, Dwivedi, and Piercy, 2015), however, contend that Jordanian consumers as confirmed that perceived enjoyment to be the most influential factor of intention to adopt mobile marketing Eneizan et al., (2019).

Facilitating condition

The study shows the significant effect of facilitating conditions to facilitate the consumer intention to adopt mobile marketing in rural areas. Since the study was conducted on consumers living in rural areas, their expertise in performing technical functions in the mobile phone is not adequate at large. They need technical support to facilitate easy and efficient utilization of the channel. The prevailing facilitating conditions such as interoperable networks, low cost of internet service, availability of toll-free numbers, and live chart box to communicate with suppliers found to significantly affect consumer intention to adopt mobile marketing. Consumers mainly consider the availability of vendors whenever needed to interact in entering into business agreements. The availability of an interoperable network environment also influences the adoption of mobile marketing. In addition to that in conducting mobile marketing the products need to be sent

to the consumer at their place, thus is the most considered aspect in consumers' intention to adopt this channel in rural areas. Since the infrastructures in most of rural areas are not well-established transportation is difficult to enable mobile marketing operations. The finding is relevant in the adoption of other mobile business applications as Lin, Lin, and Deng (2022) and Alm, Chotiyaputta and Bejrakashem (2022) revealed in the adoption of mobile payment in different contexts. and contradict the finding of Hakimian (2017) in the adoption of mobile marketing in Malaysia.

Mediating effect

The results showed the partial mediation effect of attitude on the relationship between PU, PEOU, and CIA. This implied that PU is the intrinsic factor influencing on consumers' attitude which subsequently drives their behavior intention on technology. This infers that, if the consumer has a positive attitude toward the intention to adopt mobile marketing technology, would perceive mobile marketing as beneficial and easy to use to enable their shopping effectively. Thus, emphasis on the improvement of the positive attitude on the consumers' mindset could be attributed to making the mobile application simpler

This result is consistent with that of Riantini et al., (2021), Gbongli et al., (2019), and Lopez and Bonilla (2017) which confirmed that PU indirectly had a great impact on user desired emotional attitude toward the intention to adopt the technology. Kumar et al (2020), Haq and Ghour (2018), and Verma et al., (2017) asserted the significant effect of mediation of attitude on the relationship between PEOU and consumer intention to adopt mobile technology. However, the results were contrary to other studies which found an insignificant mediation effect of attitude Chauhan (2015), Tobbin (2014), and Ajibade (2018) insisted that in the workplace, the system could be adopted due to the perceived relative advantage irrespective of attitudinal influence to the use of such system.

Implication

Mobile marketing has become the core business strategy nowadays thus it is an unavoidable trend in any organization wishing to compete in the marketplace. The current study presented significant theoretical and practical implications for mobile marketing vendors, to propose an opportunity that allows them to promote their marketing strategies through consumers' hands via mobile phone devices. The strategy could benefit both vendors and consumers. The obtained results provide a roadmap for a better understanding of the factors that shape consumers in rural areas intention to adopt mobile marketing, thus practitioners and researchers in this domain could be beneficial. Theoretically, this study proved the significance of the TAM model

as crucial factors for consumers' behavioral intention that afterward reflect the intention to adopt mobile marketing in their daily business transactions. In addition, mobile marketing vendors can design and develop more innovative user-friendly interfaces, and improve service delivery to maximize consumer perceptions of value and satisfaction so that consumer intention to adopt mobile marketing could be maximized. Managerial implication drawn from this study results is that, with the rapid increase of mobile phone ownership and internet subscriptions there is a need to extend coverage and competitive advantage to rural areas since mobile marketing enables the ubiquitous reach of marketing messages to the target consumers.

Secondly, mobile marketing vendors need to be aware of the strong effect of PU, PEOU, FC, and mediation of attitude. From the extensive use of mobile phone service consumers nowadays especially youth intend to adopt mobile applications such as mobile money, mobile banking, mobile gaming, and mobile marketing since the youth become mobile savvy. Thus, it is recommended to focus on delivering frequent, accessible mobile marketing app so that consumers might lose interest or quit while browsing the app. Therefore, it is highly recommended for mobile marketing strategy to target the consumers in rural areas whose encompass a high concentration of population due to high income generated from business activities such as tourism, fishing and mining obtained in the area compared with other villages. To sum up, the current study aimed to investigate motivation factors affecting the perceptions of rural consumers in adopting mobile marketing technology. The proposed model explored TAM variables in extension with the UTAUT2 model to achieve this study objective. In our model facilitating condition, perceived ease of use, and perceived usefulness were the main factors driving intention. The result emphasized the vitality of providing technical support and relevant information to consumers to facilitate ease of adoption and utilization of the channel in rural areas. Attitude did not directly influence intention, however partially mediated the behavioral intention through perceived usefulness and perceived ease of use. Thus, mobile service providers should focus on the features that consumers in rural areas find useful with less effort to understand to build favorable attitudes toward behavioral intention. Most consumers in rural areas are now knowledgeable in using mobile phone applications such as mobile marketing since this technology is still new in Tanzania. Therefore, the role of attitude in the intention to adopt mobile marketing should not be neglected.

Limitations and Future Studies

The study has some limitations. Firstly, the study used data from two villages in the south district, thus limiting the generalization of the findings to the consumers in rural areas. Future studies should extend the sample to

include more villages from south regions to acquire an in-depth understanding of the position of consumers in south regions regarding the intention to adopt mobile marketing. Secondly, the current study extends only two constructs from UTAUT2 to evaluate the proposed conceptual model. Future studies recommended extending the TAM model with more constructs from UTAUT2 such as price value, habit, and its moderating constructs to gain a more comprehensive understanding of consumers' behavioral intention to adopt mobile marketing.

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Data availability: All of the data are included in the content of the paper.

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Human Studies

This research followed The Office of the Second Vice President of Zanzibar guidelines and for research ethics involving human subjects. Also, abide by the code of conduct provided to the research scientist. The research was Approved by the Office of Chief Government Statistician Zanzibar. The study followed the Declaration of Helsinki ethical standards.

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