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Long-Term Care Regulations in Ontario, Canada during COVID-19

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Abstract

The Ontario, Canada statutory requirements of Nurse Patient ratios and other Health care professionals' activities are discussed following a descriptive, analytical and investigative approach. Using OECD Statistics and evaluating the impact on population health during COVID-19, as well as drawing from constitutional law and administrative law, the authors apply, explain and clarify opinions of jurists, rulings of judges and arbitrators and pull comparisons to statutory and statistical data from international jurisdictions such as Australia and USA. Recommendations for improvement of the Ontario Health Care system are conferred.

Keywords: Nurse Patient ratio, Covid-19, Long term care, Canada, Ontario, juridical analysis

Introduction

This article presents a critical look at the lack of regulation surrounding staff to patient ratios in hospitals and long-term care (LTC) homes in Ontario and Canada. While healthcare professions are highly regulated, there is little regulatory oversight in the provision of safe staff complements within hospitals and LTC facilities.

Specifically, this article reviews the lack of regulation mandating nurse-patient ratios with a particular emphasis on LTC homes. This topic is

justified by an overwhelming body of research linking adequate nurse-patient ratios to a reduction in failure-to-rescue cases (FTR) (Aiken, Clarke, Cheunge et al., 2003), a reduction in the incidence of hospital-acquired infections (HAIs) (Cimiotti, Aiken, Sloane et al., 2012), a quicker recovery time and a reduction in the length of stay time (Carayon & Gurses, 2008).

Mandatory nurse-client ratios have already been implemented in other jurisdictions, such as Australia and the USA with mixed results. One study cited by the Canadian Nurses Association articulated that there is currently no evidence on the effectiveness of legislated nurse-to-patient ratios, however, standardizing nurse-to-patient ratios would have both pros and cons (Hall, Lalonde, Murphy et al., 2019). Yet, despite this and according to the Organization for Economic Cooperation and Development (OECD), Canada's average places below other developed countries in areas such as rates of avoidable complications post-surgery and rates of foreign objects left behind after surgery (CIHI, 2019), indicators strongly linked to nursing-related interventions.

In a 2004 study, researchers compared international data on quality of medical care between 5 commonwealth countries, including Australia, Canada, New Zealand, England and the United States, and found that no one country scored the best or worst overall, but each country has an area in which it could learn from international experience (Hussey, Anderson, Osborn et al., 2004).

Ontario's current statutes and regulations governing hospitals and LTC homes are insufficient to address a consistent underperformance in key patient safety areas. To address the deficiencies in patient safety and improve patient outcomes, the legislator needs to consider mandating nurse-patient ratios within the province with a particular emphasis on LTC facilities.

Nurse-Patient Ratios and Patient Outcomes

Research has found a correlation between nurse education and patient outcomes. In one study, researchers found that a 10% increase in the proportion of nurses holding a bachelor's degree was associated with a 5% decrease in both the likelihood of patients dying within 30 days of admission and the odds of failure to rescue (Aiken, Clarke, Cheunge et al., 2003). This is less relevant in Ontario as, since 2005, a bachelor's degree has been the minimum requirement for entry to practice as a registered nurse (RN) (CNO, 2018). However, the registered practical nurses (RPNs) hold a two-year college diploma (CNO, 2020), and they frequently replace RNs.

Another study found that increasing the number of Registered Nurse working hours on a medical-surgical unit led to a reduction in the rate of patient falls and increases in reports of patient satisfaction with pain management (Sovie & Jawad, 2001). In another study, a higher proportion of

RNs to LPNs (the American equivalent of RPNs in Ontario) was associated with a shorter hospital stay, a lower rate of urinary tract infections, as well as a lower rate of upper gastrointestinal bleeding (Needleman, Buerhaus, Stewart & Zelevinsky, 2002). Additionally, a higher proportion of RNs to LPNs correlated with lower rates of pneumonia, shock or cardiac arrest and lower rates of failure to rescue (Needleman et al., 2002). This reduction in failure to rescue was also observed in another study that found that a higher proportion of RNs to patients who have suffered an acute heart attack was less likely to die; however, they were statistically more likely to die in areas that had a higher ratio of LPNs to patients (Person, Allison, Kiefe et al., 2004).

Furthermore, research has found that a 10% increase in the proportion of RNs in all types of hospitals was associated with 5 fewer patient deaths for every 1,000 patients who were discharged (Tourangeau, Giovannetti, Tu & Wood, 2002). Some research has even recognized a 45% reduction in emergency room repeat visits after discharge when RN presence per patient per day increased by 0.71 hours (Weiss, Yakusheva & Bobay, 2011). Lastly, a systematic review of 26 studies found that decreased nurse staffing levels in intensive care units correlated to an increase in adverse patient outcomes such as mortality, infections, postoperative complications and unplanned extubation (removal of an intubation tube) (Penoyer, 2010).

California's Approach to Nurse-Patient Ratios

In 1999, former Governor Gray Davis signed *Assembly Bill 394* into law which established minimum nurse-patient ratios for various hospital departments in California (McHugh, Kelly, Sloane & Aiken, 2011). The purpose of this bill was two-fold, on the one hand, it was aimed to improve quality of care and patient safety and on the other hand, it was aimed to retain nurses in employment as, at the time, California was experiencing a massive nursing shortage (McHugh et al., 2011). The regulations specify different complements depending on the specialty area, for example in medical-surgical units it required, at first, 1 nurse to 6 patients, but after an 18 month grace period, required 1 nurse for 5 patients (McHugh et al., 2011). It wasn't until 2002 that the department of health announced its final ratios and the *Bill* went into full force and effect on January 1st, 2004 (McHugh et al., 2011).

While the passing of Bill 394 did not measure any improvement in patient safety among affected hospitals (Cook, Gaynor, Stephens & Taylor, 2012) since the implementation of mandatory ratios, there have been better workload perceptions, increased job satisfaction, less burnout and significant reductions in workforce turnover (Serratt, 2013).

One of the reasons explaining this phenomenon may be that, before the implementation of the Bill, many hospitals already met the requirements specified by the *Bill* (Cook et al, 2012). Furthermore, the requirement for

registration as a nurse in California, both LPN and RN, is an associate's degree (college level, non-baccalaureate) (Nightingale College, 2019). There is great diversity in who qualifies as a nurse in California and the level of training and education is quite variable when compared to the standards of Canada and Australia.

Victoria, Australia's Approach to Nurse-Patient Ratios

In Victoria, Australia, nurse ratios were traditionally bargained for through union and collective agreements (Australian Nursing & Midwifery Federation, n.d.). These agreements generally allocated ratios of 20 patients to 5 nurses (or 1 nurse to 4 patients). However, in 2015, *The Safe Patient Care (Nurse to Patient and Midwife to Patient Ratios) Bill* was introduced (The Safe Patient Care Act, 2015). The goal of implementing this Bill was to ensure that both urban and rural hospitals operated at safe levels and that hospitals received the required funding for such complements (Australian Nursing & Midwifery Federation, n.d.).

Since the implementation of safe patient ratios, Victoria has seen a 151% increase in patients receiving same-day treatment, hospital time reduced from 3.8% to 1.8%, a 20% increase in urgent and semi-urgent elective surgery and Victorian hospitals work closer to capacity than any other Australian state (Australian Nursing & Midwifery Federation, n.d.). Furthermore, Australia as a whole has seen a substantial decline in hospital sentinel events. Sentinel events are wholly preventable clinical incidents resulting in serious harm or death to patients (Australian Commission on Safety and Quality in Health Care, 2019). Between 2012 and 2014, Australia had rising sentinel events. Since 2014 onwards, the number of sentinel events has been decreasing dramatically and continues to decrease (Australian Commission on Safety and Quality in Health Care, 2019). Additionally, when compared to other Australian states, Victorian hospitals have the lowest cost in Australia and the lowest national length of stay average (Fitzpatrick, 2015).

Victoria has had positive outcomes following the implementation of Bill 2015. Another advantage of the Victorian over the Californian law is that it also applies to Aged Care Homes (LTC facilities in Ontario). The Bill requires 1 nurse + 1 support worker for 7 residents in the morning, 1 nurse + 1 support worker for 8 residents in the afternoon and 1 staff (general, can be regulated or unregulated) for 15 residents during the night (Fitzpatrick, 2015). However, there is insufficient data comparing Victoria-specific Aged Care outcomes to the rest of Australia, thus the effects of these complements cannot be truly ascertained at this time.

In the proceeding section, a discussion of Canada's OECD indicators will be reviewed and compared internationally.

Canada's OECD Statistics

Canada is one of the highest spenders in health care within the OECD nations network (CIHI, 2019). In 2018, Canada spent approximately 10.7% of its GDP on healthcare at a cost of roughly \$6,448 per adult person in the country (CIHI, 2019). This was similar to Australia who spent approximately 9.3% of their GDP or \$6,488 per adult person in the same year (CIHI, 2019). The highest spender was the United States, with healthcare comprising 16.9% of their GDP at roughly \$13,722 per adult person in the country (CIHI, 2019).

Canada, as a country, performs poorly in trying to meet the OECD international average in patient safety indicators. It has done most abysmally in the rate of foreign bodies left in a surgical patient, with the international average being 3.8 per 100,000 people and Canada rating at 9.8 per 100,000 people, the highest of any other country. Another area where Canada has done badly is in obstetrical trauma. The OECD average is 5.5 per 100,000 people and Canada ranks at 16.4 per 100,000 people, again the highest of any other OECD country.

Furthermore, Canada shows the highest lengths of hospital stay, with an average of 7.5 days (between 2015 and 2019). In Australia, the average hospitalization stay is 4.1 days and in the USA it is 5.5 days (OECD, 2020). However, in terms of quality of care, Canada meets or exceeds the international average in more areas than it falls below average. For example, generally, survival rates for various cancer types exceed the international average (OECD, 2020). The only three areas that Canada falls below the international average are in avoidable COPD admissions, time spent with a physician and having a physician easy to understand (CHI, 2020A).

Canada underperforms in its LTC specific indicators. For example, in 2016, Canada counted 3.7 LTC workers per 100,000 people 65 years and older (OECD, 2020). By comparison, Australia reported 6.2 workers, while USA had 5.7. Furthermore, Canada's number of LTC workers has been declining, with the most recent count being 3.5 workers per 100,000 in 2018 (OECD, 2020). Canada's overall difficulty to supply LTC workers in accordance with the growing number of healthcare recipients is depicted in the chart below.

Anatomy of Healthcare Mistakes in Canada

Unfortunately, there is little data available about patient safety within LTC facilities, although Canada offers extensive information about patient safety within hospitals. According to the Canadian Institute for Health Information (CIHI) in collaboration with the Canadian Patient Safety Institute (CPSI), harm by medical errors is experienced by 1 in every 18 hospitalizations (Chan & Cochrane, 2016). Most errors (56.6%) happen on medical units in hospitals with 6.2% of patients experiencing harm (Chan & Cochrane, 2016). Surgical units constitute the next area experiencing the most

harm, with 19.8% of all incidents or 7.6% of patients suffering a harmful event. Further, 11.9% of incidents are suffered by newborns (1% of patients) and 11.7% by obstetric patients (4.2% of patients) (Chan & Cochrane, 2016). Most of the harmful events are either nursing related or mitigated by inadequate nursing ratios. For example, the most common harmful event comes in the form of healthcare-associated infections (37%) and health care medication associated conditions (37%) which include urinary tract infections (12% of associated infections) and pneumonia (7% of associated infections) (Chan & Cochrane, 2016). Next come the procedure associated conditions (23%), such as hemorrhage (7% of harmful events) and lacerations or punctures (4% of harmful events). The last category represents patient accidents such as trauma (related to falls or other incidents) which consist of 3% of events (Chan & Cochrane, 2016).

Research shows that complex patients are at a higher risk of harm due to their comorbidities (multiple illnesses or complications) (Chan & Cochrane, 2016). In addition, these complex patients are also more likely to experience more than one harmful event, particularly those ranking high in complexity being 3 to 4 times more likely to experience multiple occurrences of harmful events when contrasted to lower complexity patients (Chan & Cochrane, 2016).

Tragically, one in 8 hospitalized patients who experience a harmful event will die (Chan & Cochrane, 2016). However, a causal link that the harmful event was linked to the death cannot be established yet (Chan & Cochrane, 2016), although an observable trend is worth noting. In fact, between 2014 and 2015, 12.5% of patients who experienced at least one harmful event died in hospital (a total of 17,300 patients) which is significant as being 4 times the death rate of patients who do not experience a harmful event (Chan & Cochrane, 2016).

Several prevalent and persistent safety issues were addressed in a comprehensive literature review of safety and quality in LTC homes, conducted in partnership with the CPSI (Wagner, 2008). One pivotal finding is a continuing and most frequently reported adverse event in LTC facilities, with a profoundly negative impact on residents (Wagner, 2008). Another imperative issue in need to be addressed and identified in this study was the need for medication safety as there is a high prevalence of adverse events related to medication, among LTC residents (Wagner, 2008). Yet another pressing issue was healthcare-acquired infections which can be mitigated with the implementation of best practice guidelines and adherence to infection control practices (Wagner, 2008).

One important note to mention is that having zero errors, while ideal to strive for, is not realistic. Humans are not infallible, and errors are bound to happen. However, the statistics show that Canada has much room for

improvement, especially when we consider its ranking against other OECD nations.

The Current Legislation in Canada

Overview

In Canada, healthcare is guaranteed to all Canadians under the *Canada Health Act*, 1985. The *Act* operates within the *Constitution Act*, 1867 of Canada to provide ‘insured services’ to all Canadians. Insured services are defined under section 1 of the *Act* as:

[H]ospital services, physician services and surgical-dental services provided to insured persons, but does not include any health services that a person is entitled to and eligible for under any other Act of Parliament or under any Act of the legislature of a province that relates to workers’ or workmen’s compensation (*services de santé assurés*).

Insured services represent what Canadians know to be the everyday healthcare they access, such as their appointments with physicians, their diagnostic tests or imagery scans. All of these are considered ‘insured services’ and thus covered under the *Canada Health Act*. Furthermore, the purpose of the *Act* is outlined in section 4 and stipulates the scope of the *Act* as:

Establish[ing] criteria and conditions in respect of insured health services and extended health care services provided under provincial law that must be met before a full cash contribution may be made.

The *Act* essentially lays the framework for healthcare in Canada, how resources are divided and the essential tenets of the Canadian healthcare system, namely Comprehensiveness, Universality, Portability, and Accessibility. The *Act* also makes provisions for billing and the allocation of Federal funds to the provinces for healthcare.

Despite the *Canada Health Act*, by the *Constitution* of Canada, the responsibility of the provision of healthcare falls to the provinces under section 92(7). Thus, each province has its array of statutes that direct, govern and regulate healthcare. This also extends to the regulation of LTC homes. The *Canada Health Act* is silent on the funding and allocation of services to LTC homes, this aspect being left to the respective provinces to manage and control (Government of Canada, 2005). Therefore, provinces are permitted wide discretion in regulating and managing the day-to-day activities, function, funding and control of such facilities.

Ontario, for example, implements a range of *Acts*, such as the *Public Hospitals Act*, the *Health Insurance Act*, the *Medicine Act*, the *Nursing Act*, the *Health Protection and Promotion Act*, the *LTC Homes Act*, and other various ancillary *Acts*. Each province has its *Acts* collectively working

together to regulate and dictate the medical practices that the citizens of each province encounter in their day to day lives.

Notwithstanding the Canadian healthcare system being highly regulated and extensive in its scope, much of the day to day management of the healthcare institutions accessed daily by Canadians (such as hospitals and nursing homes) is left to the institutions themselves to develop and implement. For example, the *Public Hospitals Act* grants the broad authority of the management of hospitals to delegates. In particular, the hospital management regulations under the *Act* grants the hospital administrator the power to enforce the *Act* within the hospital and to provide for the overall management and direction of the hospital activities. While the Minister (of health) maintains control to enforce provisions of the *Act*, the ultimate day to day management of hospitals is bestowed to the administrator.

Staffing Complement & Structure

Despite the regulations outlined in the health *Acts* of the provinces, currently, no single *Act* in Canada provides for the mandatory allocation of safe nursing or even staff complements. This means that the ascertainment of staffing complements in all healthcare institutions, be it hospitals, nursing homes and/or clinics is left to be determined by the administration of each respective institution.

Ontario has been criticized for failing to maintain an adequate number of healthcare professionals. For example, in 2018 there were only 690 Registered Nurses (RN) per 100,000 Ontarians (Ontario Nurses Association, 2019) and only 220 physicians for every 100,000 people (Bourgeault, 2018). However, generally, Canada's supply of nurses has been keeping up with its population growth. Between 2015 and 2019, Canada's supply of regulated nurses (including all nursing types: Registered Practical Nurses (RPN), RN and Nurse Practitioners (NP)) grew by 1.6%, while population grew by 1.2% (CIHI, 2019B). However, the supply of RN grows slower than the supply of NP and RPN, by only 0.6% in 2018 (CIHI, 2019B).

This is significant, as the scope of practice between the various professionals varies depending on the designation. The scope of practice of each regulated nurse in Ontario is determined by a mixture of legislation and policy outlined by their regulatory body, the College of Nurses of Ontario. For example, the controlled acts that nurses may perform are outlined in the regulations under the *Nursing Act* and the *Regulated Health Professions Act (RHPA)*. There are 14 controlled acts under the *RHPA* and generally, nurses are authorized to perform 5 of those acts (unless the nurse holds the designation of a nurse practitioner) (CNO, 2020B).

Generally speaking, nurses holding the RN designation are the ones who have the broadest scope of nursing practice and RPNs hold a more limited

scope. Nurse practitioners (NPs) hold an enhanced scope, permitting them to prescribe medications, order diagnostic tests and practice in a role that is similar to that of a general practitioner; however, these nurses are not frequently employed in bedside hospital settings and their skills are used to bridge the gap for patients who require services that were traditionally only available through physicians.

The College of Nurses of Ontario provides guidelines on ascertaining which patients should receive care from an RPN vs an RN (CNO, 2018B). In their practice recommendations, they outline a three-factor framework for decision making about which nursing category should be used. This framework includes (CNO, 2018B):

1. Complexity: the greater the complexity (i.e. multiple illnesses, someone who is unstable medically, variable condition) the more likely the nurse should be of the RN designation (CNO, 2018B).
2. Predictability: the less predictable a patient's outcomes are and how a patient will fair, the more likely the nurse should be of the RN designation vs. a patient with predictable outcomes whose prognosis is relatively anticipated could be cared for by a nurse of the RPN designation (CNO, 2018B).
3. Risk of negative outcomes: the greater risk of a negative outcome related to a patient's condition, the more likely a patient will require a nurse of the RN designation (CNO, 2018B).

Some research has identified poorer outcomes in patients when the staffing mixed increased the number of RPN levels (Glance, Dick, Osler et al., 2012). The consensus in the research is that there is a direct link between RN staffing levels and patient outcomes. Despite this scientific results, the *Acts* in Ontario and Canada as a whole are silent on the allocation of skill mix within hospitals.

The Failure of Legislation - Lessons learned from COVID-19

Amid a worldwide pandemic, we are presented with an interesting opportunity to view the stability and strength of our healthcare system and its enabling regulations. Nothing can be starker than the noted failure of these regulations with respect to LTC facilities in Canada and particularly in Ontario.

As of December 2020, there have been over 3,000 COVID-19 related deaths in Ontario, with about 81% of these deaths occurring in LTC facilities (Grant, 2020). Furthermore, there have been more than 840 outbreaks in LTC homes and retirement homes (CIHI, 2020B). While Canada has relatively low COVID-19 mortality rates when compared to other OECD countries, Canada's LTC home-related deaths were higher at 81% than other OECD

nations with an average of 38% of deaths (CIHI, 2020B). There is a significant difference between Canadian provinces, with no reported LTC homes deaths in Newfoundland and Labrador, Prince Edward Island and New Brunswick as of May 25th, 2020 whereas Quebec reports 70% of COVID-19 related deaths occurring in their nursing homes, Ontario 81% and Alberta 97% (CIHI, 2020B).

Evidently, both Federal and Provincial Governments' lack of regulations and statutes addressing minimum safe nursing complements has directly contributed to the astronomical number of deaths of seniors residing in LTC facilities. This is even more apparent in the legislation regulating LTC homes in the province of Ontario, *The LTC Homes Act*. The *Act* sets the minimum standards of care and rules for the operations of a nursing home.

This is also the only *Act* that makes any mention of mandatory skill mixes and safe patient complements. Section 8(3) of this *Act* requires LTC facilities to employ at least one registered nurse who must always be on site, irrespective of the size of the nursing home, not the number of residents in it. This is extremely concerning as nursing homes can range from having as few as 20 residents to as much as 200 residents. The *Act* does not differentiate between nursing homes RN complement. Essentially, a home can have an infinite number of residents and, so much as they provide at least one registered nurse, they have met their obligations of "safe" nursing complements under the *Act*.

However, section 8(1) of the *Act* requires that a facility must ensure that there is:

- (a) an organized program of nursing services for the home to meet the assessed needs of the residents; and
- (b) an organized program of personal support services for the home to meet the assessed needs of the residents.

This highly subjective element of the *Act* has led facilities to employ situations that are highly unsafe for nurses and patients. The legislation is not only to blame for this, the funding scheme for LTC facilities is highly complex, relies extensively on documentation and generally is insufficient to meet the needs of the residents of the home (Ministry of Long Term Care, 2020). These conditions have impacted the labour supply for these homes, as staff attraction and retention continues to be a major issue for long term care homes (Ministry of Long Term Care, 2020). LTC homes continue to be put in a position where they must work with shortages of both regulated and unregulated care providers (Ministry of Long Term Care, 2020).

However, what is arguably even more concerning is that under section 45(1) of the general regulations of the *Long-Term Care Homes Act*, O Reg 79/10, exceptions are made to which registered nurses may be allowed to not

be on-site. For example, if a home has 64 or fewer beds, a registered nurse may be permitted to work from home in a situation where no registered nurse is available to be on-site and the regulations only require that they be available by telephone. If the home has between 64 beds and 129 beds, the same provision applies; however, with the addition that a registered practical nurse (RPN) must be available on-site at all times.

This becomes disturbing because even before the COVID-19 pandemic, long term care facilities in Ontario have been increasingly seeing an influx of residents with complex and difficult medical needs (Ng, Lane, Tanuseputo et al., 2020). In one Ontario based study, the researchers found that the proportion of individuals aged 85 and older increased from 45.1% to 53.8% in 2019 (Ng, Lane, Tanuseputo et al., 2020). The proportion of individuals with seven or more chronic conditions rose from 14.1% to 22.1% (Ng, Lane, Tanuseputo et al., 2020), and the proportion of those with 9 or more prescriptions rose from 44.9% to 64.2% (Ng, Lane, Tanuseputo et al., 2020). A final finding of this study was that residents who were newly admitted were more likely to have extensive physical and cognitive impairments on their admission into a care facility with at least five comorbid conditions, and one in five have at least seven or more comorbid conditions (Ng, Lane, Tanuseputo et al., 2020).

Despite patients with increasing clinical complexity falling within the scope of registered nurses, the legislation that enables LTC homes to operate does not reflect demand in their staffing mix. One Ontario based study concluded that the majority of direct care provided in long term care homes (76.5%) was provided by unregulated care providers. However, this study also found an association between the number of care hours delivered to residents and the resident's quality of care. Furthermore, the quality of care was enhanced when care providers had attained at least seven or more years of experience (Boscort et al., 2018).

In a Ministry of LTC's staffing study of LTC facilities, it was noted a deficit of unregulated care providers or personal support workers (PSWs), shortage rampant across the province (Glance et al., 2012). In their conclusion, Boscort and colleagues (2018), state:

Associations between LTC staffing characteristics and overall quality of care were found for [PSW] care hours and [PSW] years of experience in the current LTC home. This study highlighted the importance of employing and retaining [PSW]s as they contribute to the quality of care in LTC homes.

However, the shortage of both regulated and unregulated care providers for LTC homes in Ontario has only amplified the crisis we have seen evolve amidst the COVID-19 pandemic and has served as a catalyst to augment an already tempestuous situation. The crisis has been so stark that Quebec had to request military personnel to assist in their LTC homes due to

insufficient availability of staff (Aiello, 2020) and many homes in Ontario had to rely on healthcare professionals being donated from various healthcare institutions and hospitals from around the province (Artuso, 2020). This crisis shows that staffing practices employed by LTC homes have been unsustainable and insufficient to buffer against any type of external stressor. Interestingly, the deaths in LTC homes observed in other countries and even Canadian provinces reflect dramatic differences in the legislation of prescribed staffing. For example, Austria has seen roughly 19% of COVID-19 deaths in their LTC homes (CIHI 2020). While some provincial variations apply in Austria, the minimum standard for LTC staffing is 1 full time equivalent (FTE) staff per 4 residents (on the high end) to 1 FTE per 1.9 residents (on the low end) (European Network of Economic Policy Research Institute, 2010). This is a far more robust mandate than any of the Canadian provincial statutes takes in provisioning staffing services within LTC homes. Australia had 28% of their deaths happening in LTC homes (CIHI, 2020). However, Australia's *Aged Care Act* 1997 is vague and ambiguous about prescribing staffing levels within LTC homes (except for Victoria that has mandatory ratios). According to 41-3 of the *Act*, the stipulation is that homes are to provide:

“...appropriate staffing to meet the nursing and personal care needs of the person”

In a study done by the Australian Nursing and Midwifery Federation, it was found that, on average, a resident of an LTC facility in Australia received 2.84 hours of care/day by nurses, care workers and therapy staff. However, this was the average with 2.5 hours for the lowest and 5 hours for the highest (Australian Nursing & Midwifery Federation, 2016).

In Ontario, as of 2018, each resident got an average of 2.3 personal care hours, 1.03 nursing hours and 0.4 allied health programming (Australian Nursing & Midwifery Federation, 2016). This is similar to the Australian situation and thus, Australia's mitigation of COVID-19 deaths is likely attributable to their prompt response and implementation of pandemic plans (McKenna, 2020).

Quebec has seen the most deaths count from COVID-19 in LTC homes (CIHI, 2020), having also little to no provisions under their regulations and being completely silent on staffing provisions for private homes and public homes. However, way before COVID-19, Quebec's minister Marguerite Blais had announced that the government would assemble a committee of experts to draft a policy on LTC facilities. Yet, it is still unforeseeable as to whether or not this will be adopted into substantive law (Derfel, 2019) or how COVID-19 will change this trajectory.

Further in eastern Canada, in New Brunswick legislation, the regulations under the *Nursing Homes Act* NB Reg 85-187 section 18, stipulates:

An operator shall ensure that:

- a) in nursing homes with thirty beds or more, the care of each resident is carried out by or under the supervision of a registered nurse as directed by the attending physician, or as directed by a nurse practitioner
- b) in nursing homes with thirty beds or more, at least one registered nurse is on duty on the premises at all times,
- c) in addition to the registered nurse referred to in paragraph (a), care staff is in attendance at all times in appropriate ratios, and
- d) a comprehensive care plan is developed for each resident upon admission, reviewed at least annually and evaluated on an ongoing basis.

This regulation makes no exceptions to the rule of having the care provided to residents directed under the supervision of a registered nurse. However, the latitude allowed in Ontario and other provincial regulations has created a culture of blatant disregard for people's safety, injury and error prevention.

For example, in one labour arbitration case between the Ontario Nurses Association (ONA) and an LTC home, in one year the home had disregarded these regulations 11 times when they failed to have a registered nurse on-site in a home with 129 beds or more (*Shepherd Village Inc v Ontario Nurses' Association*, 2013 CanLII 31735 (ON LA)). What is also concerning is that, despite these breaches of statutes, LTC homes are not held accountable for their breach. In the same labour arbitration case, despite finding the LTC home in breach of the regulations, the arbitrator held:

The employer in this case had a 99% compliance rate in 2012. With the same complement of nurses in 2013, it is quite possible it will be up to 100%. There is thus no obligation on the employer to add more nurses. In the event of any further deficiency with the same complement, the union members would be entitled to compensation if one or more of them could point to a loss resulting from the deficiency, but, failing that, the only remedy would be a declaration that the employer had violated the agreement.

Essentially, the precedent that this arbitration case set is that it is okay to breach regulations sometimes, provided that most times you fulfill them. The fallacy of this presumption is demonstrated if we simply change the statute that was violated by the *LTC homes Act* to the *Criminal Code*. Would the arbitrator's argument raise questions of scrutiny if we were to say "it is okay that you committed 11 criminal acts because 99% of the time you weren't committing any criminal acts". It is shocking to see the latitude that is

permitted with breaches of regulations that are intended to preserve the safety and integrity of a vulnerable population.

In another labour arbitration case between ONA and another LTC home, an issue arose with the home wishing to cut the hours staffed by registered nurses in a 166 bed, non-profit home (*Kawartha Lakes (City) c Ontario Nurses' Association*, 2015 CanLII 44015 (ON LA)). While the parties were able to agree outside of arbitration on how to interpret this, the arbitrator had this to say, at para 13:

We have carefully reviewed and considered the parties submissions. In making our award to resolve the outstanding issues, we are guided by the legislative criteria set out in [*Hospital Labour Disputes Arbitration Act, RSO 1990, c. H.14*], which includes the following:

- The employer's ability to pay in light of its fiscal situation;
- The extent to which services may have to be reduced, in light of the decision or award, if current funding and taxation levels are not increased;
- The economic situation in Ontario and in the municipality where the employer is located;
- A comparison, as between the employees and other comparable employees in the public and private sectors, of the terms and conditions of employment and the nature of the work, performed;
- The employer's ability to attract and retain qualified employees.

This arbitration, in conjunction with a reading of the *Hospital Labour Disputes Arbitration Act*. RSO 1990, c.H.14 demonstrates a problem seemingly systemic in Ontario: a lack of willingness for the province to enforce safety within healthcare institutions. On one hand, Ontario attempts to provide for patient and healthcare safety with the enactment of regulations; however, on the other hand, Ontario has enacted regulations that permit exceptions to these safety requirements and has also enacted legislation that forces arbitration boards to give deference in light of fiscal and economic conditions. Essentially, Ontario chooses to underfund services, set unrealistic expectations and then permit these unrealistic expectations to be violated because it underfunds such services.

This is also apparent in the arbitration case of *Westmount Long Term Care Residence v Ontario Nurses' Association* [2016] OLAA No. 242, in which an LTC home intended to reduce RN hours owing to fiscal restraints. Westmount consisted of 3 LTC homes with greater than 120 beds in each of the homes. In this case, the LTC home anticipated a 3% increase in funding from the Ministry of Health and LTC; however, they only received a 1% increase in funding. As a result of this shortfall in funding, the LTC home decided to reduce the weekly RN hours available to accommodate the

budgetary shortfall. An interesting note of this case consists of the arbitrator's comments at para 156 - 157 when he writes:

Having regard to all the evidence, it is apparent that RNs are best equipped to provide the highest quality care to nursing home residents. RNs are the most qualified of the health care providers employed by nursing homes. The presence of an RN at a nursing home is essential for the safety and security of residents. This is because for the most part, nursing home residents are frail, vulnerable and constantly require various forms of care.

There is no doubt that frailness and vulnerability varies from resident to resident. It is also fair to say that stability also varies from resident to resident. Some residents have cognitive impairment issues, while others have physical impairment issues. Some residents have both cognitive and physical impairment issues. In all cases, the residents require some form of care and assistance from the various nursing staff.

The decision to remove RNs ultimately came as a result of the fact that the LTC home would need to cut either RN hours or PSW hours and a reduction of PSW hours would end up further impairing and reducing the number of direct care hours the residents of the home would receive. The ultimate justification came from the fact that there would be at least one RN available to consult with the RPNs available on site. Ultimately, this meant that one RN would be responsible for more than 120 residents, yet the arbitrator agreed to this in light of the fiscal restraints of the homes.

This disconnect cannot only be resolved at the legislative level, it needs to be resolved both legislatively and economically, with the more realistic appropriation of funds and resources to institutions to meet their legislative requirements.

A Long-Standing Systemic Problem

According to the Canadian Institute for Health Information (CIHI), it is estimated that the cost of healthcare was roughly 11.6% of Canada's GDP (CIHI, 2019D), about CAD 1.64-trillion in 2019 (Statista, 2020). That equates to approximately CAD 264-billion of healthcare spending (CIHI, 2019D). Of this, 27% of spending was attributed to hospitals, 15% to physician compensation and 15% to drugs (CIHI, 2019D). Of the hospital spending, 63.7% was spent on compensation of all staff (CIHI, 2020C). Further, of that 63.7%, Nursing salaries accounted for 19.2% (CIHI, 2020C). This calculation would equate to nursing comprising 5% of healthcare spending in Canada. Healthcare spending is highest on seniors, representing around \$20,793 for those age 80 and older (CIHI, 2020C). However, the ageing population only 'modestly' increases the healthcare expenditure at roughly 1% per year (CIHI, 2020C). However, the cost of paying physicians has exceeded growth in all other areas, at a 3.5% increase in cost vs 1.8% increase in drug expenses and

2% growth in the cost of hospitals (CIHI, 2019D). A breakdown of some of the costs Canadians spend on healthcare is summarized in the chart below. The data has been calculated based on available information from the Canadian Institute for Health Information (CIHI)'s healthcare spending report (CIHI, 2019D).

Repatriation of Health Care cost by providers and incidents per person in Canada

<i>Cost</i>	<i>Total Cost</i>	<i>Cost Per Canadian Person</i>	<i>% of Healthcare Spending</i>
Physicians	\$28.53 Billion	\$758.98	15%
Nurses	\$13.2 Billion	\$351.16	5%
Drugs	\$28.53 Billion	\$758.98	15%
Residents in LTC	\$9.8 Billion	\$260.71	3.71%
Hospitals (excluding nurse services)	\$58.1 Billion	\$1,332.81	22%
Preventable Errors	\$685 Million	\$18.22	1%

Despite this cost and the growing cost considering inflation, the cost of physicians continues to increase with frequent raises in physician payments. For example, between 2018 and 2019, physicians were provided with a compensation increase of 1.25% on their billable services (Ministry of Health and Long-Term Care Ontario, 2020). As previously mentioned, the increase in the cost of physicians has exceeded inflation, namely by 3.5% (CIHI, 2019D). Furthermore, Ontario is not transparent about what physicians are billing the Ontario Health Insurance Plan (OHIP) and the allocation of funding to physicians (Draaisma, 2016). However, other provinces such as B.C. do list physicians' income/compensation/salaries. In one article by the Vancouver Sun, it was found that the national average of physician salaries in Canada was \$338,605 while the average in British Columbia was \$279,986 (Fayerman, 2016). The national average for physicians is just over 6 times the average provincial income in all of the provinces in Canada (Dodge, 2019). In the USA, according to the Medscape Physician Compensation Report, the national average salary of primary care physicians was USD 237,000 and it was USD 341,000 for specialists.

The issue with these rising Canadian salaries for physicians comes from the fact that physicians in Canada are remunerated based on billable services. When a patient meets a physician, each of the services is itemized and billed to the Ontario Health Insurance Plan. The structure of this plan is set out in both the *Canada Health Act* and the *Ontario Health Insurance Act*. The Ministry of Health and LTC for Ontario has a schedule of benefits that itemizes the cost of all the billable services physicians can charge based on the *Ontario Health Insurance Act* regulations (available here:

http://www.health.gov.on.ca/en/pro/programs/ohip/sob/physerv/sob_master20200306.pdf). For example, a non-emergency consultation in a hospital will cost the province approximately \$167.35. Consultation in a LTC facility will cost the province approximately \$203.30. While the policy statement outlines some requirements of consultation and ways to classify the complexity of a consultation, it is highly subjective. The regulations fail to specify why a consultation in an LTC home is worth \$203.30, yet a general consultation in a hospital is worth only \$167.35. This could create a potentially pathological incentive for physicians to work in more lucrative areas and extend themselves to provide services beyond what they can safely provide, creating an unbalanced situation of quantity over quality (Hewak & Kovacs-Litman, 2015). The concern about this method of charging the province is only augmented by the lack of transparency in the billing. A patient in Ontario is never provided with an itemized bill of what their physician is charging the province. And should a patient ask for such information, they would be looked at in dismay, and ultimately have such requests denied. Hospitals are not equipped to provide patients with this basic information and, to the general public, why would they care?

But in fact, they should care, because physicians have a track record of ‘over-billing’ for services they either have not performed, did not adequately perform or had someone else perform (i.e. the nurse, nurse practitioner or physician assistant). There is no shortage of criminal (See e.g. *R v Gupta*, 2007 CanLII 51705 (ON) and disciplinary action by way of the College of Physicians and Surgeons of Ontario (See e.g. *Ontario (College of Physicians and Surgeons of Ontario) v Michael*, 2020 ONCPSD 43 (CanLII)) in which physicians are found guilty of defrauding the Ontario Health Insurance Plan (OHIP). Furthermore, the province seems completely unprepared to handle these fraudulent claims as it takes, on average, 6 years before they are discovered. However, the province only has itself to blame. It has created a system that is, essentially, easy to defraud and permits physicians to shun accountability, while leaving the population in poor health despite its price tag.

Additionally, the regulations are illogical inasmuch as they are formulated in a way that ‘forgets’ that nurses also provide care, while on salary, usually by the hour. For example, the guide says this about remuneration for intensive care patients (Ministry of Health and Long term Care Ontario, 2020B):

“Critical Care is the service rendered by a physician for providing, in an Intensive Care Area, all aspects of care of a critically ill patient excluding ventilatory support and includes initial consultation and assessment, emergency resuscitation, intravenous lines, cutdowns, intraosseous infusion, pressure infusion sets and pharmacological agents, insertion of arterial, C.V.P.

or urinary catheters and nasogastric intubation with or without anesthesia, securing and interpretation of laboratory tests, oximetry, transcutaneous blood gases, and intracranial pressure monitoring interpretation and assessment when indicated (excluding insertion of I.C.P. measuring device). Except when a patient is on a ventilator, these fees are not payable for services rendered to stabilized patients in I.C.U.s, or patients admitted for ECG monitoring or observation alone. If the patient has been transferred from comprehensive care to critical care, the day of the transfer shall be deemed for payment purposes to be the second day of critical care.”

The regulations permit physicians to charge \$223.10 for the first day and then \$146.45 per day, for these services for up to 30 days. After 30 days, the fee decreases to \$58.60 per day (Ministry of Health and Long term Care Ontario, 2020B). The problem is that many of these services are provided by critical care nurses. Many of the monitoring functions are performed by nurses and thus, a physician may only actually ‘do something’ once a nurse notices a deviation or change in the condition that requires a physician to intervene. This way, a physician can still charge for services they are not rendering. And the province is double-paying. They are paying the physician and they are paying the nurse to essentially do the same function.

If we are to combat the situation of ‘double billing’, fraudulent billing and arbitrary costs of services, we need to overhaul how physicians are remunerated. Instead of exhausting funds in the pursuit of physician remuneration, funds need to be allocated in a way that improves the capacity of the healthcare system as a whole and improves the safety of patients.

Ideally, the fee for service model employed by Canada would be completely abandoned. This model is not sustainable and, because of it consisting of 15% of our health spending, it is expensive. We need to allocate funds in a way that maximizes patient safety and quality improvement but is still equitable for those responsible for its delivery (i.e. physicians and/or nurses). To do this, we need to stop with variable payments and fee-for-service allocated to physicians and adopt a salaried approach. Research supports this approach, one study found that doctors operating under salary with less variability in their payment scheme were able to accept more complex patients, including Indigenous and patients from lower socioeconomic classes (Devlin & Sarma, 2008). Research also shows that when the fee for services is abandoned and the rigidity of payment schemes loosened, physicians were more likely to spend more time with their patients (Dumont, Fortin, Jacquemet & Shearer, 2008).

This problem is soundly discussed in an article by Grant and Hurley (2013) when they write in their executive summary:

Since 2000, the gap between what the average physician makes, and what the average fully employed Canadian worker earns, has diverged like

never before. In the last decade, the average doctor went from earning three-and-a-half times the average Canadian worker's salary, to earning nearly four-and-a-half times as much, a more than 25 per cent relative increase. In constant dollars, today's average Canadian physician is earning about 30 per cent more than he or she was just a decade ago. All of this has occurred while physicians have actually provided slightly fewer services to patients.

The authors continue:

There are signs that this may have finally gone too far: Ontario was recently able to freeze remuneration for doctors in a negotiated contract deal and Alberta shortly after imposed a unilateral settlement on its doctors after breaking off negotiations. Stories about "millionaire doctors" are now proliferating in the mainstream media and, as provinces across the countries struggle with deficits, the public's sympathy appears to be shifting.

Physicians in the Canadian health-care system are entrusted with a special and protected role, and it behooves medical associations to bear in mind their additional responsibility to promote public health-care objectives. The current collective bargaining model has resulted in provinces pressured into buying healthcare peace by agreeing to continually ratchet up doctors' pay. It is difficult to see how that can continue. It is time that doctors began working with policy-makers on a new model, one that puts less emphasis on profiting doctors, and more emphasis on promoting a sustainable health-care system for everyone.

There has been a general and unsubstantiated fear that even so much as looking at the salaries of physicians skeptically will suddenly lead to a nation-wide exodus of physicians to the USA, as we have seen in the 90s when the government decreased medical school seats by 10% (Belluz, 2012). However, this fear is just not based on evidence. The supply of physicians is currently at an all-time high in Canada (Belluz, 2012) and the USA is not in a position to accept, or even need, a massive surplus of Canadian trained physicians. But what can happen if we continue to stack the deck in favour of physicians, is see a massive exodus of the very disciplines that are giving up their half of the pie in favour of physicians. Those being nurses and other ancillary and allied healthcare professionals. This has already been the case for nurses in the 90s and, even today, we continue to see a great number of nurses going to the USA. In fact, in 2003 there were approximately 5,366 Canadian RNs that were working internationally, with 81.5% of those, working in the USA (Little, 2007).

Furthermore, this favouring of medicine over other professions and over improving the quality of care, in general, is not translating into quality care, as we have seen from Canada's OECD statistics. Other countries that take a more equitable approach to physician remuneration (such as Australia and even the USA) outperform Canada in many indicators. Furthermore, the

fact that Canada falls below the international average in almost all safety indicators in and of itself is telling.

Let's be clear and without advocating towards cutting physician compensation. Equity in remuneration based on skill, experience, education, professional attainment and remuneration based on performance (this area is where we are lacking as a country), is generally foundational to capitalist societies, of which Canada is one. Thus, physicians should rightly be paid what they are worth in the grand scheme of things and how they perform (based on quality indicators, perhaps related to the health of our population). One does not need to reinvent the wheel; one simply needs to adopt the policies and remuneration styles that prove successful in other countries.

Currently, Canada operates more of an autocratic style healthcare system (with ultimate control granted to the government) that works inequitably to favour the elites (physicians) at the expense of not only other disciplines but also at the expense of Canadian citizens (both in terms of the taxes they pay and the value they receive). Restructuring physician compensation and healthcare control to be more like in Europe, Australia and even the USA seems to have, at least in research studies, an ability to improve quality outcomes for patients. But the overarching goal that needs to be accomplished is a reduction in the spending burden to allocate funding to other areas that need it more, such as in the provision of medical and nursing services to those in LTC homes. Healthcare needs to be viewed as a service rather than a business or a for-profit undertaking.

Conclusion

Long term care in Canada and healthcare needs a reset. The current model of spending and regulating is unsustainable. With healthcare in Ontario alone costing more than \$60-billion, the current modus operandi of, at the very least, Ontario's healthcare sector is unsustainable. Comparisons with other countries' healthcare systems are useful and may help in redesigning our own. It is insufficient to take a bottom-up approach in this situation. It is not sufficient to place the burden on the LTC facilities and healthcare institutions to reform themselves in a way that will enhance patient safety. Rather, this change needs to start from the top by amending the very legislation that has enabled their existence within the province.

The provincial government needs to mandate safe nursing complements within Ontario. They also need to overhaul their funding scheme in a manner that permits LTC facilities to meet such safe staffing requirements. It borders on negligence for the province to allow exceptions within their legislation that permit LTC facilities to operate in conditions that are completely unsafe and inadequate to meet the needs of the community it

serves. In the face of COVID-19, the provinces' failure and inadequacy has been broadcasted for all the world to see.

While the government has attempted to evade liability for any harm it inflicts by its policy decisions during COVID-19 (see e.g. *Bill 218 Supporting Ontario's Recovery and Municipal Elections Act*, 2020), harm that has been caused to residents of LTC homes in Ontario is not a result of the government's COVID-19 policy decisions. These provisions have been in force long before COVID-19 and have been jeopardizing the safety of LTC residents for years. However, it took a pandemic for the world to finally see the fragility and vulnerability of this house of cards the province has built for its seniors.

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ESJ Social Sciences

The Impact of Exchange Rate on Ethiopia's Coffee Export

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Abstract

Although coffee constitutes the largest share of exports, producers in Ethiopia have historically received a small percentage of the export revenue from the price of green coffee. Reasons often mentioned are heavy government intervention and high marketing and processing costs. Before 1992, government regulation of the domestic coffee market in the form of fixed producer prices and the Ethiopian Coffee Marketing Corporation's monopoly power put a substantial wedge between the producer price and the world price of coffee by imposing an implicit tax on producers. Having liberalized the market and adopted a floating exchange rate regime to boost exports (coffee) as the country struggles with foreign exchange shortages, not much has improved in exports (coffee) or foreign reserve availability. This paper utilizes monthly data from 2010-2015 to develop a multiple regression model to determine the impact the exchange rate has on coffee export if there is any. The empirical findings indicate that the exchange rate is not significant in determining or influencing exports but the prices of the two famous coffee types (Arabica and Robusta). Corroborated by the research outcome, we suggest that policymakers do not rely on the depreciation or devaluation of the ETB (Ethiopian Birr) as a tool for export promotion and growth.

Keywords: Coffee exports, Currency depreciation, Arabica price, Robusta price

Introduction

Ethiopia is the birthplace or the origin of the coffee plant and culture. More so, it is known to have the best coffee more than that from Italy or Columbia. Coffee production has been a longstanding tradition in Ethiopia, which dates back to dozens of centuries ago. The central coffee plants produced here include coffee Arabica and Robusta. As the geographic origin of Arabica type of coffee, the nation exports a substantial amount of coffee where exports in 2010 reached 3.3 million 60-kilogram bags (Petit, 2007). Thus, it is the heartbeat of Ethiopia's agricultural economy. Ethiopia is among the world's largest coffee growers and producers, at number five, and the largest in Africa, producing about three to five percent of the world's coffee every year. Today, over 12 million individuals in the country rely on the coffee industry for their livelihood and growth. The internationally adored beverage has grown to be a vital part of Ethiopia's culture (Goodwin, 2020). Nevertheless, it is appropriate to say that, regardless of the high sales of coffee, various drivers or factors highly affect Ethiopia's coffee exports.

Ethiopia is known to be the birthplace of coffee. The legend has it that the country's nomadic mountain tribes discovered the plant and beans and their stimulating effect in the 9th century (Degaga, 2020). The commercialization of coffee beans started in the 1950s when the Ethiopian government established a system for grading and classifying coffee and later developed the National Coffee Board of Ethiopia (NCBE) to help the farmers sell and export coffee provided opportunities for individuals to develop and grow (Yassin, 2020). It is their primary source of income for many Ethiopian citizens. Fortunately, coffee movements and cooperatives like Sidama Coffee Farmers' Cooperative Union (SCFCU) help small-scale farmers to sell their products. Apart from the massive government-run coffee estates, about 98% of the nation's product is cultivated by small landowners (Mugwe, 2014). Coffee is grown in Ethiopia's four regions, including Sidamo, Harrar, Ghimbi, and Limu, were farmers major in farming coffee. Here, it is crucial to add that Ethiopia boasts producing and exporting various blends and brands ranked among the best coffees globally. These coffees include Yirdgacheffe, Ethiopian Harrar, Ethiopian Sidamo, Ethiopian Limu, Djimmah Coffee, and Lekempti (Degaga, 2020).

Problem Statement:

Coffee is Ethiopia's most prominent export crop making it central to its economy (Petit, 2020), where it contributes to 60 % of Ethiopia's foreign export income. However, this percentage has been on the decline, a change caused by various issues experienced by the coffee export sector. Over the past few decades, the country has also experienced increased political turbulence, leading to dissatisfaction and unrest and threatened its coffee industry.

Numerous environmental, economic and social issues affect the country, wavering the coffee farmers' confidence and dedication to cultivating coffee. This may also affect the quality and quantity of coffee production.

The Ethiopian coffee sales are highly dependent on international prices and are profoundly affected by the current world coffee market. Nevertheless, the global coffee market has changed drastically in the last few decades. Changes in the worldwide policy environment, technological changes, new arrangements in supply chain and demand, and the asymmetrical character of power in the coffee value chain increasingly reduce the opportunities for vulnerable and growing economies to secure the benefits experienced through feasible coffee trade (Petit, 2007). Reliable coffee markets in developing countries such as Ethiopia support poverty reduction and economic development. These factors, in addition to consumer or social behavior, productivity, inflation, currency exchange rates, and demand, greatly influence the market and export of Ethiopian coffee.

Before 1992, government regulation of the domestic coffee market in the form of fixed producer prices and the Ethiopian Coffee Marketing Corporation's monopoly power put a substantial wedge between the producer price and the world price of coffee by imposing an implicit tax on producers (Amamo, 2014). Having liberalized the market and adopted a floating exchange rate regime to boost coffee exports as the country struggles with foreign exchange shortages, not much has improved in exports (coffee) or foreign reserve availability. The problem is that it is unclear how exchange rates usually affect coffee exports in Ethiopia. Various factors or determinants for coffee exports are explored in the literature review. However, this research aims to examine if exchange rates usually influence or affect Ethiopia's coffee exports, either by increasing or reducing the export ratios.

Impact of Exchange Rates

Ethiopia has experienced liberalization, incorporating essential changes in both the nominal and real exchange rates. According to Wondemu and Potts (2016), exports in Ethiopia have increased more than the GDP, illustrating that exports contribute and lead to the growth of an economy and a nation entirely. The study thoroughly explored how the real exchange rate affects export performance and suggests that the country should maintain highly competitive real exchange rates to improve its export performance and diversify its exportable. Wondemu and Potts (2016) illustrate overvaluation as harmful, while undervaluation of real exchange rate enhances export supply and diversification. Thus, a high percentage of growth in exports is connected to periods of undervalued currencies. More importantly, it suggests that the difference in export performance between Ethiopia and other countries is profoundly influenced by differences in real exchange rate policies in specific

countries. Based on these findings, real exchange rates in Ethiopia could impact coffee exports in Ethiopia.

Mulneh (2018) also evaluated the impact of exchange rate volatility on Ethiopian coffee export. It employed annual time series data obtained from the nation's different institutions, including the Ministry of Finance and economic development (MOFED), National Bank of Ethiopia (NBE) Ethiopian Custom Authority (ECA). It used a Bounds testing and Auto aggressive Distributed Lag (ARDL) model to develop a long-term relationship between exchange rate volatility and coffee export in Ethiopia. Mulneh (2018) illustrates that coffee exports in the nation have a negative but crucial relationship with exchange rate volatility. On the contrary, trade openness and real effective exchange rate positively and significantly influence coffee exports. The impacts of exchange rates on coffee exports in Ethiopia are further to be studied in this research.

Nevertheless, Mulneh et al. (2018) recommend policymakers in Ethiopia retain a well-managed, stable, and effective exchange rate regime to increase exports and attract more foreign direct investments. Mulneh's findings are similar to those obtained by Mehare and Edriss (2013), which explored the effects of exchange rate variability and gross domestic product on Ethiopia's main export crop, coffee. It found that exchange rate variability has negative impacts on coffee exports in the short-term but has insignificant effects in the long-term. This means that exchange rate changes in the nation favor coffee export performance, but this is yet to be verified in this research.

Exchange rate policies are crucial for the economic performance of countries. Tamru, Minten, and Swinnen (2021) state that countries that have successfully export agricultural products usually avoid overvaluation of their currencies as more competitive exchange rates result in enhanced external balances. Misalignment of exchange countries in countries such as Ethiopia leads to distortions to agricultural incentives, often at the expense of export agriculture, leading to fewer benefits, significantly if the exchange rates influence market conditions. The research suggests that better exchange rate alignment via the standard prescription enhances external balances and incentivize export agriculture. Nevertheless, Tamru, Minten, and Swinnen (2021) believe that coffee exporters are willing to take losses while exporting the product by offering high prices for the product locally to attract foreign exchange markets. This would help increase coffee prices and the profits gained by the farmers. As viewed from the previous literature, different research explores the determinants for coffee exports in Ethiopia. This research, however, aims to explore how exchange rates influence or affect coffee exports in Ethiopia.

1. Research Methodology:

1.1 Theoretical Framework

The theoretical framework of this study follows but not precisely investigating the Marshall-Lerner condition and the J-curve. While the theory addresses the response of the balance of trade to fluctuations in the exchange rate, this research narrowly investigates the impact of the exchange rate fluctuations on coffee exports with special focus on Ethiopia. The following derivations were obtained from Stern (1973). In that derivation, the author identified trade

$$B_f \equiv p_{fx}X - p_{fm}M \tag{1}$$

$$\Delta B_f \equiv (p_{fx}\Delta X + X\Delta p_{fx}) - (p_{fx}\Delta M + M\Delta p_{fx}) \tag{2}$$

$$V_{fx} \equiv p_{fx}X \dots\dots\dots \text{foreign value of exports} \tag{3}$$

$$V_{fx} \equiv p_{fx}M \dots\dots\dots \text{foreign value of imports} \tag{4}$$

balance in foreign currency term to follow the outlined definition:

$$\Delta B_f \equiv V_{fx} \left(\frac{\Delta X}{X} + \frac{\Delta p_{fx}}{p_{fx}} \right) + V_{fm} \left(\frac{\Delta M}{M} + \frac{\Delta p_{fm}}{p_{fm}} \right) \tag{5}$$

However, when a country devalued its domestic currency (currency depreciation), this leads to:

In line with the above, we continue to accommodate the value of export and import by defining

$$e_x \equiv \frac{\Delta X}{X} \bigg/ \frac{\Delta p_{fx}}{p_{fx}} = \text{home export supply elasticity} \tag{6}$$

each under the following conditions:

By rearranging and substituting the above equations into equation (2) we have:

$$\eta_x \equiv - \frac{\Delta X}{X} \bigg/ \frac{\Delta p_{fx}}{p_{fx}} = \text{foreign export demand elasticity} \tag{7}$$

$$e_m \equiv \frac{\Delta M}{M} \bigg/ \frac{\Delta p_{fm}}{p_{fm}} = \text{foreign import supply elasticity} \tag{8}$$

$$\eta_m \equiv \frac{\Delta M}{M} \bigg/ \frac{\Delta p_{fm}}{p_{fm}} = \text{home import demand elasticity} \tag{9}$$

From the above equation, we can then continue to invoke the elasticities of demand and supply of import and export. In this equation we apply the negative demand elasticities to allow us to have a positive equation as follows:

In the light of the above, it is expected that foreign currency and home currency should relate as a result of the ensuing exchange rate r and this will us to have:

$$P_{fm} \equiv P_{km}r \tag{10}$$

$$P_{fm} + \Delta P_{km} = (P_{km} + \Delta P_{km})r(1-k) \tag{11}$$

$$\Delta P_{fm} = (P_{km} + \Delta P_{km})r(1-k) - P_{km}r \tag{12}$$

$$\Delta P_{km} = P_{km}r - P_{km}rk + \Delta P_{km}rk - P_{km}r \tag{13}$$

$$\Delta P_{km} = -P_{km}r + \Delta P_{km}r - \Delta P_{km}rk \tag{14}$$

$$\frac{\Delta P_{fm}}{P_{fm}} = -k + \frac{\Delta P_{km}}{P_{km}}(1-k) \tag{15}$$

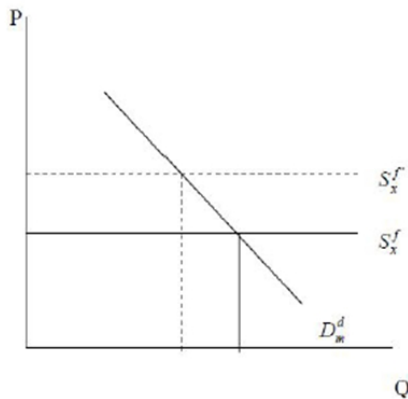
$$\frac{\Delta P_{fx}}{P_{fx}} = -k + \frac{\Delta P_{kx}}{P_{kx}}(1-k) \tag{16}$$

Next to the above, we assume home currency to be devaluated by a proportion of k , and this will make the home currency to be worth $r(1-k)$ unit of foreign currency, as a result of this development, the level of price changes can be seen as follows:

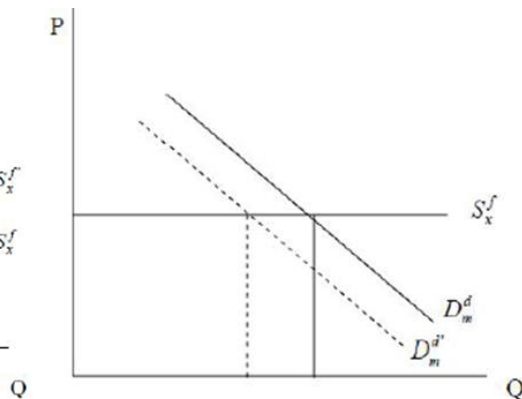
From our definition of elasticity and substituting equation (6)-(9) into equation (15)-(16) will allow us to have the following:

Figure 2. graphical representation of Marshall-Lerner conditions for domestic currency and foreign currency

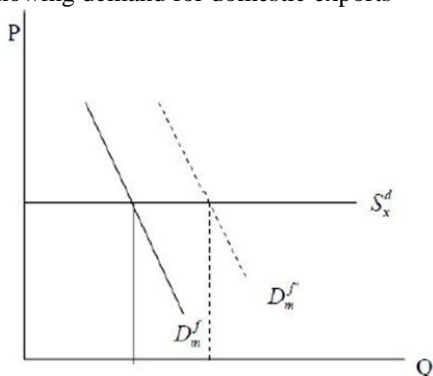
Showing domestic demand for imports



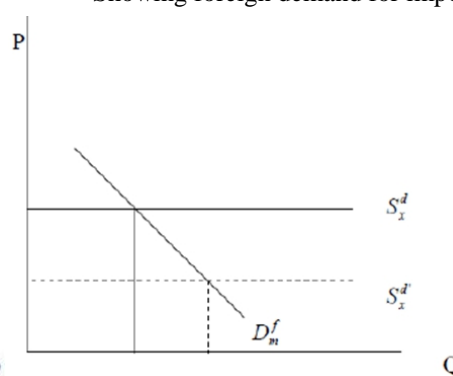
showing domestic demand for exports



Showing demand for domestic exports



Showing foreign demand for imports



1.2. Empirical Methodology

1.3. Data and Variables:

This paper uses monthly time series data for the period 2010-2015 and 1980-2017 obtained from the UN Comtrade database. The study utilizes data of coffee exports, bilateral exchange rate of the ETB (Ethiopian Birr against USD), international market prices of arabica and Robusta coffee.

The empirical analysis is derived from a final parsimonious model, selected through the iterative selection method also called general to specific method. The model uses coffee exports as the dependent variable and the exchange rate, market prices of Arabica and Robusta coffee as the regressors. The main regressor however, is the exchange rate as we set to investigate whether it is significant in determining the volume of coffee export.

1.4. Transformation and Study Hypothesis:

In order to eliminate trends and non-stationarity, the data is transformed by taking the natural the first difference of the variables. To ensure that the variables are stationary, we ran the Augmented Dicky-Fuller (ADF) test on the first difference at the 95 percent confidence level. The results of the ADF test produced t-statistics greater than the 5-percent critical value leading us to reject the null hypothesis of non-stationarity. This is an indication that the variables are integrated of the order I (1).

In addition to the ADF test, we conducted the Johansen test for cointegration to ascertain the right model specification and regression technique. Evaluating the outcome of the trace and max statistics at the 5-percent critical value, the Johansen test results suggest that the variables are not cointegrated. Having taken the first difference of the first variables, we ran the selection order criteria, we found no lag relationship among the variables allowing us to estimate the model by simple OLS method. Validated by the pre-estimation tests, we estimate a multiple linear regression model for import determination, in a forward selection method. The purpose of this empirical

study is to examine whether the exchange rate has a significant impact on the export of coffee. In other words, we try to answer the question whether the exchange rate is a significant determinant of the direction of coffee export?

The hypotheses are formulated around the primary variable of interest, the exchange rate.

Export model hypothesis:

H_0 : the ETB exchange rate has a significant impact on coffee exports (significant positive relationship)

H_1 : the ETB exchange rate has no significant impact on coffee exports is not causing exports to increase (negative or no significant relationship)

Source	SS	df	MS	Number of obs =	47
Model	6.5370e+15	3	2.1790e+15	F(3, 43) =	2.26
Residual	4.1395e+16	43	9.6267e+14	Prob > F =	0.0947
Total	4.7932e+16	46	1.0420e+15	R-squared =	0.1364
				Adj R-squared =	0.0761
				Root MSE =	3.1e+07

cofexval	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
dexrate	3713968	5692701	0.65	0.518	-7766457 1.52e+07
darabicapr	-2.73e+07	1.19e+07	-2.29	0.027	-5.13e+07 -3306878
drobustapr	8.16e+07	3.26e+07	2.50	0.016	1.58e+07 1.47e+08
_cons	7.43e+07	4602364	16.15	0.000	6.50e+07 8.36e+07

2. Results and Discussion:

$$Coff \text{ exp} = \beta_0 + \beta_1 \Delta e_{x_{rate}} + \beta_2 arabicapr + \beta_3 \Delta robustapr + \varepsilon$$

$$Coff \text{ exp} = \beta_0 + \beta_1 arabicapr + \beta_2 robustapr + \varepsilon$$

Source	SS	df	MS	Number of obs =	47
Model	6.1272e+15	2	3.0636e+15	F(2, 44) =	3.22
Residual	4.1805e+16	44	9.5010e+14	Prob > F =	0.0493
Total	4.7932e+16	46	1.0420e+15	R-squared =	0.1278
				Adj R-squared =	0.0882
				Root MSE =	3.1e+07

cofexval	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
darabicapr	-2.60e+07	1.16e+07	-2.23	0.031	-4.94e+07 -2494814
drobustapr	8.19e+07	3.24e+07	2.53	0.015	1.66e+07 1.47e+08
_cons	7.48e+07	4524724	16.52	0.000	6.56e+07 8.39e+07

Result Interpretation:

Following a general to a specific model selection process which is based mainly on the values of t and F-statistics, we decide on the final parsimonious model. The general regression output indicates that all the regressors are statistically significant and that the population parameters of β_2 and β_3

significantly different from zero except for the exchange rate variable (exrate), which, according to the statistic is not significant. Therefore, by the iterative selection process, we drop the exchange rate and re-run the regression. The resultant of the second regression produces a significant model relative to the first one. Citing the F and t-statistic values, the final model has an overall significance of 3 percent relative to the 2 percent of the first model, and significant predictors. In simpler expressions, this interpretation entails that the exchange rate has no impact in any degree to influence the direction of coffee exports. That is, regardless of how much the currency depreciates, it does not significantly lead to export growth or promotion. One explanation as provided in the literature review, is that, even though Ethiopia remains among the top coffee exporter, it follows Brazil and Vietnam who do not only produce the same type of coffee but are emerging market economies (Brazil). In addition, these countries may not have strong currencies against the US Dollar, making exchange rate policy ineffective to drive export growth.

Another important outcome indicated by the regression output worth taking note of, is the negative relationship between coffee exports and price of the arabica coffee type. Many factors could be responsible for this. Although the regression model is a multiple linear regression, there are still some factors omitted and included in the error term. One of the possible reasons for this negative relationship is the substitution effect. Given historical data, Arabica's price has slightly been higher than Robusta's price, even though the two differ in terms of quality and taste, and an increment in the price of Arabica from a top coffee exporting country, means an increment in price across the board. Holding the exchange rate and other factors constant, this may trigger an increase in demand for Robusta, it even worsens if the ETB (Ethiopian Birr) remains relatively stronger against other currencies of top coffee exporters.

Given the output of the regression analysis, we reject the null hypothesis that the exchange rate has a significant impact on the direction of coffee exports. Theoretically, it is an important determinant of coffee export, but it may just be those other complementary factors to make it more effective which are not captured in our model.

Discussion

Ethiopia is viewed as the birthplace of coffee and the origin of coffee culture. It is one of the largest coffee producers worldwide, falling in fifth after countries like Brazil and Vietnam. Considering that coffee sales mostly rely on exports to international markets and countries that do not engage in coffee production, it was imperative to conduct research investigating factors or issues that influence coffee exports. The study focused on exploring if exchange rates affect Ethiopian coffee exports. Previous literature presents Ethiopia as a nation that produces the best quality coffee globally.

Nevertheless, this does not guarantee a market for its product since other countries produce similar coffee types, especially Arabica.

Various factors influence coffee exports, including trade policies, access to international markets, export supply, demand, high transaction costs, actors and processes therein, price risks, productivity in the fields, quality control, and coffee smuggling occurrences. Nevertheless, while some studies found that currency exchange rates affect coffee exports in Ethiopia, this study found that exchange rates do not significantly affect coffee exports. These findings are similar to Gebreyesus's (2015) study outcomes which found that real exchange rates do not affect coffee exports both in the short- and long-term. In other words, the exchange rate has no impact or relevance in changing the direction of coffee exports in Ethiopia. Despite the changes in currency exchange rates, depreciation or appreciation, it does not impact or lead to coffee export growth or promotion.

Also, there is a negative relationship between coffee exports and the price of arabica coffee caused by various factors. One factor that could explain the negative relationship is the substitution effect. Arabica coffee has had the highest market price throughout time than Robusta, mainly because they differ in quality and taste. This means that if the price of Arabica in Ethiopia increases, the costs of other coffee types also increase. More importantly, the increment triggers an increase in demand for Robusta and other types of coffee. Nevertheless, no evidence shows that exchange rates between different currencies, including the Ethiopian Birr, the US Dollar, and the Euro, affect prices or the amount of coffee exported to other countries.

Therefore, as demonstrated in the outcome section, we derive that currency exchange rates do not influence Ethiopia's coffee exports. The exchange rate could be a crucial factor in the coffee market, with complementary factors making it more or less influential, but they are not explored in this research. While coffee remains Ethiopia's main export product, the government should try to make policies that promote social and consumer buying behaviors, increase productivity, and address inflation to increase market and export potential for Ethiopian coffee.

Conclusion

In recent years the country's dependence on coffee as the primary earner of foreign exchange has increased. This dependence has been evidenced by how government requires access to foreign exchange for its survival. Coffee is thus of fundamental importance in the Ethiopian case. This survival may take the form of enabling citizens to exercise preferences through being able to import capital and consumer goods from abroad; it may be through official servicing of past debt or the ability to take on new debts. More

bluntly, it may allow importing defense equipment that the government in power uses to control internal dissent.

Despite its positive strides in growth and economic development, the Ethiopian economy is still largely agriculturally dominated if environmental and climatic conditions remain relatively normal. This also means the chunk of its vast population depends on agriculture for their livelihood. Coffee is the largest component of the agricultural sector output and consequently the largest share of Ethiopia's export. While Ethiopia is a top exporting coffee country, it still faces competition from Brazil and Vietnam, which rank first and second. It produces and exports the same Arabica and Robusta types globally, which are the two leading dominant coffee brands.

Over the years, the government has adopted several different measures to promote export growth, especially coffee. This includes liberalization of the domestic coffee market by relinquishing government monopoly and devaluation of the currency at some point regardless of its gradual depreciation. In this paper, we investigated whether the depreciation of the ETB (increase in the ETB/USD) exchange rate negatively or positively impacts coffee exports. Our empirical evidence leads us to conclude that the exchange rate has no significant impact on the direction of coffee exports but the prices themselves.

Even though the government directs or leads the coffee market, coffee production in Ethiopia is still concentrated in small-scale scattered farmers who often find it difficult to attract good prices and increase profitability. Therefore, we suggest that the government increase its role in organizing and structuring coffee production, encouraging processing and value-adding, and distributing to international markets.

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Enhancing Tax Administration to Micro Businesses Through Digital Technology: An Exploratory Study in Dar Es Salaam, Tanzania

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Abstract

Many studies have shown the importance of Micro Businesses in widening the tax base. However, a practical approach regarding tax administration of micro businesses has so far never been explored. Additionally, information on the manner in which digital technology addresses challenges of tax administration in the Tanzanian context is limited. Therefore, this study explores the potentials of digital technology in enhancing tax administration of micro businesses. Specifically, the study looks at the current tax administration of micro businesses, the challenges thereon, and the existing potentials of technological solutions in enhancing tax administration of micro businesses. The study used mixed method research approach whereby qualitative and quantitative data were collected through interviews and questionnaires respectively. Interviews were conducted to 24 informants from Tanzania Revenue Authority and questionnaires were administered to 137 micro businesses in Dar Es Salaam, Tanzania. Thematic approach was used to analyse qualitative data and descriptive analysis was used for quantitative data. The study finding reveal that the current tax practices to micro

businesses do not comply with tax theories of low administration cost, wide tax base, and simple to administer tax procedures. Additionally, micro businesses face multiple levies, informal operations, and complexity of tax systems that make compliance to tax administration difficult. Moreover, this study established that mobile technology is potential for addressing the challenges. The study contributed to the practical aspect of tax administration that can guide policy makers, researchers and tax administrators in tax administration of micro businesses.

Keywords: Tax administration, digital technology, and micro businesses

Introduction

Micro businesses (MBs) are a form of informal businesses operating in high footfall areas such as markets, bus stands, road junctions and densely populated residential areas (Gomera & Oreku, 2018). MBs form the backbone of people's economies, as they comprise a substantial part of people's incomes in developing countries (Ferranti & Ody, 2007). In most African countries, MBs are directly linked to the development of national economies through self-employment and growth of Gross Domestic Production (GDP) (Ajmeru et al., 2013). Although MBs have a significant contribution to the people economies, they are still classified under the informal sector; and this has practical implication in respect to their inclusion or exclusion in budgeting and economic strategies of most developing economies. Taxation is one of the important areas where MBs are evidently excluded in the national budgets and economic strategies.

Active taxation systems are presumed to mobilize revenues from a wide tax base in order to reinforce government legality, achieve fair sharing of costs, and catalyse national development. The main administrator of tax systems in many countries is the revenue authority of the respective countries (Fjeldstad & Heggstad, 2011). Revenue authorities are expected to assist the government in raising revenues through collecting taxes from multitude of taxpayers to meet government expenditure in the provision of social services. Despite the fact that most revenue authorities strive to increase the tax base, the inclusion of MBs is often not considered as an option due to some inherent challenges.

In this respect, many studies (see for example, Gomera et al., 2019; Kapinga et al., 2019; Mramba et al., 2017) have advocated for the usage of digital technology in enhancing business activities of practitioners, in the informal sector, MBs inclusive. Mobile money services, mobile banking, mobile training, and digital marketing are examples of MBs' activities undertaken using digital technology. The use of digital technology in MBs has expanded from the level of transaction to the level of connectivity with

other formal institutions (Donner & Escobari, 2009; Deen-Swarray et al., 2013). Digital technology has also supported the government, private, formal, and informal operations. The technological solution brought about by digital technology is its ability to generate and disseminate information to users at anytime anywhere.

There are many studies that focused on the importance of MBs in the economy (Kibassa, 2012; Engelschalk, 2007), the importance of a broad tax base to tax administration systems (Coleman & Evans, 2003; m Kundt, 2017), and on the ability of digital technology to simplify operations among formal and informal practitioners (Lubua, 2014). However, there is limited information on *how* the Tanzania Revenue Authority (TRA) can benefit effectively from digital technology and include players such as MBs in the tax system. This study therefore explores the potential of using digital technology by TRA in enhancing tax administration of MBs. The study also explores the current practice of tax administration among Tanzanian MBs, the challenges tax administration face, and areas where digital technology can potentially be applied to address the challenges. The study is based on establishing digital technology solution of tackling the challenges facing direct tax administration of MBs. In addressing this goal, three specific research questions were addressed.

- *RQ1*: What are the current practices of tax administration by TRA to MBs?
- *RQ2*: What are the challenges limiting TRA in the administration of taxes to MBs?
- *RQ3*: What are the potential technological solutions to tax administration challenges facing MBs operations?

2. Literature Review

2.1 Informal operations within Micro businesses (MBs)

Informal business employs majority of the populations in many developing countries. This is despite the fact that such businesses fully or partially operate outside of the government regulation, and taxation system, and that they receive little attention if any from different government authorities (Ahmad et al., 1991; Ajmeru et al., 2013). However, informal businesses contribute substantially to the gross national products (GNP) in sub-Saharan Africa (Elly, 2017). In developing countries, majority of the population are employed in the informal sector, which is characterised by Micro Business (MB) activities (Coleman & Evans, 2003). For example, Tanzania is one of the African largest informal economies engaging 57.9 percent of the working age (Fjeldstad and Heggstad 2011). Micro Businesses (MBs), which characterise the informal sector, consist of firms with zero to ten employees who mainly belong to the poverty driven sector with lack of

resources and poor business record (Gomera et al, 2019). Tanzanian MBs are very small businesses that are located in densely populated areas with permanent but simple building structures. Despite their disadvantaged operational status, MBs have significant impact in the national economies through self-employment in many of the economic sub sectors such as food processing, clothes vending, electronic, agricultural production, and manufacturing, just to name but a few (Gomera & Mikko, 2015).

Most of the micro businesses have a dominant owner-manager working alone or with the assistance of at least one family member (Gomera et al., 2020). MBs exist all over the world but they are more prevalent in developing countries including Tanzania. MBs as for other practitioners in the informal sector, although they are the foundation of these economies that produce legal commodities and services are largely characterised by lack of business registration and non compliance with government regulations. Since MBs are informal in nature, local administrative and revenue authorities cannot have accurate statistics of the existence of such MBs in their localities. Majority of MBs are located in urban areas with high population densities. For example, almost 14.7 percent of MBs in Tanzania are located in Dar Es Salaam (Satta, 2016).

Tanzanian MBs have been left behind in the tax system for a long time now despite their fast growth since the 2010s (Diao et al., 2018). The exclusion of MBs in the tax system is attributed to the following factors, generation of significant cost to the firm or business, and lack of record keeping (Dube & Casale, 2019). Almost 72.1percent of Tanzanian MBs do not keep proper records for tax assessment (Maskaeva et al, 2019). This makes MBs non-supportive to tax compliance and revenue collections. In addition, MBs lack awareness on how to compare presumptive taxes with formal sector taxes. This makes MBs harbour misguided assumption that they are being charged unfairly. Such perceptions make MBs de-motivated in tax payment and non-compliant with government regulations (Dube and Casale 2019).

2.2 Taxing Micro Businesses in Tanzania

Tax authorities are important pillars in collecting national revenue through taxation. Tax is the amount of money collected from the income generated or value added by citizens from employment or business undertaken (Mahangila, 2017). The need of taxing MBs is catalysed by deficits in the national budget (Dube & Casale, 2019). For example, in 2015, the average tax collection in Tanzania was below 12percent, which was lower than the average tax collection in other countries in East Africa (Mahangila, 2017). In addition, Tanzania has a narrow tax base whose domestic revenue to GNP is about 15 percent as compared to the national average of 17 percent in other countries in Sub-Saharan Africa (Maskaeva et

al, 2019). Moreover, Tanzania's Tax revenue is inadequate in meeting government expenditure. For example, for the year 2019, the average collection was TZS 12.6 trillion against TZS 33.1 trillion-of the budgeted expenditure. Due to a budget deficit of TZS 20.5 trillion, Tanzanian practitioners and researchers were called upon to think of different ways of increasing revenue.

TRA introduced presumptive tax focusing on individuals who cannot keep records and are unqualified for VAT registration (Haji, 2017). Tax presumptive is considered as the best option of administering tax to individuals earning less than TZS 20 million per year (Haji, 2017).. Presumptive taxes are simplified regimes that are levied on the presumed, rather than on the actual income of formal or informal enterprises (Ogembo, 2019; Mintz & Chen., 2011). This is designed based on sales turnover, rent payable by a client, and business premises. In TRA, presumptive tax is administered by the Department of Domestic Revenue. MBs are required to submit business location, rental deeds, and business ID for tax presumption. The question as to whether the client is taxed appropriately has not been properly addressed because tax assessment depends only on the available incomplete information.

Apart from presumptive tax, MBs are required to make other contributions such as environmental cleaning levy, business registration fees, agent fee, and car parking fees, and market fees for those operating in the market areas. Fees are collected by the Municipal authorities and submitted to the government by the responsible authority. Moreover, in 2018, MBs including street hawkers were required to be registered and be issued with identification cards in Tanzania. Such a process however needed the support like appropriate methodology of transforming the hawkers to formal practical, specific technology to maintain their database and specific programme to make them grow from one level of business performance to another. The aforementioned support could be provided by practitioners and researchers to make it achieve tangible results (Meinzer et al., 2019).

Additionally, TRA introduced Block Tax Management System (BMS) with the aim of bringing more taxpayers into the tax system. The set-up of BMS consists of areas of trading concentration that are mapped up in small segments. These segments are based on geographical, administrative set-up, or a combination of streets to form a block. However, the informal sector is still not expected to adopt this system since business registration of the informal practitioners is low.

2.3 Challenges facing Tax Administration of Micro Businesses

Micro Businesses are still not fully included in the TRA tax system due to many challenges as follows: first, most tax regulations do not

accommodate MBs, lack of accuracy with MBs' information, and lack of proper records among MBs (Elly, 2017; Haji, 2017).

Similar findings are reported in a study by Fjeldstad and Heggstad, (2011) who revealed that local government taxation faces challenges that limit the inclusion of MBs in the TRA tax net. Multiplicity, unstructured nature, and excessive levies such as taxes, fines, or fees create a huge burden to MBs. These levies were charged astronomically irrespective of the size, type, and level of earning of a particular business. This trend makes it difficult for MBs to graduate to the next level of growth. Moreover, according to Coleman and Evans, (2003), most MBs are not satisfied with tax practices of their local authorities. Most MBs commented that tax procedures are not well organized and thus affecting the amount taxable from an individual MB. Poor tax administration was cited as a discouraging factor to many tax paying firms. Sometimes, there is over estimation of taxes that ends up demoralizing taxpayers (Crawford & Freedman, 2008).

Moreover, Nakiwala, (2010) revealed that despite that, tax administration to MBs is an important revenue collation avenue, TRA tax practices are presumed uneconomic. The presumption is based on the grounds that the practices cause high cost of monitoring, controlling, and collecting taxes. In addition, geographical diversity of MBs causes constraints to tax administrators. It is also evident that, the costs incurred in tax administration of informal practitioners in most cases outweigh the benefits of the revenues generated (Haji, 2017). Furthermore, lack of information to tax authorities from MBs has been identified as another impediment against the inclusion of MBs in the tax net. The study by Slemrod and Yitzhaki, (1994) in Ghana found that information offered by MBs was not sufficient to support revenue authority in tax administration. For example, MBs lacked business records due to poor record keeping skills and thus personal memory substituted accounting system (Gomera et al., 2019). Therefore, the preparation of sound periodic financial statements such as balance sheets and income statements are virtually impossible. , this in turn negatively affects the link between MBAs and revenue authorities.

Another challenge is the complication of tax regulations or elimination of MBs in tax regulations. The complexity of tax laws makes MBs find tax compliance as a burden (Coleman & Evans, 2003). In this respect, many studies have proposed the need of strengthening the tax base by accommodating micro, small and medium enterprises (MSMEs) in the TRA's tax net, as this might lead to rationalizing turnover of tax regime. The initiative was also enveloped to help in pulling practitioners of the informal and semi-informal sectors into formal and, hence expanding TRA tax base (Elly, 2017).

As for the MBs, their inclusion in the tax net may help them transform from informal to the formal sector. This transformation is envisaged as advantageous to MBs in terms of accessing credit, accessing formal, and export markets, participating in government procurement, and enjoying attractive business opportunities available in the Government (Nakiwala, 2010).

2.4 IT and tax system in Tanzania

The implementation of IT tax automation has increased tax revenue, has reduced redundant data, and enhanced easy access to and availability of customers' data upon retrieval (Lokarach & Rugami, 2019). Various studies have revealed that, availability of accurate, relevant, and proper flow of information increases efficiency of tax administration (Lubua, 2014). Tax administration involves, among other things, the kinds of taxes collected, methods of collecting tax, methods used in estimating tax payable, and methods used in communicating with taxpayers. Therefore, aspects need to be considered by revenue authorities during information flow of enhancing tax administration from MBs

In Tanzania, IT has also improved compliance among taxpayers, which in turn, has boosted revenue collections. Currently, TRA uses a number of electronic tax administration systems, which include Integrated Tax Administration System (ITAX), Taxpayer Identification System (TIN), Computerized Motor Vehicle Registration System (CMVRS), Customs Administration System (ASYCUDA++) and Computerized Drivers' License System (CDLS). All these have reduced the pressure of manual operations. Variable Tax assessment brackets are automated online and a customer can fill in the required information and print it out for tax payment (Maskaeva et al., 2019).

In addition, Tanzania as is the case with other developing countries, has introduced Electronic Fiscal Device (EFD) as a tool of administering Tax in the country. EFDs are designed for use in business for efficient controls in areas of sales analysis and stock control systems, and which conform to the requirements specified by tax laws (Maskaeva et al., 2019).

Moreover, TRA is currently working on automation of the Block Management System (BMS) by improving registration, coverage, information capturing, and enforcement strategies. The BMS is intended to support the tax administration; however, it is assumed as a one-sided communication system that lacks the automation of tax laws for simplifying tax compliance and thus it only helps the tax authority to track down taxpayers. In addition, the system is not tailor-made for MBs. Therefore, this study focuses on the system that enhances two-way communication for simplifying compliance with tax payment among MBs.

In another work, Kira's (2017) work recommended for the digital technology on enhancing tax compliance among small taxpayers. However, Kira's study did not focus on the potentials of mobile technology toward tax administration of MBs and this is another motivation of carrying out the current research.

2.5 Conceptual framework

Given their importance in economic development, MBs' involvement in TRA's tax regime is vital and is empirically supported by many studies (Kundt, 2017; Joshi et al., 2014; the World Bank Group 2007). However, the economic theory on tax administration such as simple to comply and simplicity on tax administration (Kundt, 2017; Gale & Holtzblatt, 2002; Gallagher, 2005), poses challenges of not including MBs in the TRA's tax net, as their inclusion is likely to lead to high tax administration costs and complexity in issues of compliance.

Therefore, the conceptual framework in Figure 1 focuses on three aspects that connect the three research questions addressed in this study namely the current tax administration practices of MBs, the challenges limiting TRA from administering tax to MBs, and the potential technological solutions for tax administration of MBs.

In Tanzania, the digital technology is considered as potential to both TRA and business community in improving tax compliance and reducing administration and compliance costs (Dube, 2018; Lubua 2014). Despite the adoption of technology, MBs are still left out of the tax net. This motivated the current study into exploring the possibility of using mobile technology to include MBs in the country's tax net.

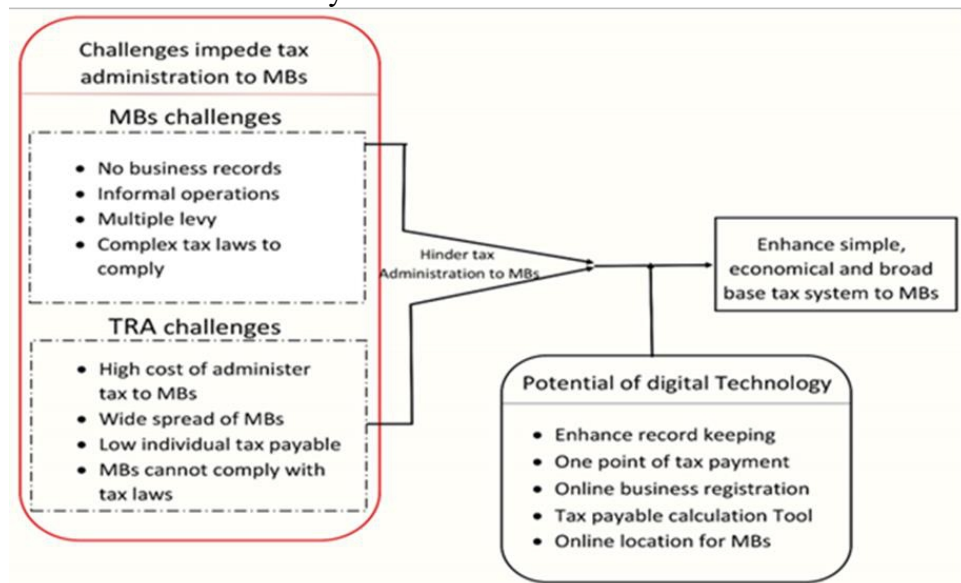


Figure 1: Conceptual framework of the study

MBs are required to pay taxes because they generate income from their daily undertakings. However, the current tax administration of MBs as for other small businesses in Tanzania lacks structured framework. As Haji, (2017) observes, MBs face multitudes of levies, which are charged by different authorities. This high tax burden creates difficulties of administering tax to informal practitioners, including MBs (Haji, 2017). Tax burden reduces the proportion of the total personal/ business income as large proportion is charged and taken by the government in the form of taxes, leaving the MBs with little expendable capital for business growth and development.

The MBs are not included in the TRA tax net, because most of the tax regulations do not accommodate MBs, lack of accurate information on MBs and lack of proper accounting records among MBs (Elly, 2017; Haji, 2017; Fjeldstad and Heggstad, 2011; Crawford & Freedman, 2008). In addition, TRA presume that, tax administration to MBs is uneconomic because of high cost of monitoring, controlling, and collecting tax revenues (Haji, 2017; Crawford & Freedman, 2008; Ahmad et al., 1991). These factors and the importance of taxing MBs attract research on the potentials of the use of technology in enhancing the inclusion on MBs in TRA's tax system and in enhancing effectiveness, efficiency, and economic benefits of tax system (Dube, 2018).

Digital technology has fostered a close relationship between the two parties. As proposed by Ebifuro et al., (2016), knowing the taxpayers, their status, names, and the size of their business, their characters, and location of their business are among the indicators of effective tax administration. The study showed remarkable success and recorded a large number of informal businesses. The current study focuses explores the adoption of mobile technology including the ability of determining geographical location of taxpayers, activeness, and taxpayers' ability of complying with tax laws as a means of effective tax administration.

3. Research Design

The study adopted a mixed method research design (Creswell, 2014) in exploring TRA's tax administration to MBs. The mixed method used is convergent parallel mixed method (Creswell, 2014, Pg. 219-223), whereby data are analysed simultaneously. Convergent parallel mixed method was used because two types of data collection namely qualitative and quantitative were used through interview and questionnaire respectively (Kothari, 2004) to generate findings in response to the research questions.

3.1 Study area and Participants

The study was carried out in Dar Es Salaam City, which is the head office of TRA and the economic hub of Tanzania. Twenty-four TRA officers

were interviewed and 137 MBs were provided with questionnaires to collect quantitative data. The informants from TRA were earmarked basing on friendship, professional collegiate and willingness to participate in the study. The MBs participants were purposefully chosen based on (1) the kind of business and (2) willingness to participate in the study. Therefore, all 161 participants who participated in the study came from various business sectors in Dar Es Salaam City. Because the study was exploratory in nature, and which required more detailed and overview information from practitioners, the sample size was considered satisfactory (Bryman, 2012).

3.2 Data collection methods

The data collection tools included questionnaire for quantitative and interview guide for qualitative data. These data were collected simultaneously using the same variables, namely tax administration, challenges limiting tax administration of MBs, and the potentials of digital technology in tax administration as depicted in Figure 1 in section two of this paper. Qualitative data were collected through semi-structured interview whose questions focused on tax administration, challenges facing tax administration to MBs and the potential of technological solution to the identified challenges. These themes were built based on the research questions, practical aspects of tax administration, and tax theories. The interviews were designed as natural dialogues around the identified themes. The interview lasted for 15 to 25 minutes. The researcher made extensive discussions notes on the prior prepared form in each theme. The TRA interviews were conducted in Kiswahili as the language enhanced the researchers to get more detailed and meaningful inputs instead of English. However, afterward the translation was made to English for reporting purposes.

For the questionnaire, the specific aspects in each theme were further categorised in different aspects. The researchers designed questionnaires from a literature information for the collection of quantitative data. The questionnaires were divided into three themes named the current practices of tax administration by TRA to MBs, the challenges limiting TRA in the administration of taxes to MBs, and the potential technological solutions to tax administration challenges facing MBs. From each theme a number of statements most of which were identified in the prior conducted interview. Table I below summaries the data collection method types of data collected and kind of respondents to each research question.

Table 1: Connection of Research Question, Type of Data Collected, method and respondents

Research Question	Type of Data Collected	Method and Respondents	Reason
RQ1	Qualitative	Interview of TRA Officers	Current practices of tax administration by TRA to MBs performed by TRA therefore they were focal point to provide information
RQ2	Quantitative	Interview of TRA Offices	The challenges limiting TRA in the administration of taxes to MBs found to be experienced by both sides, i.e., tax authority and potential taxpayers.
	Qualitative	Questionnaire to MBs	
RQ3	Qualitative	Interview of TRA officers and MBs	The potential technological solutions expected to be used by both Tax authority and tax payers, therefore information from both sides seems to be crucial
	Quantitative	Questionnaire to MBs	

3.3 Analysis

Both quantitative and qualitative data were analysed using a side-by-side approach (Creswell, 2014, pg. 222), whereas quantitative information was analysed by themes and compared with qualitative information. This means quantitative and qualitative data were analysed separately, and then the results from each method were compared. For qualitative data, content analysis (Bryman, 2012) approach was used.

The content analysis involved a coding process, which entailed grouping of the collected data into three themes. The themes were current tax practises to MBs, challenges limiting tax administration to MBs, and the potential technology for tax administration of MBs. After categorising data into three groups, the data were interpreted to generate relevant information. Descriptive statistics was used to analyse quantitative data through SPSS. Qualitative data were broken down into small groups, which were categorized into three main themes, which were designed to establish tax administration to small business owners, the challenges of tax administration, and the potential areas where mobile technology could be used to tackle the challenges.

4. Results

This section presents the study findings on, practical aspects of tax administration to MBs, challenges thereon, and the potential of digital technology in enhancing tax administration to MBs.

4.1 Participants General information

The primary participants of the study were MB owners in Dar Es Salaam City. All together, 137 MB owners filled in and returned the questionnaire. Secondary participants included 24 TRA Officers who

participated in the interview. These provided personal views on practical experience of tax administration towards MBs. Therefore, 161 participants (MB owners and TRA Officers) from various business sectors in Dar Es Salaam City provided information for this study. Table 2 presents demographic characteristics on gender, age, education level, the type of business, and business location of the MB owners who participated in the study.

Table 2: General information of MBs participated in the study

Categories of respondents		Frequency	Percent	Cumulative Percent
Gender	Female	59	43.1	43.1
	Male	78	56.9	100.0
	Total	137	100.0	
Age of MBs	18-30	48	35.0	35.0
	31-45	70	51.1	86.1
	46-60	19	13.9	100.0
	Total	137	100.0	
MBs Education level	Primary education	54	39.4	39.4
	Secondary Education	61	44.5	83.9
	Diploma Level	15	10.9	94.9
	Bachelor	7	5.1	100.0
	Total	137	100.0	
Type of MBs Business	Food Vendors	18	13.1	13.1
	Garments	16	11.7	24.8
	Fruits Vendors	17	12.4	37.2
	Cosmetics	23	16.8	54.0
	Mobile money Services	22	16.1	70.1
	Electrical utilities	28	20.4	90.5
	Hardware	7	5.1	95.6
	Mixed business	6	4.4	100.0
	Total	137	100.0	
MBs business location	Local Markets	21	15.3	15.3
	Bus stop areas	55	40.1	55.5
	Road junctions	52	38.0	93.4
	Other areas	9	6.6	100.0
	Total	137	100.0	

4.2 Activities performed in Tax Administration to MBs

Through interview with TRA Officers, the current practices of tax administration of MBs were rated as weak to nearly non-existent. The respondents reported that local authorities conduct most of the tax practises from MBs. However, in some cases, TRA applied a presumptive tax system to MBs. Regarding current tax administration practices to MBs, one of the interviewees had this to say,

We currently have weak direct communication with MBs concerning tax payment, since very few MBs are paying taxes to TRA. Moreover, we have found that MBs are paying multiple taxes, levy, and fines to different authorities including local authorities, market authorities, and cleaning agents.” This gives them a negative perception towards taxation due to high levy burden. “Most MBs are willing to pay tax, however the payment system for MBs is complex and costly that motivates neither the tax authority nor taxpayers.”

TRA confirmed to have the presumptive tax department, which mostly deals with MBs; however, the department seems to have failed to reach most of the MBs through tax campaign and training. Moreover, there is no full record for this group of taxpayers; therefore, TRA have failed to recognise MBs’ direct contribution to the nation's income and public revenue generation. The department lacks a sustainable mechanism of meeting taxpayers. . Some TRA Officers reported to have been providing training to some of the MBs through radio, television, and visitation. *“We are not providing active and continuous training to all kinds of MBs; rather we select few for training and follow-up.* They added that the selection of MBs to training depends on their nature and business environment.

In addition, from interviews, it was revealed that, business registration process was found to be very complex resulting in having too few MBs that are willing to register their businesses. Moreover, the Government (TRA) was found to have been aware of the working environment and the type of MBs’ businesses although not to a large extent. Therefore, it could be concluded that TRA's administration of tax to MBs is not efficient.

In addition, the study revealed further that, MBs have no proper system for direct tax payment and have unrecognized businesses, which are surrounded by business uncertainties. Additionally, MBs were overburdened with multiple tax liabilities from different authorities. These liabilities notwithstanding, MBs were willing to contribute to national development. Table 2 presents a summary of findings on the current tax administration as ranked by MBs. These resulted from the Likert scale questionnaire containing a number of statements with their relative values as depicted in Table 3.

Table 3: Aspects of current practices of tax administration to MBs

S/N	Aspects reveal current Tax Administration to MBs	Minimum	Maximum	Mean	Std. Deviation
1	TRA do not provide training to MBs	1	5	2.77	1.742
2	MBs registered their business with local authorities	1	5	2.88	1.620
3	MBs have proper communication with authorities at business places	1	5	3.94	.811
4	MBs' business types and locations are recognized by the Government	1	5	4.17	.871
5	MBs have no proper system for direct tax payment	1	5	3.05	1.716
6	There is poor relationship between TRA and MBs	3	5	4.8	.541
7	MBs face multiple tax payment to different authorities	1	5	4.47	.718
8	MBs prefer TRA as only tax authority	1	5	4.26	.970
9	Informal operation of MBs lead to exclusion from direct involvement of national development	1	5	4.28	.897
10	MBs are willing to contribute in national development	2	5	4.46	.630
11	MBs advised to have active tax system	3	5	4.35	.671

However, from the data in Table 3 some items were confirmed as having low mean value and high value of standard deviation. Items such as TRA does not provide training to MBs, had mean of 2.77 and STD of 1.742, MBs register their business with local authorities had mean of 2.88 and STD of 1.620, and MBs lack proper system for direct tax payment had mean of 3.05 and STD of 1.716. as can be seen these variables had some variations across respondents.

The low mean and the high standard deviation were influenced by the business type as presented in the original individual respondents as captured and shown in Appendix 2. This confirms the observation made by TRA officers that the nature of the business of these MBs can influence tax administration mechanisms. For example, it was observed that food vendors, fruit vendors and MBs on garments were not tax friendly as compared to MBs on cosmetics, electric equipment, hardware, and mobile money services.

4.3 Challenges

The study found that TRA does not charge tax to MBs directly due to difficulties associated with administration of tax to small taxpayers. The challenges regarding complex tax laws and regulations were beyond the level of understanding of MBs and thus hindering MBs' compliance to Tax regulations. In addition, TRA confirmed that most of the

MBs were operating informally without any business records or business registration. Moreover, there was lack of proper tax administration mechanism to MBs, as no single authority was liable with levy collection from MBs; this discouraged MBs from complying with tax payment procedures. Another identified challenge was lack of information flow from tax authorities to MBs. Additionally, the respondents revealed that currently TRA does not use technology in tax administration to MBs. This is due to lack of updated skills among their staff on technology and lack of software that could effectively connect MBs and TRA. Inability of designing and operating software applications for taxing different groups of taxpayers was reported to have negatively affected tax administration to MBs. One of the interview respondents revealed, *“We do not have the technological incubation for software and system development.* Additionally, TRA included MBs in the presumptive tax system because these firms have poor information system, have no permanent address, leading to high tax administration costs.

The study revealed challenges that constrained tax administration of MBs. These challenges face both MBs and TRA. The statements in the Likert scale questionnaire were analysed to retrieve quantitative information derived from descriptive statistics as presented in Table 3. Specifically, the MB owners reported that there was no proper tax bracket, which relate to the income level of MBs (mean 4.04, STD .969). Moreover, MBs were not aware of revenue collection channels (mean 4.50, STD .708). Additionally, multiple taxes discouraged MBs from paying taxes (mean 4.50, STD .620)

The factors that hindered tax administration of MBs include, a wide spread of MBs, informal operations of MBs, and poor understanding of tax procedures. In addition, MB owners reported to have failed to pay property taxes due to lack of record keeping (mean 4.26, std .825), lack of knowledge among MBs on record keeping (mean 4.45, std .727), and lack of knowledge among MBs on Tax payment procedures under TRA (mean 3.23, std 1.693) MB owners were not able to access business services from local authorities because of operating informally (mean 3.21, STD 1.738) and sometimes lack of specific locations for MBs business operations (mean 3.15, STD 1.643). Additionally, MBs operate in difficult environments (4.56, STD .513) and their businesses were found to be unsustainable for any near future (mean 3.09, STD 1.680).

The findings show that, the challenges in taxing this informal sector, ranged from underreporting of taxable income, lack of authority, lack of mechanisms of monitoring activities of the informal sector, and lack of registration of businesses in the informal sector and non-compliance with taxation ethics.

Table 4: Quantitative findings on challenges affecting tax administration to MBs

S/N	Aspects reveal challenges affect tax administration to MBs	Minimum	Maximum	Mean	Std. Deviation
1	No proper tax bracket relate to level of MBs income	1	5	4.04	.969
2	MBs fail to pay proper tax due to lack record keeping	1	5	4.26	.825
3	MBs have no knowledge on Tax payment procedures under TRA	1	5	3.23	1.693
4	MBs fail to access of services from authorities due to informal operation	1	5	3.21	1.738
5	MBs are not sure of revenue collection channels	1	6	4.50	.708
6	No specific locations for MBs business operations	1	5	3.15	1.643
7	MBs are operating in difficult environment	3	5	4.56	.513
8	MBs have no knowledge on record keeping	1	5	4.45	.727
9	Multiple taxes discourage MBs from paying taxes	1	5	4.50	.620
10	MBs businesses are not going concern	1	6	3.09	1.680

The findings of this study have identified challenges preventing the inclusion of MBs into direct tax systems as reported in the foregoing sections.

However, from the data in Table 4, we can confirm that there were some items with low mean value and high standard deviation. Items such as lack of knowledge among MBs on Tax payment procedures under TRA (mean 3.23, STD 1.693), and MBs failure of accessing services from authorities due to the informal nature of their operations (mean 3.21, STD 1.738). Others include lack of specific locations for MBs business operations (mean 3.15, STD 1.643), and MBs businesses are not going concern (mean 3.09, STD 1.680).

The low mean and the high standard deviation were influenced by the business type as presented from respondents. This confirms that the challenges affect all MBs regardless of type and nature of the business. However, the impact of some challenges depends on the nature and type of business. Table 6 shows that food vendors, fruit vendors and garments dealers are commonly challenged by lack of knowledge on Tax payment procedures, lack of access to services from authorities, lack of specific locations for their business operations, and lack of business continuity (businesses are not going concern). The trend is different from MBs dealing with cosmetics, electricity supply, hardware, and mobile money services.

Moreover, the study data revealed that, some of the identified challenges correlate with poor mechanisms of TRA relationship with MBs. The data revealed a significant positive relationship between absence of tax brackets, lack of record keeping, lack of knowledge on tax payment

procedures, unknown tax collection channels, and multiple taxes on the one hand, and poor TRA relationship mechanisms with MBs on the other hand. The correlation was established based on the data as presented in Table 5.

Table 5: Correlation between challenges affecting tax administration and poor tax administration MBs

Challenges Impede Tax Administration to MBs	Poor relationship between TRA and MBs	
	N=137	
	Pearson Correlation	Sig. (2-tailed)
Absence of proper tax bracket relate to level of MBs income	.725	.008
Lack of tax record keeping to MBs	.564	.015
Lack of knowledge on Tax payment procedures for MBs	.852	.007
MBs fail to access services from authorities due to informal operation	.005	.955
MBs are not sure of revenue collection channels	.671	.012
No specific locations for MBs business operations	.115	.179
MBs are operating in difficult environment	.027	.755
MBs have no knowledge on record keeping	.017	.846
Multiple taxes discourage MBs from paying taxes	.733	.009
MBs businesses are not going concern	.021	.812

4.4 Potentiality of Technology

Based on the challenges cited in section 4.3, researchers identified potential solutions of addressing them. These potential solutions include the use of a good number of mobile phones. However, the widely cited solution to most of the practical challenges is the application of mobile technology. According to the study participants, despite the widespread of the various identified challenges, almost all MBs had mobile phones that could be used to facilitate tax administration practises and enhance MBs direct involvement in the national development.

Digital technology was reported as a potential area for tackling tax administration challenges among MBs. From the findings, the study participants also recommended the use of digital technology in carrying out different activities in responding to tax challenges. Additionally, according to the respondents TRA should set a strategic training plan of equipping employees with the skills of designing technological solutions to address the challenges. This might include in house training and short courses, which staff could attend to upgrade their skills as per the emerging technologies. The respondents observed further that, TAX institute, practitioners, and other higher learning institutions in the country should be part of building specific software and skills for TRA in adopting current technology to address practical challenges facing tax administration.

Moreover, MBs proposed the usage of digital technology for business registration (mean 4.41, STD .692). Moreover, the mobile phone was recommended for use by MBs in making direct digital payment to TRA (mean 4.57, STD .566). In addition, participants proposed the usage of a mobile record keeping system that might help them generate information for tax purposes (mean 4.50, STD .698).

As for tax administration, participants recommended that, local authorities should deal with creating enabling business environment for MBs to function and leave the collection of tax levy to TRA (mean mean 4.36, STD .674). Moreover, it was recommended that digital technology systems and mobile training application services should be used to enhance tax compliance (mean 4.50, std.708) and MBs be trained on its application (mean 4.50, std .698). However, having a user friendly and simple mobile tax application was among the concerns of the study participants (mean 4.49, STD .687). The technological potentials on tax administration of MBs as presented in Table 6 indicate that TRA has the opportunity of using technology to increase tax base.

Table 6: Quantitative findings on technological potentials on tax administration to MBs

S/N	Aspects reveal technological potentials on tax administration to MBs	Minimum	Maximum	Mean	Std. Deviation
1	MBs prefer using digital registration for business registration	1	5	4.41	.692
2	MBs recommend presence of Direct Digital Payment system	3	5	4.57	.566
3	MBs recommend local authorities to deal with creating conducive business environment only	3	5	4.36	.674
4	MBs inspired to have mobile record keeping system	1	5	4.50	.698
5	MBs inspired to have digital technology system for tax compliance	1	5	4.50	.708
6	MBs prefer to use mobile training application	1	5	4.50	.698
7	MBs prefer friendly and simple mobile tax application	2	5	4.49	.687

5. Discussion

From our findings, the explorative mechanism of enhancing tax administration to MBs through digital technology can be discussed under three themes: the current practical aspect of tax administration to MBs, challenges thereon, and the potential of digital solution to the existing challenges. Therefore, this section responds to the research questions that contributed to the achievement of the study objectives.

Research question *RQ1* asked, “*What are the current tax administration practices performed by TRA to MBs?*” The results revealed a number of aspects in the tax administration to MBs. According to our findings,

the current tax practises to MBs are in the form of presumptive tax system. As identified by Ahmad et al., (1991) and Lapidoth (1977), the presumptive tax resulted from the application of indirect methods due to many reasons. These include simplification of the burden of taxpayers' compliance and the burden of tax collectors' administration. The burden is through the requirements of indicators of accurately estimating the actual income of the taxpayer in order to combat tax evasion, and encourage taxpayers to keep proper accounting records. However, the findings reveal that not all MBs are included in the presumptive tax net of TRA. Therefore, local authorities through levy and fines handle the rest.

It is important for local authorities to ensure that, MBs are taxed is because these businesses are a significant source of income generation. However, it is expensive to administer taxation to MBs. Therefore, local taxes and informal income collection mechanisms were found more preferable than the formal taxation administered by TRA because of the difficulty of enforcing many MBs into adhering to tax laws. Moreover, to eliminate multiple taxes from MBs, it was advised that TRA should be the only authority of collecting and administering levy or tax to all taxpayers. Moreover, participants emphasised the need for a mechanism of introducing an active tax system to informal practitioners in the country.

The finding revealed that MBs wishes TRA set up Large Taxpayer Offices (or units) to manage tax affairs of the large taxpayers given their importance in the economy of the nation. Accordingly, there is a need to establish a unit to manage MSMEs given its wide tax base. This would help different enterprises to graduate from informal to formal status and assume the brighter future of having a larger base of collecting revenue from the country as recommended by Fjeldstad and Heggstad, (2011).

It was also revealed that, MBs who are willing to pay taxes have the potential of enlarging tax base, increasing tax revenue, and creating a responsible society leading to sustainable source of national tax revenue. This supports the findings of a study by Chatama (2013), which revealed that taxing the informal sector increases tax revenue and reduces tax gap. Tax administration of MBs should focus on the minimal compliance requirements, simple and straightforward administration regulations to suit MBs skills, business environment incentives, and lowering interactive procedures with the tax authorities. The digital technology should be adopted to minimize administrative costs of dealing with MBs. Thus, administrative techniques should focus on connecting the compliance aspect with the benefits of being formal.

From the study findings, the inclusion of MBs in the tax net is a very complicated move. However, TRA has to accept that most of the citizens are of the MBs nature; thus, they have to devise a suitable mechanism of

implementing a simple, administrable, and effective tax system to MBs. Moreover, since the type and nature of MB businesses seem to affect some administrative aspects (refer to Table 3 in section 4 of this paper), specific actions should be taken to make sure that most of these businesses are efficiently included in the tax net.

The MBs should be included in the tax administration to enable for effective and efficient revenue collection. Firstly, the cost of administering small taxpayers should not outweigh the value of the revenues collected. However, the importance of considering the long-term benefit of tax administration to MBs is inevitable. These benefits may include an increase of long-term revenue from a wider tax base, the growth potential of MBs (effects of formalization), creation of responsible society and economic growth generally (fiscal social contract).

Research question RQ2: “What are the challenges impede TRA in the administration of taxes to MBs?” The results revealed a number of important factors that influence tax administration to MBs. These challenges are categorized into different themes namely, Informal operations of MBs, which were found to be the most significant challenge for TRA tax administration. Lack of Government policies concerning their practice and area of their investment has been challenging. It is argued that the current government is the only regime that has created potential opportunities to MBs. However, whether other future regimes would be in favour of MBs operations is yet to be seen. Additionally, many informal participants lacked basic knowledge on tax education as a whole. They still believe that paying taxes to the government is an option since it does not benefit their business instead it kills it.

From the study findings, it is proposed that MBs should be included in the direct tax system. However, the direct tax system, which requires keeping of records books appropriately, was found to lead to a high compliance burden to MBs in the form of costs, skills, and the required capacity. Not all these are in favour of most of micro businesses as they lack the ability of practising them as confirmed by the findings of Engelschalk, (2007).

Additionally, the challenges of tax administration of MBs have the root causes on the characteristics of MBs. Tanzanian MBs without being not registered for tax purposes do not keep proper records, hence it is difficult to get accurate tax assessment, and they have no room and knowledge of filing tax returns.

Therefore, due to the need for a large tax base and the importance of business growth in Tanzanian economy, the study recommends that stakeholders should think beyond presumptive taxation from MBs, as this involves the use of indirect means, which might be inaccurate, of ascertaining tax liability. Accordingly, where the revenue authority cannot ascertain a

taxpayer's income, or cannot verify the accuracy thereof, the presumptive regimes allow the revenue authority to *presume or* determine the amount of income based on alternative observable indicators. This may discourage MBs from growing hence remaining stagnant and reduce the tax base.

The findings revealed that the challenges such as lack of tax bracket, lack of accounting record, lack of knowledge on tax payment procedures, unknown tax collection channels, and multiple taxes could be tackled through the establishment of a strong relationship between TRA and MBs.

Research question *RQ3*: “*What are the potentials technological solutions to tax administration challenges that suit the MBs operations?*” Our study confirmed that the inclusion of micro business in direct tax net is considered to be in line with a simple application of tackling the challenges of tax administration referred to in the foregoing discussion.

Moreover, this study confirmed that the application of mobile tax administration to micro businesses is based on tax principles of fairness, efficiency, administrative capacity, and simplicity just to mention but a few. Basing on the simplification of the tax structure concerning administrative and compliance costs, the study confirmed that with mobile technology, the MBs registration, record keeping, and inbuilt tax computation within the tool can enhance administrative capacity. The administrative issues include registration, payment, information access, assessment, audit, litigation and the appeal system, sanctions, and penalties.

The initial cost of establishing digital system for tax administration to MBs may be regarded as high but, once the system is in full operation, the cost of future administrative activities would be reduced significantly. As the system focuses on managing large numbers of MBs, it may also reduce the number of administrators and, hence, reduce such costs as transportation and other operating expenses. Additionally, this also can assist MBs in keeping record not only for tax purposes but also for other business purposes.

This study among other things confirmed that through inclusion of MBs in the tax net, TRA has the opportunity of transforming MBs from informal operations into formal economy. The inclusion of MBs in the direct tax net may result in formalizing operations in their informal undertakings. Through technology, transformation is simplified, making it easier to master tax process, and motivate MBs into joining the tax net. Innovation in the tax system is necessary in making tax administration of MBs possible as it can support sharing of information at low cost (Dube, 2018; James, 2008). Apart from a change of perceptions of both authority and taxpayers, the digital technology should focus on outreach, and integration that create trust between MBs and TRA. Effective application of digital taxation among other things is presumed to enhance TRA outreach of micro business and create transparency and a two-way communication.

As it is argued, a good tax system should be simple for a taxpayer to comply with (Tanzi, 2013), then it is recommended that TRA should think of a mobile application, which would have a very simple user interface that could calculate tax and determine taxable amount. The study established that high economic and developmental expectations are often loaded with information generation by keeping and sharing it. Through technologies, developing countries could outperform and reach their citizens at all levels of development. The study confirmed that mobile technology could be one of the potential areas for investment in the transformation of informal to formal practitioners. This finding is consistent with the findings of various initiatives which have been made in Tanzania on mobile technologies for small-scale practitioners such as farmers (Misaki et al., 2019), street vendors (Mramba et al., 2016), MBs finance (Gomera & Oreku, 2018), and women entrepreneurs (Kapinga et al., 2019). This opens up the way for different authorities in seeing the potential of using technology-based innovations to formalize the informal practitioners and enable them benefit from the initiative. Moreover, other technological projects in healthcare, agriculture, education, governance, and business have shown great potential and the importance of inclusion in development through technology.

Based on the results of this study, the following technological solutions are suggested:

- Technological base that can enhance the relationship between TRA and MBs
- Record Keeping technologies for improved business performance indicators
- Technologies that help in MBs registration and maintenance of database for their operations and geographical areas of operations (Business registration and monitoring technologies)

Technological base that can enhance the relationship between TRA and MBs

Technologies for enhancing the relationship between TRA and MBs might have high importance for tax administration. The current mechanism of physical tax administration is weak and inappropriate. Therefore, through proper means of communication, record keeping, training on tax payment procedures, online channels of tax collection, and single authority for tax to MBs may improve revenue collection practices from MBs. This area of technology can lead to reliable information channels that could be used to ascertain taxable amounts to be levied to an individual MB owner. In addition, there is a need of applying mobile technology in providing training to MBs to enable them to comply with taxation practices.

Moreover, the enabling factors for mobile technology usage to MBs have been revealed in various studies (Azom & Muying, 2010; Baguma et al, 2013; Gomera et al., 2020). It was noticed that despite that, MBs have low capital; most of them own smart mobile devices, which are used for business operations. This provides the opportunity to the research community, practitioners, policy makers, and authorities to invest in formalizing operations of different informal sectors. Apart from just having gadgets, the training on the potential and magnitude of how and to what extent mobile phone could be leveraged is critical to both tax collectors and MBs.

Record keeping technologies for improved business performance indicators

From the findings, the study confirmed that both TRA and MBs would benefit from proper record keeping. The current modes of record keeping have several limitations, which include unsystematic record keeping, unclear record, and insufficient information for tax calculations. It has been shown that poor record keeping affect business performance, as nothing can be properly indicated to measure performance of MBs. The study confirms that there is a need for record keeping as identified in the study by Gomera et al., (2019). The usage of record keeping technology might be offered in different forms of application such as marketing, bookkeeping, or tax-based application.

Technologies for MBs registration and database

For MBs operations and geographical areas of operations (business registration and monitoring technologies), the findings confirmed that, technological solution might be developed to help automate business registration process. The findings imply that when MBs apply for business license, they would have to do full registration online using an application whereby the same information will be connected to TRA and to the local authorities. This might provide a viable solution for MBs statistics and an appropriate amount can be collected from them throughout the financial year. The registration will also track the business and locate the business area, which might be formalized.

6. Conclusion and Suggestion for Future Studies

The importance of MBs in the generation of national income to developing countries cannot be undermined. The authority of Tanzania tax administration is advised to take a serious consideration of the widening tax base for its potential in the national development. However, as the tax administration theory indicates that using low costs in administering tax, the technology would provide a potential solution for the initiative.

Thus, exempting the MBs from tax laws and regulation do not provide room for MBs to grow instead it creates irresponsible community of informal business owners. The challenge of tax administration cost must be addressed effectively through digital technology whereby, tax laws and regulations, can be an inbuilt aspect.

Addressing the challenges of taxing MBs should include providing them with special places for business and enabling them to make online registration basing on areas of their business. In this regard, TRA is advised to consider MBs as the tax hub that may stimulate and improve both revenue collection and build a responsible community of informal business owners in the country.

Themes of the study are broad and can be considered as exploratory in nature. Therefore, every identified issue such as tax administration of low-income earners, challenges, or potential technological solution call for in depth research in the area. The future research may be directed towards action research or design research in order to find out practical solutions to the identified challenges. This may involve designing, developing, and testing technological-based solutions for tax administration of low-income earners. Moreover, MBs is just a small part of the informal operations in Tanzania and other developing countries. As players in the informal sector are crucial in the national development, the study recommends that future studies should consider other players in the informal operations.

7. Abbreviations

ASYCUDA++-	Custom Administration System
BMS	- Block Tax Management System
CDLS	- Computerised Drivers' License System
CMVRS	- Computerized Motor Vehicles Registration System
EFD	- Electronic Fiscal Device
GNP	- Gross National Products
ITAX	- Integrated Tax Administration System
MBs	- Micro Businesses
MSMEs	- Micro. Small and Medium Enterprises
TIN	- Taxpayer Identification System
TRA	- Tanzania Revenue Authority

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The Impact of Scandalous News in the Automobile Manufacture on Companies from the Same Industry: A Comparative Study on the Chinese and European Markets

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Abstract

This paper examines the effect of scandalous news on corporate reputation of rival firms from the same industry and investigates the effects' differences in China and in Europe, providing evidence that scandalous news influences not only the target company itself, but also other companies from the industry. For this purpose, the paper uses the 2015 Volkswagen emissions scandal as a natural experiment. Volkswagen, BMW, Mercedes-Benz, Audi and Porsche were selected as sample companies. To measure reputational spillover effects, cumulative abnormal stock returns and sales growth of the sample companies are calculated and compared before and after the announcement of the scandal. The methodology adopted for estimating stock returns is the event study method, which measures the impact of a specific event on the value of a firm. Stock price data is collected from Bloomberg and used to calculate cumulative abnormal returns of the sample companies. Furthermore, difference-in-differences estimation is used to compare the sample companies' sales growth before and after the scandal. Volkswagen, Audi, BMW and Mercedes-Benz are included in the treatment group, whereas 29 non-German car manufacturers were selected as the control group. The results show that overall rival companies were affected by the scandal, cumulative abnormal returns declined by 6% and 10% for BMW and Mercedes-Benz respectively, showing the contagion effect. However, the sales growths of these two manufacturers greatly increased, specifically on the

Chinese market for Mercedes-Benz and on the European market for BMW, proving dominance of the competitive effect and differences of the reputational spillover effects across countries.

Keywords: Volkswagen emissions scandal; event study; reputation; competitive effect; contagion effect

1. Introduction

Corporate reputation is not easily imitated by competitors and has become one of the most valuable intangible assets of successful companies. Corporate reputation research has a strong appeal in both the academic and business worlds. The exposure of a scandal is likely to affect not only the company involved, but also the entire industry.

If a company takes an action that damages its reputation, how does that action reflect upon other companies within the industry? Will the rival firms receive a loss due to shared reputation or will they take the advantage of the weakness of their competitor? This paper examines the effects of reputation spillover between rival firms. For this purpose, the event study method is chosen, using the 2015 Volkswagen emissions scandal as the natural experiment.

Volkswagen Emissions Scandal shocked the whole automotive industry in 2015. As nowadays sustainability and ecology are one of the main concerns of human society, the Environmental Protection Agency (EPA) tightens emission control due to harmful and mortal effects of nitrogen oxide which is a pollutant found in car's exhaust. Volkswagen, as one of the leading automobile manufacturers in the world, attempted to take over the United States diesel market. Most of the competitors, such as Honda, Hyundai, Nissan, found the new regulations extremely challenging, Volkswagen, on the other hand, showed great success (Mansouri, 2016). Surprisingly, in September 2015 it was reported by EPA that in an ample number of Volkswagen vehicles, sold worldwide, a defeat device or software was embedded in the diesel engine with the purpose of changing vehicle performance to improve required results. Volkswagen aimed at pretending that its vehicles follow emission standards, but the actual result of the Volkswagen emission test on the road was thirty-five times more than the cheated result in the lab (Le Page, 2015). The Volkswagen emission test scandal has created dramatic consequences and has an impact on an ample number of authorities. Only in many years after this huge scandal more cases of emissions cheating in the automotive industry have been revealed, which makes the Volkswagen emissions scandal one of the severest cases of economic fraud ever – one with far-reaching economic-, social- and health-related consequences. Hence, it is

an appealing natural experiment for testing shared reputation in German automobile industry.

Announcements of operational loss events tend to cause significant losses in the market value of that firm's equity, which potentially spills over to non-event firms. If a certain firm experiences negative consequences of its actions, competitive firms might either experience a negative effect as well, receiving a contagion effect, or it might show a quite opposite reaction -so called, competitive effect (Goins, 2008). These influences are also called 'spillovers'.

The aim of this paper is to examine the spillover effects of capital markets in two regions (China and Europe) before and after the disclosure of scandals, and to determine, whether there is a "contagion effect" or "competition effect", and which dominates. Despite the public attention to the negative effects of scandal disclosure, there is little research on the impact of contagion and competition effects. Most studies consider only the impact on the target firm, not the impact received by firms in the same industry. There have been studies that explore companies in the same industry in one country, but no studies that compare the effects received by companies in the same industry in two different countries. Therefore, this paper contributes to the literature by comparing the differences in spillover effects across countries. Consumers' psychology is different in China and in Germany, and the impact received by companies may not overlap. By studying the impact of scandals on stock prices and market reactions some lessons can be learned, providing references for other companies in the industry to address such issues in the future.

The rest of the paper is organized as follows: Section 2 discusses the emission scandal timeline; Section 3 provides a review on existing literature; Section 4 explains the event study method and data resources; Section 5 presents the empirical results and Section 6 concludes.

2. Background: The Volkswagen Emissions Scandal

2.1 Timeline of the Scandal

Diesel vehicles occupy a significant portion of the global automobile market, and due to their low price in Europe, Europe has become the largest market for diesel vehicles, and its passenger diesel vehicles account for more than sixty percent of the passenger vehicles in the whole European continent. In today's increasingly serious environmental pollution, the exhaust emissions from the use of diesel vehicles are undoubtedly the key control area of each country. "Clean" emissions have also become the focus of publicity in the sale of diesel vehicles (Mansouri, 2016).

In order to be ahead of the traditional German auto powerhouses such as Mercedes-Benz and BMW in the field of diesel car sales and occupy the

European diesel car market, VW claims to have invested heavily in the research and development of clean diesel models a long time ago, resulting in the fact that the company's diesel vehicles are not only "clean" in terms of emissions but also efficient in terms of power.

In recent years, the U.S. regulatory system became much stricter than Europe in terms of diesel emissions regulations. Historically, the United States and European Union have taken different approaches to regulate passenger vehicle fuel economy and emissions of greenhouse gases and other pollutants, affecting choices of vehicle engines and fuels. In the U.S. emission regulations, the emission standards for gasoline and diesel vehicles are extremely severe (Klier, 2016). Such stringent tailpipe requirements mean more capital investment, which causes many car companies to be discouraged from the U.S. diesel market, resulting in passenger diesel vehicles in the U.S. passenger car market only accounting for two percentage points. It is not difficult to see that the whole diesel car market in the United States is in an undeveloped state, which makes it very attractive for the automobile manufacturers - the potential of the market is unlimited. Combined with its own brand image of reliability, durability and energy efficiency, Volkswagen has made its "clean diesel" vehicles, which have become the technology leader in the U.S. diesel vehicle segment.

In May 2014, a study of the Center for Alternative Fuels, Engines & Emissions on behalf of the International Council on Clean Transportation (ICCT) was the beginning of the Volkswagen emissions scandal. According to the study, two Volkswagen diesel models greatly exceeded the U.S. emission limits when emissions were measured under real driving conditions, which was different from the laboratory tests. The Environmental Protection Agency (EPA) requested explanations from Volkswagen, but the company stated that this problem had already been solved. VW developed software patches for that purpose and recalled 500,000 cars. Nevertheless, the effect was too small to make a significant difference (EPA, 2015a). Consequently, the agency threatened VW not to certify Volkswagen's 2016 diesel models for sale in the U.S. unless Volkswagen could explain the test results and guarantee that new models would not exhibit the same discrepancies. On September 3, 2015, VW admitted to the EPA and CARB that they had used a defeat device in their software which regulated emissions and produced fake test results in the test box (EPA, 2015a).

The scandal entered its public phase on September 18, 2015, when the EPA served a Notice of Violation to the Volkswagen Group, stating that Volkswagen illegally installed defeat devices in approximately 480,000 2.0-liter diesel cars from 2009 to 2015 (EPA, 2015a). On September 20, Volkswagen publicly admitted manipulations and apologized in a public statement (VW, 2015a). Shortly afterwards, Volkswagen disclosed that the

defeat device was installed worldwide in about eleven million cars (VW, 2015b). In the following months, the EPA addressed a second Notice of Violation to Volkswagen, in which they alleged that also 3.0-liter diesel cars were affected (EPA, 2015b), including models of Audi and Porsche, which are subsidiaries of Volkswagen.

It is worth adding that this huge scandal was just the beginning of uncovering a whole series of violations, which occurred in numerous companies. Major automobile companies started recalling their cars voluntarily. In January 2017, Fiat Chrysler Automobiles received a Notice of Violation by the EPA regarding an installed defeat device; in March 2017, investigations on Daimler employees in the context of emissions cheating started with subsequent searches followed by a mandatory recall of more than 700,000 cars in Europe due to emissions cheating. Non-European car manufacturers were similarly covered in the media. Mitsubishi admitted to having cheated on emissions tests for the past 25 years. South Korean officials accused Nissan of utilizing defeat devices, and irregularities in Suzuki's emissions testing became public. High emission values were also reported for Mazda, Hyundai and Kia cars (Barth, 2019).

All these major events were triggered by the Volkswagen Emissions Scandal, and the consequences for the company were dramatic: resignation of the VW Chief Executive Officer Martin Winterkorn, financial losses of more than \$18 billion in fiscal year 2015, a civil settlement amounting \$15 billion to the USA. The scandal was covered by all the main news in different countries.

2.2 Why is the Volkswagen Emissions Scandal a suitable natural experiment

Car industry is one of the world's largest industries by revenue. Under the environment of increasingly mature market development and fierce competition in the automotive industry worldwide, car companies are chasing after greater benefits and seeking higher development. In such conditions there are numerous cases of worldwide scandals happening in the automobile industry in the past decades. What makes the Volkswagen Emissions Scandal a perfect natural experiment to analyse reputational spillovers?

First of all, the news broke out very unexpectedly and very fast, the society was shocked by what happened, and it immediately was shown by the company's stock price. Such a sudden event offered the researchers a great opportunity to study the effect of a certain event on the company's market value. Second, German vehicles take a large share of the automobile market worldwide. According to the German Center for Automotive Research (CAR), in 2020 China accounted for 38 percent of global car sales of Germany's largest car manufacturers Volkswagen, BMW and Daimler (Mercedes-Benz). Lastly, the scandal triggered a widespread public discussion, which makes

country-related reputational spillovers more likely to occur. For the reasons described above, this paper selects a famous economic and social event of automobile manufacturing safety scandal for its study purpose, taking VW's Emissions scandal as the research event to explore in detail "contagion effect" and "competition effect" on the same industry automobile enterprises.

3. Literature Review

3.1 Contagion Effect and Competition Effect

Corporate Reputation is an important discussion topic, covered by large literature in various fields of study from marketing to the industrial organisation. Reputational spillover is the main subject of our interest in this research. Therefore, our research is related to a number of empirical studies examining the competitive effect and the contagion effect.

Among the events that were studied in the past, there is a big number of studies related to bankruptcy (Helwege and Zhang, 2015; Lang and Stulz, 1992), merger announcements (Akhigbe and Martin, 2000), dividend-related announcements (Laux et al., 1998; Slovin et al., 1999), new product introductions (Chen et al., 2005), layoff announcements (Goins and Gruca, 2008), stock price surprises (Akhigbe et al., 2015), stock split announcements (Tawatnuntachai and D'Mello, 2002), going-concern audit opinions (Elliott et al. 2006), operational losses (Eckert et al., 2020), and environmental violations (Bouzzine and Lueg, 2020; Barth et al., 2019).

One of the very first researchers to study contagion and competition effects, are Lang and Stulz (1992), using data from 1970 to 1989, they examine the industry effects of corporate bankruptcies in the United States. The results of their study show that the release of bankruptcy information leads to a negative impact on the stock prices of competing firms in the same industry and a general decline in their share prices, which confirms the existence of a contagion effect. On the other hand, in the industries with a high level of competition, other firms in the same industry are not significantly negatively affected, and some even gain from the event. This confirms the existence of the competition effect.

Slovin et al. (1999) consider the effects of dividend cuts on other banks in the same industry using data from U.S. money center banks and regional commercial banks. They study whether other banks in the same industry are affected by externalities when a bank cuts its dividend. They found that when the U.S. money center banks cut dividends, regional commercial banks are affected by the contagion effect due to this information. However, when regional commercial banks cut dividends, they only have a negative impact on themselves, while other regional commercial banks in the same geographic area are affected by the competitive effect.

Elliott et al. (2006) use the returns from publicly-traded land subdivision/development firms and Real Estate Investment Trusts to examine whether intraindustry information transfers from going-concern audit opinion announcements create contagion or competitive stock price reactions for other real estate firms operating in the same line of business. As a result, they find a competitive effect dominating among rival firms.

It can be seen that many results show rather contradicting empirical results. Therefore, it is important to investigate the mechanisms, which allow one of the two effects to dominate.

Goins and Gruca (2008) explore the possibilities of reputational spillover effects, which might be positive and negative as well. The authors use rival firms' stock prices as a company's market value unit, and longitudinal layoff announcements in the US oil and gas industry from 1989 to 1996 as a sample. They find that interorganizational reputation effects follow a contagious process, indicating negative response to a layoff announcement, containing negative news for the shareholders, and vice versa – positive news brings positive effect for the rival companies due to the contagion effect. According to this study, the similarity in matters such as reputation, market demand, public awareness, resources, third-party support, and platform ecosystems, creates head-to-head competition. Goins and Gruca also find that close rivals receive both contagion and competitive effects. Although the contagion effect dominates, its scale is reduced by the competitive advantages (or disadvantages).

To understand what are the driving mechanisms of contagion and competition effects, Xie et al. (2019) consider the “net effect” of reputational spillover. A rival firm experiences both, the contagion effect (stock prices of competitors move in the same direction), which affects all the competitors in the industry at the same time, and competitive effect (stock prices of competitors move in the opposite direction), led by firm-specific information. Xie et al. (2019) argue that the net effect (the relative importance of competitive effect to contagion effect) depends on two factors: the relative size of intra-industry competitors and the type of information spilling over the social media. Hence, according to competition level, close and distant competitors against an industry leader experience high competitive effects, while moderate competitors experience high contagion effects.

Small firms need constant innovations to survive in the market and are more vulnerable to industry leaders' challenges (Chen et al., 2005). Hence, distant competitors are expected to react more strongly to industry leaders' valuation changes as well. Both. Goins (2008) and Wu (2019) agree close competitors are likely to receive competitive effect. However, Ouyang et al. (2020) argue that stakeholders tend to categorise firms by similarities (firm size, country of origin, industry etc.), therefore, risk of contagion effects are

higher for similar firms. In other words, German automobile manufacturers are more exposed to receiving negative reputational spillover effects of the Volkswagen Emissions Scandal.

Akhigbe et al. (2015) have also studied the reasons why one effect might dominate. They argue that a pronounced stock price decline of one firm yields negative valuation effects for industry rivals due to the degree of the surprise, characteristics of the firm experiencing the negative surprise (such as its relative size), characteristics of the rival firms (such as their similarity to the firm experiencing the negative surprise), and characteristics of the corresponding industry (such as degree of concentration).

Barth et al. (2017) conducted an event study on the Emissions Scandal, considering not only stock prices, but also bond and credit default swap (CDS) data. They found significant financial losses for Volkswagen as a reaction of the market on poor environmental violations of the company. Bouzzine and Lueg (2020) extend the study by considering a longer time period and multiple events in their research. Considering 10 identified Dieselgate-related events, they found a significant contagion effect on rival firms, which appeared to be larger than in an individual sale of VW's stock.

Wood et al. (2018) observed abnormal stock returns to 41 environmental violations announcements. They find that the announcements occurring after the Emissions Scandal are all associated with a more negative stock market reaction than those occurred before the scandal. These results indicate that consumer's confidence was shaken, and investors' risk aversion increased after the Dieselgate case.

This paper aims to investigate the reputational spillover effect triggered by the Volkswagen Emissions Scandal on German rival firms in Europe and in China. It is assumed that due to the market differences and consumer psychology, the two countries might show different reactions to the negative news.

3.2 Corporate Reputation in China

Many researches have been published about the methods of measuring a firm's reputation. The papers discussed above mostly focus on a company's market value, demonstrated by its stock returns. However, a few other ways have been developed to examine corporate reputation, focusing more on the social aspects of a company's reputation.

Schweiger (2004) proposed a concept for measuring corporate reputation, referring to reputation as an attitude construct that implies splitting it into affective and cognitive components.

Pappu et al. (2007) report a hierarchy observed among three countries in terms of respondents' product-category country associations. Japan, Germany, USA, Australia, and Italy are the top five countries respondents associate with

cars. It shows that consumers in China put a higher value on German brands compared to European ones, which also might influence a reputational spillover outcome in China.

An alternative way to measure corporate reputation was proposed by Rust et al. (2021) using social media. They developed a reputation tracker based on brand reputation driver and sub-driver data, for 100 top global brands, using Twitter tweets method. The tracker is highly time-sensitive and context-specific, it allows firms to respond fast to market stimuli.

Zhang (2009) , inspired by the work of Schweiger, extends the model to different countries with different cultures. Since China is becoming an indispensable part of the world market, and because ever more foreign companies are entering this market, corporate reputation management in China seems promising. Together Zhang and Schweiger (2009) conduct an empirical study in the Chinese context to show the applicability of the model in China as well. They find that in European countries and in the US quality, performance and attractiveness are the main positive factors regarding a firm's reputation. However, performance is the number one reputation driver in China. In China, good performance could simultaneously and effectively lead to strong likeability and competence of corporate reputation. Responsibility as the second strongest driver of corporate reputation is definitely becoming more and more important to strengthen a company's standing in China. From here it is possible to conclude that corporate responsibility plays an even more important role on Chinese market. Events connected with a company's social responsibility might strongly influence a firm's reputation in China.

Following Zhang (2009) and Schweiger (2009, 2004) this paper assumes that reputational spillover effects might differ, not only depending on the company's features and competitive abilities, but also on geographical factors as well.

3.3 Automobile market in Europe and in China

Automobile industry is one of the largest and most competitive industries, which constantly changes due to new policies, business environment and innovative technology.

The European automobile industry has its special features, such as high level of technology, importance of safety, sensitivity to the environment. Although Europe is a traditional car producer and an important region of automobile industry, constantly emerging Asian competitors cause decline of the European share in global car production (Vošta et al., 2017). European automobile market is different from the Chinese market. Consumer's need and demand created separate market segments for electric cars, diesel-powered cars, sport, racing, and luxury vehicles, which led to technological and industrial developments in the industry. Whereas, Chinese market was always

attractive for foreign manufacturers due to its low labour cost and tariff, generating foreign investments (Joshi, 2019). Moreover, the demand for cars in China greatly increased after the reform and open policy. Local manufacturers, undeveloped at that time, could not meet customer's needs, which offered new opportunities for foreign companies. The Volkswagen Company is one of the earliest manufactures set up business in China, being rather successful up till now and selling on the Chinese market more than on its home market in Germany. The reasons for that are Volkswagen's good reputation in China and high demand for practical, daily use cars. Meanwhile, the number of car manufacturers in China is very high, however, the majority of these companies are unknown abroad (Zhao et al., 2009). Despite a large number of local Chinese automobile manufacturers and foreign investors being obliged to produce in joint ventures with Chinese partners, foreign brands still capture almost 60% of the market. It results from the fact that Chinese cars are aimed at consumers with low purchasing power, and premium cars, which command a large share of the Chinese market, are almost exclusively manufactured with foreign technologies. The production of luxury cars is rather stable and resistant to economic fluctuations, with a strong brand loyalty playing a great role as well. The biggest premium manufacturers, BMW, Daimler, Audi, show a very dynamic production in China and in Europe.

An additional challenge for car manufacturers is local policies and regulations. European policies are driven by internationalization and the free market. The aim of the EU is to maintain a world-class automobile industry producing the most energy efficient and safe vehicles and guarantee millions of highly skilled jobs. In order to achieve these objectives, the European Commission has created the CARS 2020 Action Plan aimed at strengthening the competitiveness and sustainability of this sector by 2020. To deal with exhaust emissions, alternative fuels, funding for research and development, improving road safety, and the development of intelligent transport systems, the European Commission proposed the "European Green Cars Initiative" framework. As the main concern is CO₂ reduction, electromobility in Europe must come from renewable sources, which makes the task even more difficult for automobile manufacturers (Vošta et al., 2017). In contrast, in China urban air pollution is the most pressing environmental problem, and electromobility is therefore encouraged even if cars obtain their electricity from coal-fired power plants, as long as the emissions are kept away from the cities (Hu et al., 2018).

What governments are willing to subsidize can also influence the automobile industry in different markets. While China supports local manufacturers and consumers in producing and purchasing electro-automobiles, Germany subsidizes research rather than consumer uptake and

leaves coordination to private-sector led initiatives. There are various other regulations in China that make it not easy for foreign manufacturers. For instance, limited vehicle licenses in major cities, non-transferable lotteries in Beijing or auction systems in Shanghai. Besides that, China also has Corporate Average Fuel Consumption (CAFC) standards to control the official use of fuel intensity levels, designed to realize an ambitious average fuel consumption target of 6.9 L/100 km by 2015 and of 5.0 L/100 km by 2020 (Chen et al., 2020).

There is a constant race in the automobile industry to bring creative new formulas and ideas to improve the user experience and reduce environmental impacts. This research assumes that aside from the consumer's preferences, automobile market differences in China and Europe might also influence reputational spillover effects.

4. Study Method

4.1 Hypothesis

The goal of this investigation is to examine the specific effects of industry scandals on individual listed companies in the same industry. As it is established in the literature review, the effect might be divided into two directions: positive competitive effect and negative contagion effect. When a scandal occurs, the listed companies in the same industry experience a change in sales volume or revenue, share price or stock return. This paper's method is to calculate stock abnormal returns for each firm and sum them over time, and then to conduct a significance test. The following hypotheses are proposed:

H_0 : The returns of individual stocks in the same industry are not affected at the time of the scandal.

H_1 : The stock returns of the sample companies in the same industry were affected when the scandal occurred.

Under the null-hypothesis it is expected that the abnormal returns AR will be equal to zero. To test the null-hypothesis t-test method is used further in the empirical evidence section.

4.2 Event Study

Most of the related literature uses the event study method to investigate the firm's market value. MacKinlay (1997) offers a detailed and rather simple introduction to this method. Using financial market data, an event study measures the impact of a specific event on the value of a firm. The usefulness of such a study comes from the fact that, given rationality in the marketplace, the effects of an event will be reflected immediately in security prices by examining the extent to which the average or cumulative abnormal return

CAR deviates from zero in a certain time interval before and after the event disclosure date in a specific event window.

The most successful area where the event study method has been applied is in the area of corporate finance. Event studies in this field are more focused on studies that examine abnormal returns before and after the first public announcement by a certain company, such as mergers, acquisitions, and refinancing decisions. The event study method is also very important to test the effectiveness of capital markets. Stock market efficiency is of great importance as a measure of capital allocation in the stock market, while the event study method can be used to examine whether the stock market absorbs new information quickly and accurately. In addition, event studies are also used to test the effectiveness of laws and regulations and to assess losses in legal cases.

Event studies have a long history, and it is common to think that James Dolley (1933) was the first to propose and use it in his study of common stock. He studied 57 stock splits between 1921 and 1931 in which the stock price increased at the time of the event, 26 in which the stock price decreased at the time of the event, and 12 in which the stock price did not change abnormally. Thereafter, during the last century Fama, Fisher, Jensen and Roll (FFJR) in 1969 extended the method almost to its today's form.

The event study method is not the only way to measure a company's value. One could also consider direct productivity related measures, sales, return on investment or profits. Although such measures could also be used in this research, they are only available at low frequencies (quarterly or annually), which makes it difficult to isolate the value-added of the event from the overall performance of the firm. For this reason, the event study method was chosen for this study, combined with the sales-growth measurements. The event study has its limitations as well, for instance, often the abnormal return estimators are cross-sectionally correlated or are not independent across time for a given firm. However, in our case these problems are minor and can be ignored. Cross-sectional dependence is not a problem, as this paper only discusses one event, so the events are not clustered. The even period is rather short and market model abnormal returns estimates are used, which makes time series dependence unimportant.

The first step in our estimation is to choose the event. Our event is the Volkswagen Emissions Scandal. The day of the event can be difficult to define, as in some cases the scandal might break out before the official notice. To overcome this problem, the 'event window' that includes five days before and after the event is chosen. The 'estimation window' is needed for estimating the abnormal returns in 'normal' situations, without the event and defined as well. Usually, the estimation window time period is prior to the event. In this case, returns will be indexed in event time using t . Defining $t =$

0 as the event date, $t = T_1 T_1 + 1$ to $t = T_2 T_2$ represents the event window with $T_1 T_1$ indicating five days before the event $T_2 T_2$ – five days after. Hence, the event date is the official violation notice, $s = \text{September 18, 2015}$, the event window includes September 11-25, 2015, meaning $T_1 = \text{September 11}, T_2 = \text{September 25}$.

$T_1 = \text{September 11}, T_2 = \text{September 25}$. As for the estimation window, it is possible to choose any time period prior to the event, so a time period of 6 months is chosen, from February 18, 2015 to September 10, 2015. $t = T_0 T_0 + 1$ to $t = T_1 T_1$ constitutes the estimation window, therefore $T_0 = \text{February 18}$. $T_0 = \text{February 18}$. The estimation window includes 143 days in total, ending a few days before the scandal period.

Next, Abnormal Return is defined as a difference between the expected return on stock i at time t and its actual return. For firm i and event date t the abnormal return is:

$$AR_{it} = R_{it} - E(R_{it}|X_t) \quad (1)$$

where AR_{it} , R_{it} and $E(R_{it}|X_t)$ are the abnormal, actual, and normal returns respectively for time period t . X_r is the conditioning information for the normal return model. In this case the market model will be used, defining X as the return of the market portfolio.

Formally, each stock's abnormal return can be measured by estimating the following regression:

$$R_{it} = \alpha_i + \beta_i R_{m_t} + \varepsilon_{it} \quad (2)$$

where R_{it} is the actual return of firm i in the time period t , $R_{m_t} R_{m_t}$ is the return on market portfolio, $\varepsilon_{it} \varepsilon_{it}$ is the error term, $\alpha_i \alpha_i$ and $\beta_i \beta_i$ are estimated parameters. To calculate the actual return, the formula is used:

$$R_{it} = P_t / P_{it-1} - 1 \quad (3)$$

which is the current value minus initial value of a stock and minus one.

Normal returns are estimated with the estimation window data using OLS regression. The next step is to use the parameters from equation (2) to estimate abnormal returns, in this case the data from the event window can be used:

$$AR_{it} = R_{it} - \hat{\alpha} - \hat{\beta} R_{m_t} \quad (4)$$

It is also reasonable to aggregate the abnormal return observations in order to draw overall inferences for the event of interest. The sum of the

abnormal returns of individual stocks over time is called the cumulative abnormal return (CAR), which is a measure of the impact of a scandal on a company's stock return. The CAR is defined by:

$$CAR_{it} = \sum_{t=t_1}^{t_2} AR_{it} \quad (5)$$

To test the null-hypothesis it is needed to conduct a significance test. The t-test is proposed, and p-value is calculated, to test the statistical significance of the results, using MacKinlay (1997) methods. For this purpose, the following formula is used:

$$\frac{CAR_{iT}}{T * Var[AR_i]^{\frac{1}{2}}} \quad (6)$$

where T is the number of days in the event period, in our case including 11 days.

As one cannot be sure, whether the reputational spillovers will be positive or negative, two-sided tests are proposed. To test the statistical significance of Volkswagen's abnormal returns, the paper follows and employs a standard t-statistic. Since negative market reactions for Volkswagen are expected, one-sided tests can be used.

5. Empirical Evidence

5.1 Data

A few German automobile manufacturers were selected for the research. The final sample includes five companies: Volkswagen, Audi, Porsche, which all belong to Volkswagen group and probably will share the same reputational effects, and also BMW and Daimler (Mercedes-Benz). Stock prices of these companies during the estimation and event window period are collected from Bloomberg. Bloomberg L.P. is one of the two leading U.S. providers of financial information to professional financial market participants. The main product is Bloomberg Terminal, through which one can access current and historical prices on almost all world exchanges and many over-the-counter markets. As it has been already described before, the model used for the research is the market model, which requires market portfolio data. Here S&P 350 is used - it's a stock index of European stocks. Using these two resources it is possible to calculate cumulative abnormal returns, which can measure a market value of a certain company.

Another part of our estimation is to compare the sales of each company in Europe and in China. Data on vehicle sales was provided by Wards Intelligence, a company, which specialises on auto industry information since

1924, such as track and interpret market size, trends and movements, delivering forward-looking intelligence, statistics and insight.

Descriptive statistics of the sample is presented below:

Table 1. Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
VW	155	208.2	31.28	106	255.2
Audi	155	846.8	55.72	732.6	934.5
BMW	155	100.3	12.02	75.68	122.6
Mercedes	155	82.81	6.495	63.48	95.79
Porsche	155	76.80	11.14	40.74	94

Note: Note: Unit of observation is stock return. Time period covered is February 2015 to September 2015. Data comes from Bloomberg.

Table 1 offers an overview of the sample, which includes stock prices of 5 German automobile manufacturers during the period from February 17 till September 25 of 2015.

5.2 Empirical Results

5.2.1 Volkswagen

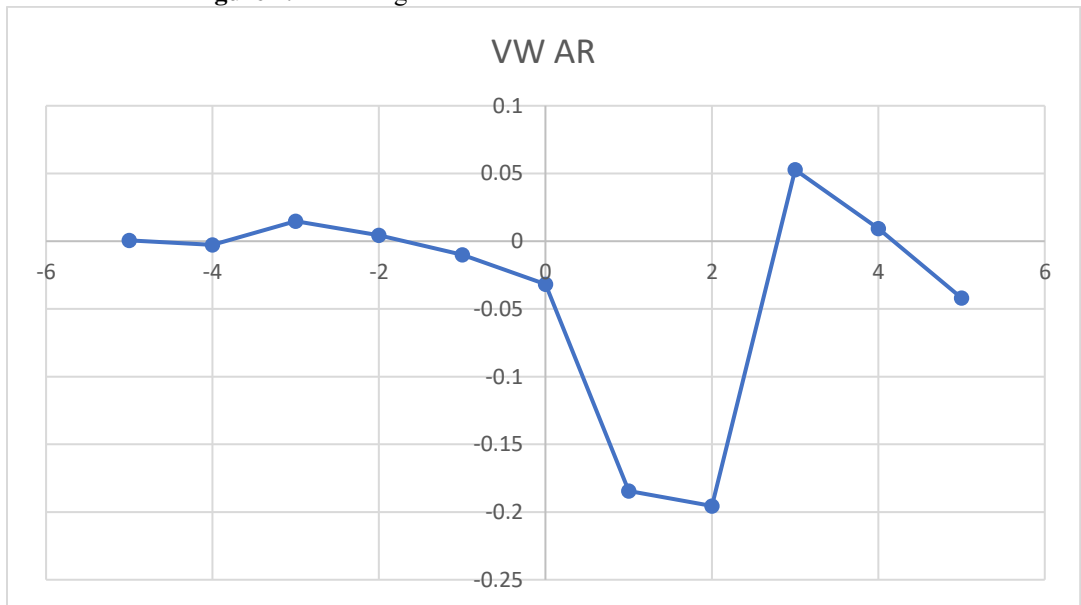
First, consider the effects of the Volkswagen Emissions Scandal on Volkswagen itself. The regression results for each company during the event period are shown in Table 2. Figure 1 presents market reactions for Volkswagen's stocks during the scandal period, which includes 11 days (5 days prior to the official announcement of VW's cheating methods, the event day itself and 5 days after). Abnormal Returns are mostly negative but not significantly different from zero prior to the event. Post-announcement window demonstrates significant and negative abnormal returns, the CAR over the eleven days reached the value of 38%. It is clear that VW's reputation suffered big losses due to the scandal.

Table 2. Abnormal Returns during the event period

Event Day	Volkswagen	Audi	Porsche	BMW	Mercedes
-5	.0006	-.0012	-.0052	-.0071	-.0064
-4	-.0027	-.0010	-.0007	.0015	.0109
-3	.0146	.0705	.0139	.0252	.0157
-2	.0043	-.0011	.0208	.0042	.0035
-1	-.0100	-.0012	-.0087	.0094	.0016
0	-.0317	-.0013	-.0307	-.0303	-.0449
1	-.1844	-.0674	-.1705	-.0136	-.0133
2	-.1955	-.1279	-.1693	-.0556	-.0663
3	.0527	.0080	.0195	.0056	.0015
4	.0093	.0506	-.0022	-.0446	-.0379
5	-.0418	-.0011	-.0301	.0436	.0357

Note: Unit of observation is the daily abnormal stock return. Abnormal returns are calculated using the market model (equation (4)). Automotive stock prices come from Bloomberg. Event Day period includes 5 days prior to the event, the event day and 5 days after, from September 11 to September 25 (some days were not working days).

Figure 1. Volkswagen’s Abnormal Returns in the Event Window

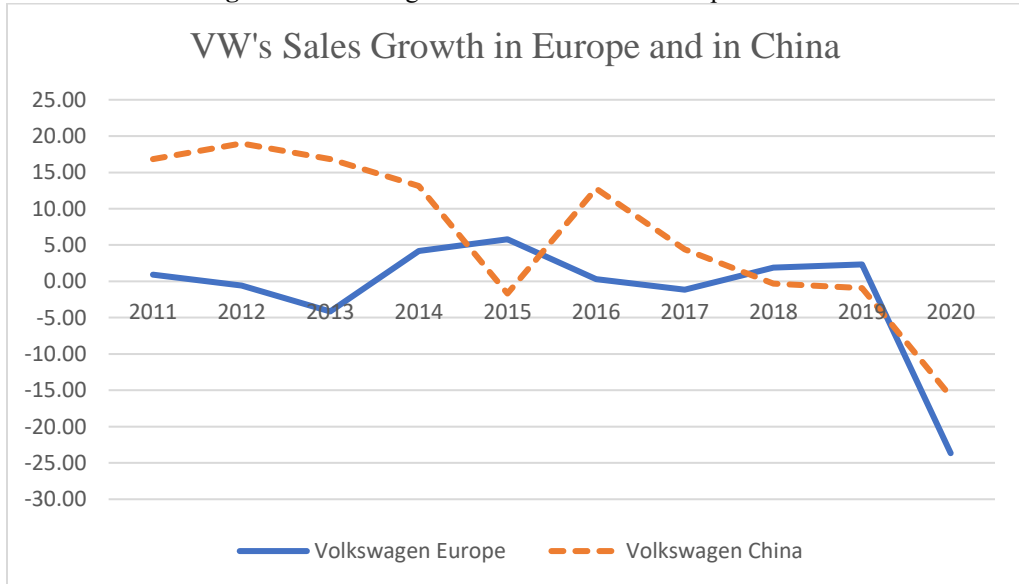


Note: 0 marks the event day of the VW emissions scandal (September 18, 2015) Automotive stock data come from the Bloomberg database.

The second important point of our study is comparison of companies’ performance in two different regions: Europe and China. Next, look at Volkswagen’s sales growth on these two markets by year, from 2011 to 2020. Figure 2 shows the results, which are similar to abnormal returns’ trend, VW’s sales growth in the event year (2015) is significantly declined in China and declines slowly but steady in Europe.

An interesting trend on Figure 2 shows that Volkswagen was able to recover its sales in 2016, the year after the event, followed by a slow decline in the next few years. Comparing China and Europe, the decline in sales growth and further recovery are both much sharper in China and relatively smooth in Europe. This might mirror the society's reaction to the Emissions Scandal.

Figure 2. Volkswagen's Sales Growths in Europe and in China



Note: Dashed line shows the sales growth of VW in China, calculated using equation (7), solid line shows VW's sales growth in Europe, yearly data come from Ward's Automotive and covers the time period from 2011 to 2020.

In the next section reputational spillover effects for rival companies are considered, examining cumulative abnormal returns for each firm and sales growths by year in two regions.

5.2.2 Rival firms' stock price

After performing a regression using the event study method described above with formulas (1) to (5), abnormal returns are examined separately for each manufacturer. The abnormal returns for each firm, including both Volkswagen Group (VW, Audi and Porsche) and 2 rival firms (BMW, Mercedes-Benz), are shown in Table 3. First, the mean results of abnormal returns are summarized, it is clear that all five manufacturers received a negative impact from the scandal (the result for Audi turned out not to be significant, which might be explained by data limitations).

Table 3. Abnormal Returns Statistic

Variable	Obs	Mean	Std. Dev.	Min	Max
VW_return	154	-.0039	.0293	-.1955	.0588
Audi_return	154	.0006	.0179	-.1279	.0715
BMW_return	154	-.0016	.0197	-.0556	.0635
Mercedes_return	154	-.0012	.0201	-.0663	.0578
Porsche_return	154	-.0038	.0263	-.1721	.0498

Note: Descriptive statistics of the daily abnormal stock returns observations. Abnormal returns are calculated using a market model (equation (4)). Automotive stock prices come from Bloomberg. The time period includes both, Event Window and Estimation Window, from February, 2015 to September, 2015.

This paper examines Total Abnormal Returns, to have an overview of the companies' stocks during each day of the event period. Total Abnormal Returns are obtained by summing all the AR during the event window. As a result, there is an obvious reduction in companies' abnormal returns on the event day and the following day as well. The results are summarized in Table 4.

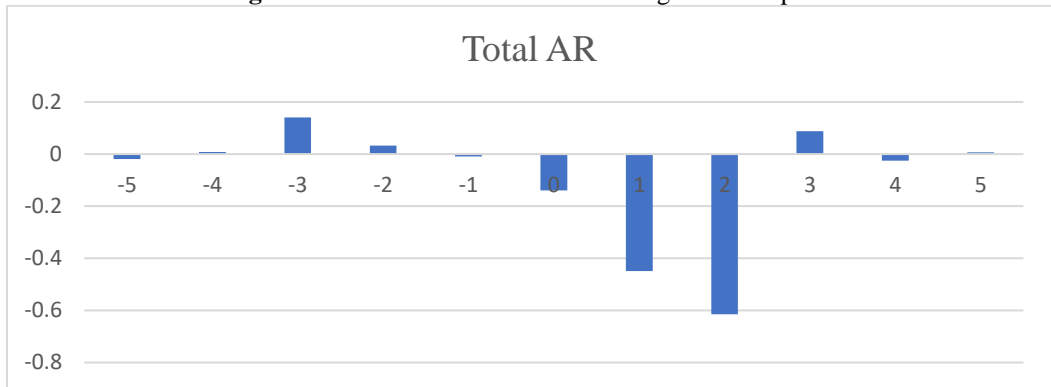
According to our null-hypothesis, when AR are equal to zero, there is no reputational spillover effect on other firms from the same industry. The null-hypothesis can be rejected, as from the Table 4 ARs are close to zero a few days before the event, but on the event day (day 0) and the following two days there is a significant decline in Abnormal Returns, proving a negative spillover effect – the contagion effect, of Volkswagen Emissions Scandal on rival German automobile manufacturers. Figure 3 demonstrates Total Abnormal Returns during the event period visually.

Table 4. Total Abnormal Returns

Event Day	TAR	Std.Dev	t-statistic	p-value
-5	-.0195	.0034	-5.790	4.3848E-08***
-4	.0080	.0054	1.473	0.142713166
-3	.1402	.0242	5.798	4.2261E-08***
-2	.0319	.0084	3.806	0.000209798**
-1	-.0090	.0080	-1.125	0.26245983
0	-.1319	.0160	-8.687	8.4244E-15***
1	-.4493	.0830	-5.409	2.6465E-07***
2	-.6148	.0616	-9.980	4.5020E-18***
3	.0876	.0207	4.212	4.4952E-05***
4	-.0247	.0386	-.6419	0.521959085
5	.0062	.0382	.1630	0.870753836

Note: Unit of observation is total abnormal returns, the sum of abnormal returns during the event period (September 11-25, 2015). Significant levels: *($p < 0.10$), **($p < 0.05$), ***($p < 0.01$).

Figure 3. Total Abnormal Returns during the event period.



Note: 0 is September 18 (the event day).

It can also be noted that the scandal was rather surprising for the stockholders, as prior to the event the stock returns were stable. The day after the bad news broke, total abnormal stock returns for our sample companies declined by 45%, and on the day after – by 60%. The results for the event day and three days after are statistically significant.

After the AR of individual stocks in the event window are calculated, they are summed to obtain the cumulative abnormal return CAR, from which the effects of scandalous events on listed companies in the same industry can be examined. The results of the regression and the two-sided significance test are shown in Table 5:

Table 5. Cumulative Abnormal Returns

Company	CAR	Std.Dev.	t-statistic	p-value
Volkswagen	-.3825	.0805	-4.752	4.89E-06***
Audi	-.0733	.0529	-1.384	.1686
Porsche	-.3635	.0698	-5.206	.0369**
BMW	-.0617	.0293	-2.106	.0010***
Mercedes-Benz	-.0997	.0297	-3.355	6.67E-07***

Note: Unit of observation is the cumulative abnormal returns for the periods before and after the event date. Abnormal returns are calculated using a market model (equation (2)). Automotive stock prices come from Bloomberg. The pre-scandal period comprises September 11, 14, 15, 16 and 17, 2015, and the post-scandal period comprises September 21, 22, 23, 24 and 25, 2015 (Some days are missing for the reason that there are no trades on weekends). Significant levels: *($p < 0.10$), **($p < 0.05$), ***($p < 0.01$).

The results are mostly statistically significant (except for Audi), and all of the five German automobile manufacturers show negative cumulative abnormal returns. Three of these companies (Volkswagen, Audi and Porsche) belong to Volkswagen Group. In Table 5 rival firms (BMW and Mercedes-Benz) experienced a reputational spillover, and the results show the dominance of contagion effect. Volkswagen and Porsche, as both members of the Volkswagen Group, show 38% and 36% percent decline in stock returns

during the event period, which is a significant number. Whereas BMW and Mercedes-Benz, as VW’s rivals, show 6% and 10% abnormal returns decline respectively, showing the contagion effect, but scientifically smaller than the loss, experienced by VW Group itself. This evidence suggests that the Volkswagen Emissions Scandal brought financial harm not only to the company itself, but also to the German rival firms.

5.2.3 Rival firms’ Sales Growth

To compare reputational spillover of German car manufacturers in Europe and in China this paper calculates their sales growths in China and in Europe during the time period from 2011 to 2020 using unit sales data, presented in Table 6 and calculated by the following equation:

$$\text{Sales Growth Rate} = (\text{Current Period Sales} - \text{Prior Period Sales}) / \text{Prior Period Sales} * 100$$

(7)

Table 6. Sales Growth Yearly in Europe and in China (%)

Year	Volkswagen		Audi		BMW		Mercedes	
	Europe	China	Europe	China	Europe	China	Europe	China
2011	0.93	16.83	9.94	26.19	6.55	59.03	1.01	47.76
2012	-0.56	18.99	1.70	27.64	-1.41	51.61	-0.04	14.14
2013	-4.15	16.85	-1.36	25.26	-0.17	37.47	4.44	25.53
2014	4.17	13.14	3.91	24.60	5.12	34.18	5.19	12.87
2015	5.79	-1.66	5.63	-0.59	10.57	3.17	12.33	82.98
2016	0.31	12.78	8.41	5.16	9.88	8.01	13.69	27.98
2017	-1.14	4.42	-0.46	2.39	0.82	24.14	7.98	36.43
2018	1.90	-0.30	-13.33	12.96	-0.76	20.84	-3.13	15.13
2019	2.35	-0.93	3.77	-0.05	0.94	17.09	3.25	16.05
2020	-23.66	-15.84	-18.76	5.80	-18.34	12.40	-17.36	7.60

Note: Unit of observation is sales growth in unit sold, observations for China only include domestic production and doesn’t include imported cars.

Regarding the sales growth, values in Europe and in China appear to be different. Table 6 shows the sales-growth in percentage points for unit sold for four German car companies (Porsche is excluded from the analyses due to lack of data), Volkswagen and Audi, as both members of the Volkswagen Group, show increasing sales in China during the period from 2011 up until the scandal in 2015. In Europe the numbers show much smaller values and even negative in 2013 for most of the companies. Starting from 2015 the situation changed dramatically: sales growths in China for Volkswagen and Audi fell by 15% and 25% respectively, BMW sales fell by 31% in 2015. Surprisingly, Mercedes-Benz shows a great increase in sales growth in China, its sales growth rate increased from roughly 13% in 2014 to 83% in 2015, indicating

possible competitive effect of reputational spillover. Similar to this, Mercedes also increased its sales growth in Europe by 7%, BMW showed an increase of 5% in 2015, Audi increased its sales growth in Europe as well by almost 2% in 2015 and once again 3% in 2016. Volkswagen was able to regain its sales volume growth in China in 2016 back to almost 13% with the help of new car models, whereas in Europe that year the sales were extremely low after the scandal

The following years, Volkswagen sales growth remained rather low both, in Europe and in China. Audi recovered partly in 2018, but still, the sales growth rate is far different from the one in the previous years in 2011-2014 in China. However, the rival firms show an interesting trend, and both BMW and Mercedes-Benz still have a high sales growth rate in China, even though the Corona Crises brought large difficulties to all the manufacturers. This proves that while the Volkswagen Group was struggling to regain its reputation, rival firms were taking over the market share both in China and in Europe.

To exclude exogenous factors and test what effect the Volkswagen Emissions Scandal had on the sales growths of German car manufacturers, the difference-in-differences (DiD) regression approach can be used. This method is based on a combination of before-after and treatment-control group comparisons and is one of the most frequently used methods in impact evaluation studies (Fredriksson, 2019; Lee and Sawada, 2020). DiD method strongly relies on the parallel trends assumption, which states that the treatment group, absent the reform, would have followed the same time trend as the control group. It is therefore rather difficult to choose a suitable control group. This paper used sales data for several non-German automobile manufacturers as the control group that were chosen based on the parallel trend assumption. Selected firms are presented in Table 7.

Table 7. Sales Growth Sample Companies

Audi	Ford	Morgan
Baojun	Geely	Mercedes-Benz
Bestune	Haima	Nissan
BMW	Honda	Opel
Buick	Hyundai	Peugeot
Chevrolet	JAC	Renault
Citroen	Jeep	Subaru
Dongfeng	Kia	Suzuki
FAW	Lifan	Toyota
Ferrari	Mazda	Volkswagen
Fiat	Mitsubishi	Volvo

Note: Data is obtained from Ward's Automotive, it includes German and non-German automobile manufacturers from different countries.

The coefficients are estimated separately for each treated firm (VW, Audi, BMW and Mercedes) to compare the differences of the reputational

spillover effect on every company and also to see the effect for VW Group itself. The following equation is used for difference-in-differences estimation:

$$y_{it} = \alpha + \beta_i + \gamma_t + \delta T_{it} + \varepsilon_{it} \tag{8}$$

where y_{it} is company's i sales growth rate at the time t , β_i is company's fixed effect, taking value 1 if it's a treated company (German car manufacturer) and 0 for non-German manufacturers, γ_t is time fixed effect, taking value 1 during the event time (2015-2016), T_{it} is an indicator taking value 1 for German automobile manufacturers during the event time, ε_{it} is the error term. The results of the DiD regression are shown in Table 8. Panel A stands for sales growth in Europe and Panel B shows values in China.

Table 8. Difference-in-differences estimation results: German vs. non-German manufacturers

Company	DiD	z-statistic	p-value
<i>Panel A: Europe</i>			
Volkswagen	-.0383 (.0142)	-2.69	.007***
Audi	-.0157 (.0142)	-1.10	.270
BMW	.0077 (.0142)	0.54	.587
Mercedes-Benz	.0493 (.0142)	3.47	.001***
<i>Panel B: China</i>			
Volkswagen	-.0524 (.0621)	-0.84	.399
Audi	-.1430 (.0621)	-2.30	.021**
BMW	-.2524 (.0621)	-4.06	.000***
Mercedes-Benz	.2023 (.621)	3.26	.001***

Note: Unit of observation is sales growth in units sold, observations for China only include domestic production and don't include imported cars. Control groups for DiD estimation include non-German car manufacturers based on parallel trends assumption. Panel A presents results for sales growth in Europe, Panel B shows the results for China. Standard errors clustered at vehicle level in parentheses. Data comes from Ward's Automotive. Time period

includes annual sales from 2000 to 2019 for Europe and from 2011 to 2019 for China. Significant levels: *($p < 0.10$), **($p < 0.05$), ***($p < 0.01$).

Overall effect in China is much greater than in Europe. These results show that reputational spillovers, competitive and contagion effects, depend not only on the rival firms' size and competitive abilities, but also on geographical locations. The effects for the same companies differ in Europe and in China due to external factors, such as market's features and consumers' preferences and psychology.

The DiD coefficients are negative for Volkswagen and Audi in both regions, Europe and China, which indicates sales growth drop for Volkswagen Group after the scandal. Volkswagen's sales growth dropped by 5%. Audi showed no significant effect in Europe, but a 14% decrease in China. BMW experienced a negative spillover effect greatly in China, where its sales growth decreased by 25%, on the contrary, it increased in Europe, although this result is not significant. Mercedes-Benz, on the other hand, experienced a significant positive effect both in Europe and in China, increasing its sales growth by 5% and 20% respectively.

5.3 Discussion

The results illustrate that the Volkswagen Emissions damaged not only VW's reputation, but negatively affected the whole German automotive industry as well. When rival firms are not able to effectively differentiate themselves from the fraudulent firm, they are more likely to suffer contagion effects of the reputational spillovers (Ouyang et al., 2020). Companies' different strategies on European and Chinese markets can help the differentiation. BMW experienced different effects on the European and Chinese market, indicating that its strategy was more successful and more suitable for the European market. Mercedes-Benz, on the other hand, was able to increase its sales on both markets, as its reputation was less damaged despite the scandal, possibly due to its successful business model and differentiation from Volkswagen.

As Zhang and Schweiger (2009) stated in their study, social responsibility is the second strongest driver of corporate reputation in China. When the Emissions Scandal became public, it was clear that Volkswagen showed its lack of responsibility for public health and ecological situation in the world, losing trust of Chinese consumers. Although the sales growth reduced in Europe as well, the scale in China was much larger, compared to European countries. Mercedes-Benz, on the other hand, showed a strong competition effect, increasing its sales in China during the scandal period. It also proves that with good marketing strategies, successful differentiation and

management a company can increase its chances of gaining from the scandal, rather than receiving a contagion effect.

Although Volkswagen experienced a negative effect of the Emissions scandal on its sales and stock price, it was still able to keep its sales high in China, especially in 2016. It can be explained by VW's strength in the Chinese market, which can be linked to the company's long-standing relationship with the country's car buyers. In addition, the brand's Chinese offerings are almost exclusively gasoline powered. This means that VW's operations in the country were not really exposed to the 2.0-liter, diesel, four-cylinder engine at the heart of the scandal that affected more than 11 million cars worldwide. It can be assumed that once consumers realised that the scandal only refers to diesel cars, the sales volume went back to rising. Another reason is China's tax cut on small-engine cars in 2016, but growth was expected to slow in 2017 as the incentive is reduced (Reuters, 2017).

The question remains, why is there a difference in companies' reaction to the Emissions scandal? For Mercedes-Benz 2015 was the most successful year in the history of the company, its sales in China rapidly increased, nearly taking over the market. According to its annual report, this growth might be explained by Mercedes' product offensive strategy, where the brand aimed to launch various new models before the end of the decade and to become the world's largest premium automaker. This also warranted large amounts of investment in research and development, and capital expenditure, to expand the production footprint. While large costs had kept Mercedes' margins subdued till a couple of years back, the benefits of efficiency programs, the higher price of new models, and more volume sales, have boosted the brand's profitability more recently (Daimler, 2015). Evidently, with effective crisis management and strong competitive ability, it is more likely for a company to enjoy a competitive effect of reputational spillover, rather than a contagion effect. This evidence might be of use for rival firms in planning sales strategy and competition strategy as well.

Conclusion

This paper investigates the reputational spillover effect on the rival firms from the same industry, using the Volkswagen Emissions Scandal case as a natural experiment. The research considered Volkswagen Group, represented by Volkswagen, Audi and Porsche, and other German automobile manufacturers, represented by BMW and Mercedes-Benz. Using the event study method the results find that all the German car companies suffered from a negative impact of the scandal, which is shown by negative cumulative abnormal returns, although the effects were much smaller for BMW and Mercedes-Benz. This result proves the contagion effect of the reputational spillover. The paper also conducted a comparison of the four firms' sales

growth in Europe and in China, followed by the difference-in-differences estimation, and find that the negative effect for the Volkswagen Group was even larger in China, but Mercedes-Benz was able to gain from the scandal and increased its sales growth in China in 2015-2016 (scandal period). These results are in line with our theoretical hypothesis: firstly, rival firms from the same industry will experience either competitive or contagion effects; secondly, the effects in China and in Europe will differ, due to special features of the countries and their consumers.

This paper contributes to the literature by providing empirical support for the theoretical literature on collective reputation. Our results suggest that policy makers as well as companies' managers could make some steps in addressing collective reputation, which might help large companies to internalize their potential reputation spillovers. This paper argues that some companies, for example, Mercedes, were able to gain from the scandal, which gives policy makers the evidence that with the right management it is possible not only to avoid negative effects of the reputational spillovers, but also to benefit from it, receiving a competition effect. The results also find that there are geographical differences regarding the spillover effects, therefore it can be suggested to the policy makers to consider local consumers' psychology and market's characteristics when developing a strategy.

However, the research has several limitations that offer opportunities for future research. In this paper only stock returns and the sales growth rate are compared across countries, which might not be a perfect way of measuring a company's reputation. Other methods of measuring corporate reputation also exist, for example, a new developed method via social media reaction (Rust, 2021). The results might differ, depending on the research method and considered factors (stock price, bonds, sales growth, social reaction, CDS etc.). Another problem is the sample size, as this research considers only German car manufacturers, their number is rather small, which limits the companies sample size to only five major manufacturers. Future research could possibly focus on another industry that would offer a larger sample size and more variety for investigating reputational spillovers.

Corporate reputation and reputational spillovers are a very discussed topic in existing literature, but researchers mostly focus on a company's stock price and often ignore possible geographical differences. This paper suggests that future research could focus on rival firm's performance on different markets, comparing contagion and competitive effects for the same companies across different countries.

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Las TIC y el e-learning y su influencia en el proceso de enseñanza aprendizaje del idioma Inglés en estudiantes de educación superior

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Resumen

En este artículo se reflexiona desde el punto de vista conceptual, sobre la influencia que las Tecnologías de la Información y la Comunicación (TIC) y el impacto que éstas han generado en los procesos de enseñanza/aprendizaje. La educación superior en Colombia ha venido transformándose en las

recientes décadas, con miras a responder de manera decidida a los requerimientos de una sociedad renovada, que busca contar con profesionales más hábiles, que gestionen eficientemente procesos administrativos y académicos en Instituciones de Educación Superior en estos tiempos de globalización económica. La metodología utilizada en este estudio se enmarca en la revisión documental de investigaciones y publicaciones efectuadas en los últimos diez años. Los resultados apuntan a que las TIC han aportado considerablemente a diferentes aspectos neurálgicos, en el contexto educativo y que las aplicaciones en los procesos pedagógicos son cada vez mayores.

Palabras claves: TIC, E-Learning, Enseñanza, Inglés, Educación Superior

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Abstract

This article reflects from the conceptual point of view, on the influence that Information and Communication Technologies (ICT) and the impact they have generated in the teaching / learning processes. Higher education in

Colombia has been transforming in recent decades, with a view to responding decisively to the requirements of a renewed society, which seeks to have more skilled professionals, who efficiently manage administrative and academic processes in Higher Education Institutions in these times of economic globalization. The methodology used in this study is part of the documentary review of research and publications carried out in the last ten years. The results suggest that ICTs have contributed considerably to different neuralgic aspects in the educational context and that the applications in pedagogical processes are increasing.

Keywords: ICT, E-Learning, Teaching, English, Higher Education

Introduction

La sociedad actual, retratada por un escenario de globalización y por el rápido desarrollo de las Tecnologías de la Información y la Comunicaciones (TIC), ha incentivado a la creación de mecanismos y/o componentes para la integración de diversos avances tecnológicos en diferentes ámbitos monetarios y sociales (Baller, Dutta, & Lanvín, 2016). El ámbito escolar no se aleja de esta realidad, incluyendo las TIC como una maravilla ineludible con un alto índice en el ámbito instructivo, por la necesidad de avanzar en el desarrollo y la innovación, en el que se deben delinear las Instituciones de Educación Superior (IES), para la operacionalización de los considerables capacidades (Sanz & Crissien-Borrero, 2018).

De esta manera, el marco de enseñanza-aprendizaje se ajustará en general a estos cambios, a través de la elaboración de estrategias instructivas que incluyan estas herramientas en los entornos de aprendizaje (Herrera, 2015), Desde un punto de vista técnico, las TIC se fundamentan en: los referentes relativos a las tecnologías de la comunicación (medios de radiodifusión, televisión y telefonía, entre otros) y las tecnologías de la información, que engloban los mecanismos en los cuales se almacenan y gestionan datos e información (Ausín, Abella, Delgado, & Hortigüela, 2016).

Desde una perspectiva mundial, las TIC se relacionan con los componentes y herramientas a través de los cuales se pueden preparar, almacenar y distribuir datos de diferentes fuentes. Convertirse en un componente particular de innovación que retrata la cultura actual y que está afectando el aprendizaje de las personas y las formas habituales de difusión de información (Zempoalteca, Barragán, & González, 2017). En particular, en el entorno instructivo, las TIC se relacionan con un conjunto de aparatos de ayuda mecánica para que los educadores fortalezcan la medida de aprendizaje de la instrucción en todos los grados de formación (Arancibia, Contreras, & Soto, 2010).

Según lo indicado por la Organización de las Naciones Unidas para la Educación, la Ciencia y la Cultura (UNESCO), la mecha de las TIC en la educación avanzada se utiliza para mejorar la exhibición de materiales, compartir contenido y mejorar la correspondencia entre los animadores en el ciclo instructivo, avanzar y fomentar la investigación y trabajar con ciclos regulatorios institucionales, entre otros (UNESCO, 2013). En muchas IES, las TIC se han adoptado como un método para el cambio y la mejora de las medidas de instrucción de aprendizaje en el marco escolar, luego de sacar a la luz los problemas de las limitaciones y elementos utilizables (Koh, 2015). Sea como fuere, la utilización y ejecución de las TIC no es inseparable del logro asegurado en cuanto a la creación de sistemas productivos para la creación y difusión de información. De ahí que sea fundamental avanzar en espacios con las condiciones adecuadas para el mayor aprovechamiento de estos aparatos (Ausín, Abella, Delgado, & Hortigüela, 2016).

Las TIC en el mundo

La sociedad a nivel mundial se ha visto bastante afectada por el impacto que generan las TIC en la totalidad de las mediciones; Los cambios sociales, monetarios, instructivos y sociales han hecho concebibles nuevas situaciones donde el individuo ha fortalecido cada uno de los puntos de vista que se han propuesto buscando un despliegue más agradable y estable como lo indican los supuestos de vida (Jin y Cho, 2015). Asimismo, las perspectivas de utilidad y administración han cambiado significativamente, llegando a niveles de grandeza nunca vistos, donde usuarios y clientes obtienen colosales ventajas derivadas de los avances logrados tanto en tecnología como en datos (Pérez & Olguín, 2018).

Según investigaciones de diferentes enfoques realizadas por diferentes organizaciones, los impactos más destacados de las TIC a nivel mundial tienen que ver con la universalización de las cosas, ya que en la medida en que las tecnologías y la dispersión de datos se han desarrollado a raíz de avances conocidos, ha sido factible interconectar el mundo entero en todos los espacios, fomentando focos de encuentro progresivamente líquidos, dinámicos y serios, lo que sin duda ha cultivado la prosperidad y el desarrollo financiero de algunas redes (Asongu, 2017).

En temas de sectores particulares existen numerosos modelos a los que se puede hacer referencia, ya que desde los masivos sistemas de transporte, bienestar, creación de productos e incluso proyectos escolares, en igualdad de condiciones, se han visto mejoras y avances que han hecho concebible abreviar distancias, recortar tiempos de consideración, realizar procedimientos no contemplados y avanzar en la cercanía entre comunidades urbanas y partidos creados, lo que sin duda ha hecho concebible el lanzamiento de una

sociedad virtual donde la presencia real no es fundamental para hacer giros de eventos o ciclos para acabar (Baldassar, 2016).

Las TIC en el contexto educativo

En el ámbito instructivo, las TIC se han incorporado últimamente, con especial ímpetu específicamente en los procesos de enseñanza/aprendizaje. Esto ha desencadenado una progresión de cambios en la cultura actual, identificada con la producción de condiciones de aprendizaje menos inflexibles, en las que el factor fugaz o área espacial está a todos los efectos excluido. Las TIC han ocupado espacios que antes no se pensaban en la formación convencional (Cabero J., 2010).

En esta situación, es pertinente hacer referencia a la importancia de los locales avanzados, un término escrito por Prensky (2001), quien sostiene que el diseño de razonamiento no es del todo el mismo que el de los individuos que no experimentaron la infancia en el clima informatizado actual. En consecuencia, esta era de lugareños avanzados probablemente piensa de manera única en contraste con el resto de las edades pasadas. En este sentido, para los locales informatizados, la implicación con la utilización de las TIC plantea nuevos requerimientos en las medidas de aprendizaje, que el marco instructivo pretende atender. El suplente contemporáneo utiliza la innovación como instrumento esencial en el escenario individual y espera que también lo sea en el instructivo. En cualquier caso, no debería ser normal que todos los locales informatizados estén equipados para recibir información interna y externa sobre el uso de las TIC de forma natural, ya que las habilidades e información sobre innovación cambian según lo indican los atributos específicos de cada persona (Bello, 2018).

Tomando como premisa la forma en que los locales computarizados tienen habilidades más destacadas en la utilización de activos mecánicos, y que la perspectiva se ajusta parcialmente a ellos, el educador se convierte en un guía cuyo objetivo fundamental es trabajar con la conveniencia de los métodos innovadores, para propósitos instructivos útiles. Esta utilización puede percibirse, en la educación avanzada, como el intercambio competente de información que insta al estudiante a comprender y crear nueva información (Asongu, 2017).

Aplicaciones de las TIC en el ámbito educativo

Contemplando las hipótesis referidas hasta ahora, se ha demostrado que las técnicas de instrucción / aprendizaje han avanzado a espacios de mayor adaptabilidad, desarrollo e innovación. Asignar al educador la tarea de planificar mejores enfoques para avanzar en el nombramiento de información por parte de los estudiantes suplentes y para tratar diferentes métodos de correspondencia con los estudiantes suplentes (Albion, 2015).

Como se puede encontrar en la figura 1, la conciliación en un plano similar de puntos de vista, por ejemplo, la adaptabilidad, el avance y la imaginación, hacen avanzar una situación de uso de metodologías académicas mucho más extensas que las utilizadas hasta años y años antes; potenciando ciclos relacionados y dando espacios, ya no pensados, que trabajarán con la comunicación entre los diferentes animadores. Es imperativo resaltar que para el fortalecimiento de las TIC en escenarios instructivos, como aparatos que avanzan en el desarrollo de las medidas muestrales, las metodologías no deben ser aplicadas exclusivamente desde la metodología académica, también deben generar situaciones de actividad en las que se potencie la asignación de avances. En el modelo instructivo, en la creación de materiales computarizados, la preparación de educadores para la utilización significativa de las TIC y la exploración identificada con TIC e Innovación (Marín, Inciarte, & Hernández, 2017).

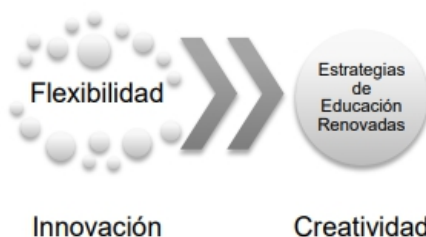


Figura 1. Estrategias Enseñanza /aprendizaje utilizando TIC
Fuente: (Albion, 2015)

Las TIC ofrecen los instrumentos para la producción de tales situaciones y potencian la planificación y ejecución de nuevas técnicas académicas. Un ejemplo de esto es la utilización de Ambientes Virtuales de Enseñanza - Aprendizaje (EVEA), operacionalizados a través de etapas virtuales, que permiten la comunicación entre instructores y estudiantes suplentes en torno a una sustancia en particular, y utilizando estrategias y métodos claros, para mejorar las habilidades y producir información en un formato de manera significativa (López & Hernández, 2016). En un orden específico de pensamientos, la variedad de dispositivos que existen hoy, por ejemplo, teléfonos celulares y tabletas, pueden coordinarse sin mucho esfuerzo en este entorno avanzado, para reproducir espacios creativos que animan el aprendizaje.

E-Learning en la educación superior.

Los autores Zempoalteca, et al., (2017) caracterizan el E-Learning como una pieza de educación a distancia que ejecuta avances utilizando estrategias simultáneas y poco convencionales para introducir datos, utilizando más de un método para la correspondencia, ya sea video, sonido o

movimientos para ver, hacer o mejorar los materiales del espectáculo. El plan incorpora ángulos instructivos, innovadores y autorizados.

En esta línea, el creador Álvarez (2012) hace referencia a que los LMS tienen una progresión de cualidades Número de clientes, tipo de trabajadores, bases de información, determinación de E-Learning (AICC y SCORM), creación de contenidos y el tablero, orientación en Salas reales y virtuales, trabajo conjunto (charlas, tertulias, mail, tertulias de trabajo), multilinguaje, que permiten ayudar a los instructores y suplentes en los ejercicios escolares.

Además, Alsabawy, Cater-Steel (2013) presentan que la evaluación de los marcos de E-Learning es fundamental para medir la prosperidad, así como para la propia administración y mejora. Reflexionan sobre un modelo de evaluación que incorpora: administraciones marco, utilidad, cumplimiento, valor del cliente y estima de la asociación. Ausín, et al., (2016) Presentan un modelo de evaluación dependiente de la Web no concurrente y las sugerencias, considerando el cumplimiento y ejecución global de los estudiantes suplentes e instructores, la asociación y la junta de aprendizaje, cooperación y comunicación entre ellos.

Simultáneamente, se introducen algunos escenarios para la evaluación del E-Learning: ángulos especializados y útiles, efecto de los ciclos psicológicos, influencia en los ciclos de cooperación y reconocimiento del E-Learning. El creador Deveci (2016) habla de que para evaluar y conocer la realización del E-Learning, se debe ponderar los materiales y la utilización de aparatos especializados, la comunicación entre estudiantes suplentes, el plan del clima educativo, la conducta hacia el curso y el sustancia del curso en la interacción educativa.

La felicidad con respecto al curso se puede romper adicionalmente con el reconocimiento de los materiales, la apreciación por el contenido y la educación, los aparatos de contenido dependientes de las necesidades de los estudiantes, la cooperación simultánea y poco convencional, la disposición de los estudiantes hacia el aprendizaje electrónico, la variedad en el evaluación y práctica de actividades, clima del plan, inspiración y moderación del aprendizaje. Alsabawy, Cater-Steel (2013) planificaron y evaluaron un modelo para la administración de la medida de E-Learning, asumiendo que existe una conexión entre la organización y control de ciclo con resultados de aprendizaje.

Marshall (2012) especifica que el modelo de desarrollo de E-Learning (EMM) ofrece un sistema de mejora de la calidad que estima a las organizaciones y las impulsa a lograr un E-Learning manejable. Las medidas de EMM se evalúan completamente de acuerdo con la transmisión, la disposición, la definición, el tablero y el avance. El instrumento utiliza registros institucionales y pruebas de cursos, al igual que el límite del establecimiento en la ayuda operativa del E-Learning.

Los objetivos del EMM son relevar y diseccionar la evaluación y conectar límites explícitos y límites generales, así como insuficiencias para reconocer los procedimientos para que los jefes de las fundaciones realicen cambios, ayudando a los establecimientos a desarrollarse. Las tecnologías de la información y correspondencia (TIC) se han convertido en instrumentos cruciales en diferentes partes de la vida actual. Es difícil pensar en el mundo sin PC que permitan el acceso a Internet, organizaciones informales y todos los métodos virtuales de correspondencia que funcionan con contacto y esfuerzo coordinado entre individuos (Marshall, 2012).

En esta línea, el surgimiento de nuevos avances y métodos de trabajo ha hecho que los expertos, y en particular los instructores entre ellos, fomenten habilidades y capacidades para utilizar adecuadamente los dispositivos mecánicos. Teniendo en cuenta que la educación superior se enfrenta a la prueba de preparar expertos y residentes aptos para afrontar las demandas del lugar de trabajo de la sociedad del siglo XXI, Albion (2015), insiste en que una de las dificultades de los colegios es preparar individuos equipados, para lo cual los instructores actuales deben tener una progresión de cualidades que les haga desempeñarse aceptablemente en clase y en la vida diaria (Baldassar, 2016).

La realidad actual tiene una prueba increíble debido a la pandemia de COVID-19, la Organización Mundial de la Salud (OMS), ha anunciado la infección como una pandemia por la velocidad de propagación y el gran tamaño de enfermedad, posteriormente, en muchas naciones del mundo, los gobiernos han venido tomando medidas para prevenir la propagación, siendo en el marco instructivo la conclusión de fundamentos instructivos. Según el informe presentado por la UNESCO en abril de 2020, el rápido efecto de COVID-19 ha influido en alrededor del 70% de la población de estudiantes suplentes del mundo (Pérez & Olguín, 2018).

Como opción frente a esta realidad, los medios informatizados se han convertido en un instrumento imprescindible para la escolarización, con el único objetivo de seguir aprendiendo medidas prácticas. En la mayoría de las naciones (29 de las 33), se han establecido tipos de progresión de estudios en diferentes modalidades a distancia. Entre ellos, 26 naciones llevaron a cabo tipos de aprendizaje basado en la web y 24 establecieron técnicas de aprendizaje a distancia en modalidades desconectadas, recordando 22 naciones para las cuales se ofrece educación a distancia en las dos modalidades (desconectado y en la web), 4 que consultan solo en línea y 2 con modalidades simplemente desconectadas (CEPAL-UNESCO, 2020).

Siguiendo con el informe elaborado por la Comisión para América Latina y el Caribe, entre las modalidades de aprendizaje a distancia en línea utilizadas en todo el mundo, destaca la utilización de etapas virtuales de aprendizaje no concurrente, utilizadas en 18 países, mientras que solo 4 países

ofrecen clases en vivo (Bahamas, Costa Rica, Ecuador y Panamá). Así, entre los tipos de educación a distancia desconectada, 23 naciones transmiten proyectos instructivos a través de medios convencionales como la radio o la televisión (CEPAL-UNESCO, 2020).

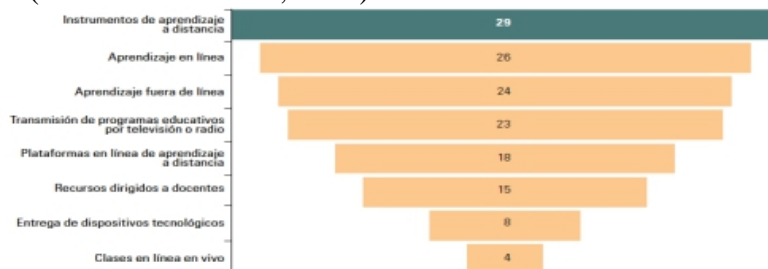


Ilustración 1: Estrategias de continuidad de estudios en modalidades a distancia.
Fuente: (CEPAL-UNESCO, 2020)

Es imprescindible precisar que según Horacio, et al., (2020) los arreglos recibidos por las naciones se han centrado principalmente en la transmisión de sustancia en correspondencia con el plan educativo escolar. La oportunidad se ha basado en los límites de la base anterior y la sustancia accesible para fabricar un modelo de instrucción a distancia, rápido y en crisis (Hodges, 2020).

Esta metodología de aprendizaje a distancia se está completando en un tiempo y velocidad fenomenales, y se describe por tener una combinación de arreglos y medios originales (materiales impresos, radio y televisión y una segunda era (etapas, los marcos ejecutivos de descubrir cómo) para transmitir contenido y mantener cierto grado de conexión entre las escuelas y los estudiantes suplentes. Estas diversas modalidades requieren un respaldo constante, una orientación, que ha sido muy heterogénea entre los marcos (Horacio, Ortiz, & Bergamaschi, 2020).

Una de las modalidades de instrucción que utiliza datos e innovaciones de correspondencia es la escolarización combinada, en la que la combinación entre el modelo vis-à-vis y el modelo e-Learning (este tipo de educación basada en la web permite al cliente conectarse con el material utilizando diferentes Dispositivos PC). Uno que complementa y orquesta dos opciones que, hasta un par de años antes, parecían estar en conflicto para muchos: prepararse cara a cara con prepararse a través de las TIC. En este nuevo tipo de preparación, dispositivos especializados como el correo electrónico, los registros de apropiación o el Chat plantean la necesidad de preparar a los dos instructores y suplentes para una utilización suficiente, razonable y significativa de los mismos (Cabero, Llorente, & Román, 2015).

En vista de lo anterior, en estos días no se trata, en este punto se habla de si coordinar los avances de datos y correspondencia - TIC - en las

Instituciones de Educación Superior (IES), sino cómo hacerlo de manera que se potencie lo que debería ser posible. manejarse sin ellos, considerando avanzar, complementar y realizar grandes actos adaptables de instrucción ojo a ojo, un número significativo de los cuales generalmente son respaldados por diferentes medios que no son PC, al incluir ejercicios de aprendizaje que utilizan las TIC, independientemente de si dichos ejercicios son o no ojo, semi - cara a cara o de lejos. En cualquiera de estas situaciones, el educador sigue siendo un componente esencial, como coordinador y guía de las medidas de aprendizaje progresivamente autónomas y auto controladas y como orquestador de los activos instructivos que la fundación e internet ponen al alcance de los estudiantes (Cabero, 2010).

Esta metodología de E-Learning que respalda la medida de educación y aprendizaje explícitamente a las de carácter universitario, tiene como quizás el mejor impedimento la ausencia de ingreso a PC en regiones del país, huecos avanzados, carencias subyacentes, competencia computarizada en instructores y delegados. A esto se suma el gasto humano que esta diferencia de situación desde el aula hasta el PC implica para algunos docentes que deben acomodar los factores apremiantes del mundo experto con el mundo familiar. Todo lo anterior nos permite considerar como motivación de esta exposición, examinar la utilización y desarrollo del E-Learning en la educación avanzada, para lo cual se realizó un ciclo de relevamiento de fuentes narrativas innatas a la asignatura, artículos explícitamente lógicos, trabajos de evaluación, con lo que se ampliará la información sobre este espacio de conocimiento (CEPAL-UNESCO, 2020).

Aprender inglés se ha convertido en una necesidad para el marco instructivo chileno. Las entradas sociales y sociales que se abren para las personas que se comunican en este idioma se suman a las financieras, ya que el orden del inglés les permite obtener más vacantes de investigación y trabajo. Frente a esta exhibición, y con la plena intención de lograr la satisfacción del individuo de manera básica, la utilización del inglés ha sido considerada como una de las necesidades que orientan los acercamientos del público chileno. El Ministerio de Educación ha realizado el ingreso a la enseñanza de un dialecto desconocido a través de la interacción instructiva de los jóvenes chilenos, que se inicia en el segundo patrón de formación esencial (10-11 años) y prosigue hasta el cuarto año de secundaria (17). - 18 años de edad). La sustancia de autoridad pública anuncia que la motivación detrás del subsector de dialectos desconocidos en la Educación Secundaria es dotar a los estudiantes de un instrumento que les permita acceder a datos, información y avances, así como diferentes formas de vida, costumbres y perspectivas (Mineduc, 2020).

A esto se suma el desarrollo inventivo que está desarrollando el país. La organización de asociaciones de PC, por ejemplo, Internet es básica en varios deportes útiles y funciona. Además, ha surgido la necesidad de fusionar

estos desarrollos en las prácticas informativas, como un segmento de nuevos métodos instructivos. Posteriormente, la utilización del desarrollo en la enseñanza del lenguaje es un factor de evidente aplicación en la realidad instructiva chilena. En consecuencia, es importante llegar a un arreglo que aborde otra reevaluación de las exhibiciones educativas que se entregan a partir de elementos genuinos reproducidos y que intentan sumergirse en mejores soportes especulativos y sensibles que directamente influyen en el aula. Con esta visión, el límite con respecto a la intervención ensayada por los sistemas de PC es enorme, ya que se trata de auténticos 'gadgets fonéticos' (López y Gallardo, 2005) aptos para mostrar una variedad de efectos sobre el aprendizaje (Mineduc, 2020).

En esta circunstancia concreta, surge la preocupación por conocer la perspectiva de dos animadores principales en la medida de educar y aprender: suplentes e instructores. Desde una perspectiva, se ha considerado aplicable para comprender las intuiciones de los educadores sobre el ciclo instructivo intervenido por los avances. Por otro, se propone comprender la impresión de estudiantes suplentes que buscan prepararse en la creación y comprensión del inglés, y que cuentan con métodos innovadores durante la interacción. Este artículo está dividido en cuatro partes fundamentales: comienza con el sistema hipotético y va seguido por el plan del examen, los resultados para incorporarlos en las últimas contemplaciones. El examen está incrustado en lo que respecta al proyecto FONDECYT (N° 1120247) (Mineduc, 2020).

¿Qué concebimos por e-learning?.

La traducción literal al español nos llevaría a una concepción de “aprendizaje electrónico”, no obstante Martín Hernández (2006) señala la concepción compleja del e-Learning que engloba aquellas aplicaciones y servicios que, tomando como base las TIC se orientan a facilitar el proceso de enseñanza-aprendizaje. Esta complejidad conceptual así como la diversidad de términos, conceptos y vocablos que se utilizan de forma indiscriminada para referirse a un sistema de formación singular, nos llevan a matizar lo que se entiende por e-Learning (Martín Hernández, 2006).

Una de las principales definiciones que se ha descubierto identificadas con e-learning es la creada por la Dirección General de Telecomunicaciones en 1996. Esta definición, a pesar de que no hace una referencia expresa al término e-adapting todavía utiliza la palabra teleeducación, mencionó cómo el avance de la medida de preparación a distancia (controlada o no dirigida) se puede caracterizar bajo esta marca, que, en vista de la utilización de innovaciones de datos y telemática, potencia la mejora de la educación, adaptable y abierto a descubrir cómo a cualquier beneficiario imaginable (Moptma, 1996).

Azcorra (2001) comprende la teleformación o e-learning como una forma de aprendizaje a distancia de carácter abierto, inteligente y adaptable que se crea a través de los nuevos avances en datos y correspondencia, explotando lo más importante las ventajas que ofrece Internet. Por otra parte, Bartolomé (2004) llamó la atención sobre cómo el e-learning alude al avance de la preparación a distancia apoyado en los resultados potenciales instructivos que tienen las TIC, mientras que Area (2004) mostró que la preparación es un componente natural del e-learning, no una casualidad real entre instructor y suplente así como la utilización de las TIC para la mejora de la preparación.

Como se puede observar, el e-learning se ha relacionado de manera global con el avance de los encuentros intuitivos, abiertos y adaptables que no preparan ojo a ojo, que tienen en las TIC, y fundamentalmente en Internet, la ayuda crucial para el turno de trabajo. En este sentido, se coincide con Rosenberg (2001) al mostrar que el e-learning es un tipo de instrucción a distancia, pero que no toda la educación a distancia se compone de e-learning.

E-learning y educación.

La presentación del e-learning en la escuela va más allá de la presentación de las TIC en ciclos instructivos y tiene los aliados académicos fundamentales de la misma en los estándares de asociación y coherencia creados por Dewey. En esta línea, la acogida de las conjeturas e-learning supone una garantía para un modelo académico donde los estudiantes suplentes asumen una responsabilidad más destacada en la escolarización, sumando al avance de la competencia en la medida de aprendizaje instruccional y, por tanto, a la mejora subjetiva de lo instructivo (Dewey, 1938).

La regla de cooperación en la que se basa este modelo impulsa el avance de ciclos instructivos más individualizados y sinérgicos. En este sentido, se plantea la trascendencia de centrarse en los puntos de vista académicos sobre los mecánicos, a pesar de que se sabe que estos últimos condicionarán generalmente el cumplimiento de la proposición instructiva a crear. El ajuste del modelo instructivo que infiere el e-learning debe centrarse en los orígenes, objetivos y elecciones del instructor en un grado más prominente que en las TIC que se utilizarán; El cambio que implica el e-learning no radica en trabajar con la medida del aprendizaje educar (García Aretio, 2002).

E-learning y educación.

La presentación del e-learning en la escuela va más allá de la presentación de las TIC en ciclos instructivos y tiene los principales aliados académicos de la misma en los estándares de colaboración y coherencia. En esta línea, la selección de conjeturas de e-learning da garantía a un modelo

instructivo en el que los suplentes asuman una responsabilidad más destacada en la escolarización, sumando al avance de la eficacia en la medida de aprendizaje educativo y, por tanto, a la mejora subjetiva de la educación (Dewey, 1938).

El estándar de asociación en el que se basa este modelo impulsa el avance de ciclos instructivos más individualizados y sinérgicos. En este sentido, se llama la atención sobre la importancia de enfocar los ángulos instructivos sobre los mecánicos, a pesar de que se sabe que estos últimos generalmente condicionan el cumplimiento de la proposición instructiva a crear. El ajuste del modelo educativo que infiere el e-Learning debe centrarse en las organizaciones, objetivos y elecciones del instructor en un grado más notable que en las TIC que se utilizarán (García Aretio, 2002).

Metodología

Con el fin de determinar los aspectos relacionados con el análisis y evaluación del proceso enseñanza aprendizaje del idioma inglés en estudiantes de educación superior, se realizó encuestas dirigidas a estudiantes. Además, se consideraron dos puntos de vista interesantes: socios tecnológicos y educativos. Cabe señalar que estos métodos ayudan a establecer un marco de referencia para identificar y priorizar los factores clave en el sistema interactivo, comprender la dinámica y facilitar la toma de decisiones para resolver problemas que afectan a los participantes de la educación.

Población

En el presente trabajo de investigación la población de estudio son los 349 estudiantes del Instituto Superior Tecnológico Guayaquil (ISTG).

Muestra

Se realizó un muestreo no probabilístico por conveniencia a todos los estudiantes del Instituto Superior Tecnológico Guayaquil (ISTG).

Resultados

Ítem 1: El material educativo contribuye con mi aprendizaje en el idioma inglés

Tabla 1. Material Educativo

Respuestas	Frecuencia	Porcentaje
Totalmente desacuerdo	0	0,00%
En desacuerdo	0	0,00%
Ni de acuerdo ni en desacuerdo	4	1,15%
De acuerdo	56	16,05%
Totalmente de acuerdo	289	82,81%
Total	349	100,00%

Interpretación:

El material didáctico se suele emplear como nexo o elemento de unión entre el docente y/o discente y la realidad. Los resultados de la encuesta realizada a los estudiantes muestran que el 83% está totalmente de acuerdo con lo mencionado anteriormente, el 16% está de acuerdo y el 1% está ni de acuerdo ni en desacuerdo.

Ítem 2: Las sesiones virtuales me ayudan a comprender el curso de inglés

Tabla 2. *Sesiones Virtuales*

Respuestas	Frecuencia	Porcentaje
Totalmente desacuerdo	0	0,00%
En desacuerdo	0	0,00%
Ni de acuerdo ni en desacuerdo	8	2,29%
De acuerdo	40	11,46%
Totalmente de acuerdo	301	86,25%
Total	349	100,00%

Interpretación:

Aprender inglés mediante cursos virtuales, da la oportunidad de estudiar en cualquier momento y en cualquier lugar, es por eso que permite a los estudiantes priorizar con mayor facilidad las vidas y se convierte en una excelente opción para aprender un nuevo idioma de manera eficaz. Así pues, se encuestó a los estudiantes del ISTG quienes el 86% mencionaron estar totalmente de acuerdo en que las sesiones virtuales les ayuda a comprender mejor el curso de inglés, el 12% está de acuerdo y el 2% está ni de acuerdo ni en desacuerdo.

Ítem 3: La comunicación con mi docente usando la plataforma es clara

Tabla 3. *Comunicación con mi docente*

Respuestas	Frecuencia	Porcentaje
Totalmente desacuerdo	0	0,00%
En desacuerdo	0	0,00%
Ni de acuerdo ni en desacuerdo	8	2,29%
De acuerdo	40	11,46%
Totalmente de acuerdo	301	86,25%
Total	349	100,00%

Interpretación:

Las diferentes herramientas tecnológicas y plataformas facilitan la comunicación y el proceso de enseñanza-aprendizaje en los estudiantes, por esto se analizó a los estudiantes del ISTG a través de las encuestas en la cual el 86% mencionó estar totalmente de acuerdo con que la comunicación

docente-estudiante es clara, el 12% está de acuerdo y el 2% está ni de acuerdo ni en desacuerdo.

Ítem 4: El trabajo en equipo se da forma organizada

Tabla 4. *El trabajo en equipo se da forma organizada*

Respuestas	Frecuencia	Porcentaje
Totalmente desacuerdo	0	0,00%
En desacuerdo	0	0,00%
Ni de acuerdo ni en desacuerdo	24	6,88%
De acuerdo	92	26,36%
Totalmente de acuerdo	233	66,76%
Total	349	100,00%

Interpretación:

En el trabajo en equipo las habilidades de los integrantes son complementarias, mantienen una responsabilidad individual y mutua. En consecuencia los resultados obtenidos de la encuesta muestran que el 67% de los estudiantes del ISTG está totalmente de acuerdo en que el trabajo efectuado en el mismo se da de forma organizada, el 26% está de acuerdo y el 7% está ni de acuerdo ni en desacuerdo.

Ítem 5: Los deberes se reparten de forma equitativa en el grupo de trabajo

Tabla 5. *Los deberes se reparten de forma equitativa en el grupo de trabajo*

Respuestas	Frecuencia	Porcentaje
Totalmente desacuerdo	10	2,87%
En desacuerdo	34	9,74%
Ni de acuerdo ni en desacuerdo	50	14,33%
De acuerdo	57	16,33%
Totalmente de acuerdo	198	56,73%
Total	349	100,00%

Interpretación:

En un salón de clases es estratégico distribuir a los alumnos en equipos de trabajo que incorporen diversas visiones, niveles y formas de trabajar. Mezclar alumnos capaces de ayudar al resto, estudiantes con dificultades y alumnos que se mantienen en la media del aula, de este modo unos aprenderán de otros y estarás aprovechando este potencial para que aprendan y contribuyan al resultado final con las fortalezas. Por consiguiente, los resultados demuestran que el 57% de los estudiantes consideran estar totalmente de acuerdo en que los docentes reparten tareas de una manera equitativa cuando forman grupos de trabajo, el 16% está de acuerdo, el 14% está ni de acuerdo ni en desacuerdo. No obstante el 10% y 3% está en desacuerdo y totalmente en desacuerdo respectivamente.

Ítem 6: Comparto mis ideas con los miembros de mi grupo de trabajo

Tabla 6. *Comparto mis ideas con los miembros de mi grupo de trabajo*

Respuestas	Frecuencia	Porcentaje
Totalmente desacuerdo	2	0,57%
En desacuerdo	7	2,01%
Ni de acuerdo ni en desacuerdo	12	3,44%
De acuerdo	78	22,35%
Totalmente de acuerdo	250	71,63%
Total	349	100,00%

Interpretación:

En un grupo de trabajo es importante compartir y apreciar los diferentes puntos de vista de cada uno de los miembros, así pues lo afirman el 72% de los estudiantes que dicen estar totalmente de acuerdo con que esto se lleva a cabo en la institución en estudio, el 22% está de acuerdo y el 3% está ni de acuerdo ni en desacuerdo. No obstante, el 2% y 1% manifiestan estar en desacuerdo y totalmente en desacuerdo.

Ítem 7: Me siento motivado por mi docente durante las clases virtuales

Tabla 7. *Motivación del Docente*

Respuestas	Frecuencia	Porcentaje
Totalmente desacuerdo	0	0,00%
En desacuerdo	0	0,00%
Ni de acuerdo ni en desacuerdo	13	3,72%
De acuerdo	69	19,77%
Totalmente de acuerdo	267	76,50%
Total	349	100,00%

Interpretación:

La motivación posee una importancia fundamental para que el alumnado muestre interés en la educación y predisposición a aprender. Un alumno con motivación conseguirá buenos resultados y presentará un mayor interés por continuar con la etapa formativa y alcanzar metas cada vez de mayor complejidad. Los resultados de las encuestas muestran que el 77% está totalmente de acuerdo en que se sienten motivados por los docentes en las clases virtuales, el 20% está de acuerdo y el 4% está ni de acuerdo ni en desacuerdo.

Ítem 8: El docente resuelve mis dudas de manera oportuna

Tabla 8. Dudas resueltas por los docentes

Respuestas	Frecuencia	Porcentaje
Totalmente desacuerdo	0	0,00%
En desacuerdo	0	0,00%
Ni de acuerdo ni en desacuerdo	0	0,00%
De acuerdo	47	13,47%
Totalmente de acuerdo	302	86,53%
Total	349	100,00%

Interpretación:

Los docentes con el uso adecuado de las herramientas apoyan de manera efectiva el aprendizaje de los estudiantes; sin embargo, también debe tener disponibilidad, atención e interés para resolver dudas académicas del alumnado, en la encuesta realizada a los estudiantes del ISTG se determinó que el 87% y 13% de los estudiantes están totalmente de acuerdo y de acuerdo respectivamente, en que en la institución los docentes están prestos a resolver cualquier duda que ellos tengan acerca de la clase que se imparte.

Ítem 9: La retroalimentación del docente se da de forma efectiva

Tabla 9. Retroalimentación del Docente

Respuestas	Frecuencia	Porcentaje
Totalmente desacuerdo	0	0,00%
En desacuerdo	0	0,00%
Ni de acuerdo ni en desacuerdo	3	0,86%
De acuerdo	47	13,47%
Totalmente de acuerdo	299	85,67%
Total	349	100,00%

Interpretación:

El profesor debe permitir a los estudiantes experimentar y reflexionar sobre el objeto de aprendizaje, por esto se realizó una encuesta en la cual los estudiantes indicaron que el 86% está totalmente de acuerdo y el 14% está de acuerdo en que los docentes realizan una adecuada retroalimentación de forma efectiva.

Ítem 10: La plataforma virtual es de un diseño amigable

Tabla 10. La plataforma virtual es de un diseño amigable

Respuestas	Frecuencia	Porcentaje
Totalmente desacuerdo	0	0,00%
En desacuerdo	0	0,00%
Ni de acuerdo ni en desacuerdo	7	2,01%
De acuerdo	38	10,89%
Totalmente de acuerdo	304	87,11%
Total	349	100,00%

Interpretación:

Las plataformas virtuales son unos sistemas que nos permiten la ejecución de diversas aplicaciones en un mismo ambiente, permitiendo así que un usuario acceda a ella vía internet. En consecuencia, en la encuesta realizada se analizó que el 87% de los estudiantes están totalmente de acuerdo en que la plataforma virtual utilizada en la institución es de un diseño amigable, 11% está de acuerdo y un 2% está ni de acuerdo ni en desacuerdo.

Ítem 11: Hago uso de la plataforma educativa de manera constante

Tabla 11. *Uso de la plataforma educativa*

Respuestas	Frecuencia	Porcentaje
Totalmente desacuerdo	3	0,86%
En desacuerdo	3	0,86%
Ni de acuerdo ni en desacuerdo	12	3,44%
De acuerdo	56	16,05%
Totalmente de acuerdo	275	78,80%
Total	349	100,00%

Interpretación:

El hecho de existir diversas plataformas educativas debe estar en constante movimiento o uso por parte de los estudiantes para que sean muy bien aprovechadas, en consecuencia, los estudiantes del ISTG mencionaron que el 79% está totalmente de acuerdo en que hacen uso constante de la plataforma educativa en la institución, el 16% está de acuerdo, el 3% está ni de acuerdo ni en desacuerdo, el 1% y 1% está en desacuerdo y totalmente desacuerdo respectivamente recalando no dar uso de la plataforma virtual.

Ítem 12: Participo activamente durante las videoconferencias

Tabla 12. *Participación activa en las videoconferencias*

Respuestas	Frecuencia	Porcentaje
Totalmente desacuerdo	3	0,86%
En desacuerdo	23	6,59%
Ni de acuerdo ni en desacuerdo	39	11,17%
De acuerdo	47	13,47%
Totalmente de acuerdo	237	67,91%
Total	349	100,00%

Interpretación:

La videoconferencia es una posibilidad técnica de los nuevos canales de comunicación, que permite la transmisión y recepción de información visual y auditiva. Por ello, los resultados muestran que el 68% está totalmente de acuerdo en que participan activamente durante las videoconferencias, el 13% está de acuerdo y el 11% ni de acuerdo ni en desacuerdo, el 7% está en desacuerdo y el 1% está totalmente en desacuerdo.

Conclusiones y Recomendaciones

El desarrollo y evolución de las Tic y el E-Learning como una modalidad educativa en el proceso de enseñanza-aprendizaje del idioma inglés en estudiantes, si bien ha estado inspirada en la educación a distancia tradicional, hoy en día es la técnica mayormente utilizada y necesaria por los estudiantes en las diferentes instituciones educativas.

De acuerdo con lo analizado en la investigación, se trataría, por un lado, de una modalidad que en el transcurso del tiempo, el uso de las TIC facilitaría los procesos de enseñanza-aprendizaje en la universidad (nivel superior).

Por otro lado, se trata de una modalidad con amplias vías de fortalecimiento educativa, ante la necesidad de tener conocimientos permanentemente actualizados a lo largo de la vida, sin que necesariamente interfieran en nuestro diario vivir, ni requieran invertir una gran cantidad de tiempo.

En la actualidad el uso del E-Learning ha sido una herramienta fundamental para continuar con el proceso educativo a nivel universitario y con ello facilitar la formación de profesionales al servicio del desarrollo de los países.

Este tipo de enseñanza online permite la interacción del usuario con el material mediante la utilización de diversas herramientas informáticas. En este sentido, será muy interesante incentivar el uso de las TIC y el E-Learning, a través de las cuales se puede facilitar de forma rápida y sencilla la comunicación y el acceso a diferentes fuentes de información.

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Clima-Organizacional Estudiantil en Contexto de Diversidad Cultural, Aplicando un Modelo de Correlación en el Norte de Sinaloa

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Resumen

El Clima organizacional (Co) es importante para estimular, impulsar y mejorar la productividad del Recurso humano (Rh) que genera, crea, promueve, gestiona y mantiene constante innovación para el desarrollo grupal e individual. Se analizaron condiciones de Co en estudiantes de tres unidades académicas de una Universidad intercultural en Sinaloa para detectar, fortalezas, debilidades, oportunidades y amenazas. Se aplicaron 1,176 encuestas (escala Likert-siete niveles), con 70 preguntas, siendo validada por alfa de Cronbach (0.86). El muestreo fue por Método Aleatorio Estratificado, Afijación Proporcional con nivel de confianza (97%) y error (2.8%) para

N=5,375. Se estratificó por unidad y carrera, en el caso de Los Mochis, se tuvo una muestra de (n=703); Mochicahui, (n=361) y Choix, (n=112). Las variables medidas fueron: Servicio a estudiantes (Se), Respeto a la Diversidad Cultural (Rdc), Cohesión (Cn), Gestión (Gn), Área Física (Af) y Equidad (Eq). Se aplicó el Coeficiente de Correlación (Pearson) con regresión bivariada y multivariada. Se fue estadísticamente significativa con Co ($r=0.787$ $P<0.01$); Co con Rdc ($r=0.761$ $P<0.01$); Co con Cn ($r=0.832$ $P<0.01$); Co con Gn ($r=0.834$ $P<0.01$); Co con Af ($r=0.796$ $P<0.01$) y Co con Eq ($r=0.820$ $P<0.01$). La R^2 fue de 91.8%. De acuerdo al predictor de las seis variables analizadas las más significativas en orden de importancia fueron: Af, Se, Gn, Eq, Rdc y Cn, para la toma de decisiones. Las fortalezas son que la Universidad es incluyente; sus debilidades son: existe una organización y gobierno “vertical”, fragmentando la unidad; amenazas, desunión y falta de comunicación; oportunidades, sus programas están certificados y con calidad educativa.

Palabras claves: Convivencia, derechos humanos, desarrollo, diversidad e integración, regresión lineal

Student Organizational-Climat in the Context of Cultural Diversity, Applying a Correlation Model in the North of Sinaloa

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Abstract

Organizational climate (Co) is important to stimulate, boost and improve the productivity of the Human Resource (Rh) that generates,

promotes, manages, creates and maintains constant innovation for group and individual development. Objective. Co conditions were analyzed in students of three academic units of an intercultural University in Sinaloa, to detect, strengths, weaknesses, opportunities and threats. Method. 1,176 surveys were applied (Likert scale-seven levels), with 70 questions, being validated by Cronbach's alpha (0.86). Sampling was by Stratified Random Method, Proportional Locking, with confidence level (97%) and error (2.8%) for N= 5,375. It was stratified by unit and career, in the case of Los Mochis, there was a sample of (n= 703); Mochicahui, (n = 361) and Choix, (n = 112). The variables measured were: Student service (Se), Respect for Cultural Diversity (Rdc), Cohesion (Cn), Management (Gn), Physical Area (Af) and Equity (Eq) Results The Correlation Coefficient (Pearson) was applied, with bivariate and multivariate regression. It was statistically significant with Co (r = 0.787 P <0.01); Co with Rdc (r = 0.761 P <0.01); Co with Cn (r = 0.832 P <0.01); Co with Gn (r = 0.834 P <0.01); Co with Af (r = 0.796 P <0.01) and Co with Eq (r = 0.820 P <0.01). R2 was 91.8%. According to the predictor of the six variables analyzed the most significant in order of importance were: Af, Se, Gn, Eq, Rdc and Cn, for decision-making. The strengths are that the University is inclusive; its weaknesses are: there is a "vertical" organization and government, fragmenting the unit; threats, disunity and lack of communication; opportunities, its programs are certified and with educational quality.

Keywords: Coexistence, human rights, development, diversity and integration, linear regression

Introduction

Según Castillo y Guido (2015), la diversidad cultural es la evolución y transformación de las sociedades han influido en la presencia de conflictos armados en la defensa de los derechos culturales personales, sobre todo, para buscar el respeto a creencias, formas de pensar y hacer, parten de su existencia en una diversidad cultural marcada en América Latina. Núñez y Córdoba (2020) indican que desde finales del siglo XX y principios del XXI, estas luchas buscaron la reivindicación de los pueblos por décadas o siglos, debido a que estaban olvidados y marginados de los escenarios nacionales e internacionales, simplemente por pertenecer a determinado grupo social y debido a la globalización de la economía que avanza en la sociedad actual que ha contribuido a la pérdida de la diversidad cultural ancestral y la falta de oportunidades para cientos de personas (Figueroa-Céspedes y Yáñez-Urbina, 2020). González (2017), el Clima organizacional (Co) en un entorno intercultural, enfocando el significado a un conjunto de atributos, propiedades y cualidades evidentes en cada persona o grupo, practicados en cualquier

ambiente organizado e influenciado por componentes de la comunidad, llegando a repercutir en la conducta, valores, identidad y en la cultura en general. En el caso de la existencia de un ambiente plural con diversidad cultural como se puede apreciar en la sociedad actual, exige nuevas y mejores estrategias políticas, económicas, sociales, culturales y educativas para buscar el progreso. El reconocimiento y respeto a las universitarias a partir de la diversidad cultural, Cabrera y Gallardo (2013) mencionan que el compromiso más urgente y complejo que tienen que enfrentar las Instituciones de Nivel Superior (INS) en México, son los cambios tendientes al respeto y reconocimiento de la diversidad dentro del *Co* para mitigar conductas discriminatorias de género, posición económica, etnia, origen, religión, discapacidad física y el papel cultural en la sociedad, promoviendo mayor desarrollo entre estudiantes y lograr el éxito del proceso enseñanza-aprendizaje.

González, Ortíz y Gamarra (2020) señalan que definir el *Co* de forma única no es correcto, ya que incluye diversos conceptos y expresiones que inciden sobre personas o grupos en la promoción de la mejora continua, tendientes a lograr calidad en los procesos de enseñanza para alcanzar el éxito. El *Co* está determinado por conductas, actitudes, aptitudes, expectativas y realidades sociológicas, económicas y culturales de la organización. Se puede decir que representa la diversidad de variables situacionales que buscan promover el orden, disciplina y naturaleza del ambiente donde se quiere implantar, la cual, se puede ir transformando con el tiempo, afectando o beneficiando directa e indirectamente a los involucrados, más aún, cuando se busca la equidad ya que la marginación y discriminación, influyen en el dinamismo laboral-organizacional y académico en las universidades. Por ello, se busca la continuidad programática en ambientes con características de diversidad estudiantil sin importar el origen racial o de grupo (Bolaños *et al.*, 2020).

Alemán y Torres (2020) mencionan que la buena gestión del Recurso humano (*Rh*) en universidades, mejora la calidad del *Co* en el entorno donde interaccionan las personas. El impacto de la gestión dentro de un escenario intercultural, se ve afectado por el ambiente que domina y otros factores como la cultura. En diversas instituciones existen situaciones desmotivantes que influyen en un bajo compromiso de sus integrantes a las políticas de mejora, llegándose a implementar prácticas de alto desempeño que generen sinergia en la base y así, aumentar dicho compromiso que motive y mejoren los resultados académicos a corto, mediano y largo plazo. Sánchez, Hernández y Jiménez (2016) concluyen que un *Rh* bien administrado y capacitado, se convertirá en un activo poderoso, incluso una ventaja competitiva por lo que buen número de universidades están expuestas a cambios dinámicos y dependen de sí mismas para estar preparadas y sobrevivir ante amenazas del

exterior, formulando la gestión radicalmente para ser más innovadoras, adaptadas y flexibles en el logro de resultados.

Con base en lo anterior, el objetivo de la presente investigación fue analizar las condiciones de Clima organizacional (*Co*) en estudiantes de una Universidad dentro de un contexto de diversidad cultural con el fin de detectar fortalezas, debilidades, oportunidades y amenazas en sus tres unidades académicas (Mochis, Mochicahui y Choix) en el norte de Sinaloa.

Hipótesis

H₀ Hipótesis nula. Fomentar en estudiantes universitarios ambientes de mejoramiento en el Clima organizacional dentro de un contexto de diversidad cultural, no impulsará el mejoramiento en la calidad de planes educativos, ni propiciará la formación integral de profesionales competentes, críticos y comprometidos con el desarrollo sustentable de sus comunidades.

H_a Hipótesis alterna. Fomentar en estudiantes universitarios ambientes de mejoramiento en el Clima organizacional dentro de un contexto de diversidad cultural, impulsará el mejoramiento en la calidad de planes educativos y propiciará la formación integral de profesionales competentes, críticos y comprometidos con el desarrollo sustentable de sus comunidades.

Materiales y métodos

La Universidad donde se desarrolló la investigación es una Institución del norte del estado de Sinaloa, México con tres unidades académicas (Los Mochis, Mochicahui y Choix), cuya misión es propiciar la formación integral de profesionales competentes, críticos y comprometidos con el desarrollo sustentable, orientadas a la investigación en la solución de problemas sociales y la difusión y extensión de servicios en un contexto de diversidad cultural, llevándose a cabo esta investigación de noviembre de 2018 a noviembre de 2020.

Instrumento de encuesta. Se aplicó un instrumento de encuesta a partir de la escala de medición de Likert con siete niveles (Boone and Boone, 2012) mostrándose en la (Tabla 1).

Validez y confiabilidad (experto y campo). Se llevaron entrevistas a un grupo de 13 personas de cada unidad académica (Los Mochis, Mochicahui y Choix), los que no fueron incluidos en la muestra de estudio (prueba piloto) garantizando condiciones para el trabajo real y calculada con el alfa de Cronbach para validarla (Corral, 2009).

Tabla 1. Especificaciones de la escala de medición Likert con diferentes niveles (1 al 7), integrados en instrumentos de encuesta a estudiantes en un contexto de diversidad cultural universitario en el norte de Sinaloa.

Escala de medición	Nivel/Valor
Muy insatisfecha/muy en desacuerdo.	1
Insatisfecho/en desacuerdo.	2
Moderadamente insatisfecha/moderadamente en desacuerdo.	3
Ni satisfecha ni de acuerdo.	4
Moderadamente satisfecho/moderadamente de acuerdo.	5
Satisfecho/de acuerdo.	6
Muy satisfecho/muy de acuerdo.	7

*Fuente: Elaboración propia (2021).

Validez y confiabilidad (experto y campo). Anderson *et al.* (2019) sugiere la siguiente fórmula para establecer el grado de validez y confiabilidad de la prueba de alfa Cronbach.

$$\alpha = \frac{K}{K-1} \left(1 - \frac{\sum Vi}{Vt} \right) \quad a)$$

Ecuación alfa de Cronbach

Donde

Alfa= alfa de Cronbach.

K= Número de ítems.

Vi= Varianza de cada ítems.

Vt= Varianza del total.

El valor de alfa de Cronbach se determinó empleando el programa SPSS y de acuerdo con la escala de Likert 7 niveles, el resultado del índice fue de 0.86, por lo que fue consistente para esta escala, mostrándose en el (Tabla 2).

Tabla 2. Valor de alfa de Cronbach calculado para validar la encuesta.

Escala Likert	Varianza de Ítems	SPSS	Alfa estandarizado
Nivel 7	0.88	0.88	0.86

*Fuente: Elaboración propia (2021).

Descripción de la población en estudio. Se consideró la distribución de estudiantes por programa académico (licenciatura y posgrado), distribución por unidad académica y carrera (Tabla 3).

Tabla 3. Distribución de estudiantes universitarios en tres unidades académicas de una Universidad en un contexto de diversidad cultural.

Programa Académico	Los Mochis
Licenciado en Educación Preescolar	261
Licenciado en Psicología Social Comunitaria	549
Licenciado en Sociología Rural	59
Licenciado en Derecho (escolarizado)	475
Licenciado en Contaduría	566

Ingeniero en Sistemas Computacionales	175
Ingeniero en Sistemas de Calidad	1088
Total	3,214
Programa Académico	Mochicahui
Licenciado en Psicología Social Comunitaria	241
Licenciado en Turismo Empresarial	125
Licenciado en Sociología Rural	248
Licenciado en Derecho (escolarizado)	240
Licenciado en Contaduría	186
Ingeniero en Sistemas Computacionales	231
Ingeniero en Sistemas de Calidad	242
Ingeniero Forestal	135
Total	1648
Programa Académico	Choix
Ingeniero en Sistemas Computacionales	267
Ingeniero Forestal Comunitario	159
Licenciado en Turismo Alternativo	87
Total	513
Posgrado	250

* Información de la Coordinación General Académica (2019).

Variables contempladas. Para la consulta estudiantil sobre condiciones de Clima organizacional (*Co*) en un contexto de diversidad cultural, se contemplaron las siguientes variables: Servicio a estudiantes (*Se*), Respeto a la diversidad cultural (*Rdc*), Cohesión (*Cn*), Gestión (*Gn*), Área física (*Af*) y Equidad estudiantil (*Eq*).

Obtención de la muestra. Con base en las características y distribución de la población y para la obtención de la muestra se utilizó el *Muestreo Aleatorio Estratificado por Afijación Proporcional*:

$$n_h = n(N_h / N) = n W_w$$

$$n = \frac{\sum W_h P_h (1 - P_h)}{D + \frac{1}{N} \sum W_h P_h (1 - P_h)}$$

(Anderson *et al.*, 2019)

*El tamaño de “n” para un margen de error “e” con un nivel de confianza.

Nivel de confianza y error máximo en la muestra estudiantil. La población estudiantil en las tres unidades fue N=5,375, distribuidos en 19 programas académicos. Para el cálculo de la misma se consideró un nivel de confianza de 97 % con margen de error máximo admitido de 2.8 %, obteniéndose (n=1,176 alumnos), bajo el supuesto de que p = q = 50% con un número de estratos de tres por considerar las unidades académicas (Tabla 4):

Tabla 4. Tamaño de muestra aleatoria estratificada por afijación proporcional global por estrato (unidades académicas), con un nivel de confianza (97 %) y error máximo admitido de 2.8 % en estudiantes.

Estrato	Unidad	Número de Alumnos por Unidad	Proporción	Muestra del Estrato
1	Los Mochis	3,214	59.8%	703
2	Mochicahui	1,648	30.7%	361
3	Choix	513	9.5%	112
Total		5,375	100%	1,176

*Fuente: Elaboración propia (2021).

Nivel de confianza y error máximo en la muestra

Análisis de datos. Para el análisis de los datos bivariados y su relación entre variables, se instrumentó el Coeficiente de Correlación de Pearson (r) para muestras y variables cuantitativas (escala mínima de intervalo), método paramétrico donde se consideró la media y varianza, por tanto, se requirió de criterios de normalidad entre distintas variables relacionadas linealmente ya que se pretendió saber si existen variables fuertemente correlacionadas.

$$0 \leq r_{xy} \leq 1$$

Y la fórmula:

$$r_{xy} = \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sqrt{\sum_{i=1}^n (x_i - \bar{x})^2 \sum_{i=1}^n (y_i - \bar{y})^2}}$$

(Anderson *et al.*, 2014)

Se llevó un análisis de regresión simple y múltiple para modelar la relación existente entre la variable explicativa (X) y la variable respuesta (Y) donde:

$$Y_i \sim = a + \beta_i X_i$$

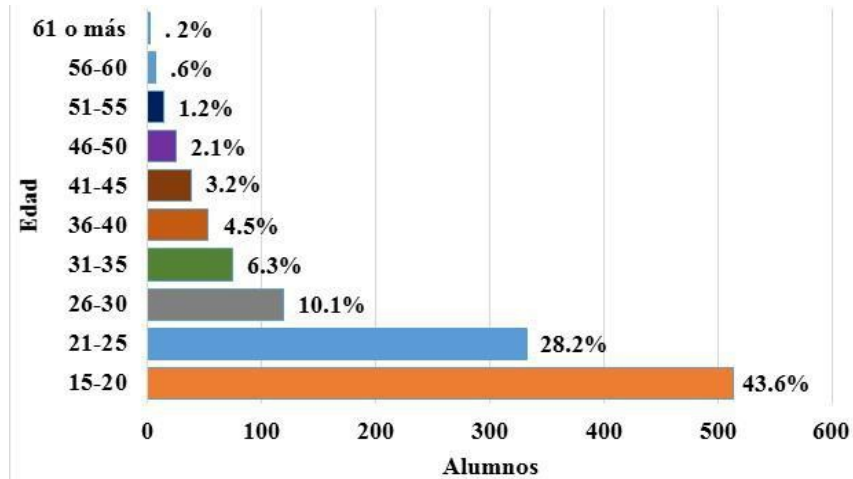
$$Y_i \sim = a + \beta_1 X_i + \dots + \beta_n X_n$$

Programas para análisis de datos. Para el manejo, acopio, estructuración de datos y análisis estadístico de los datos, se utilizaron dos softwares: Excel de Microsoft Windows, versión (2016) y el programa IBM-SPSS Statistics versión 22 (2013). Finalmente para la escritura del trabajo se utilizó el procesador de palabras Word de Microsoft Windows, versión (2013).

Resultados

Edad. La distribución de alumnos por edad (Figura 1) donde predominaron jóvenes entre 15-20 años (43.6%) y 21 a 35 años (44.6%), respectivamente. La muestra de adultos (36 a 60 años) fue de 11.8%, según clasificación de Castillo (2015).

Figura 1. Distribución de estudiantes por *Edad* en tres unidades académicas (Los Mochis, Mochicahui y Choix), Sinaloa.

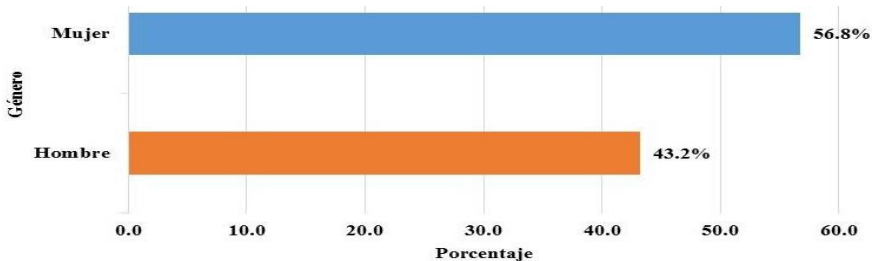


*Fuente: Elaboración propia (2021).

Género. Los datos se ilustran en la (Figura 2), donde las mujeres son mayoría (56.8%), mientras que los varones representaron 43.2%.

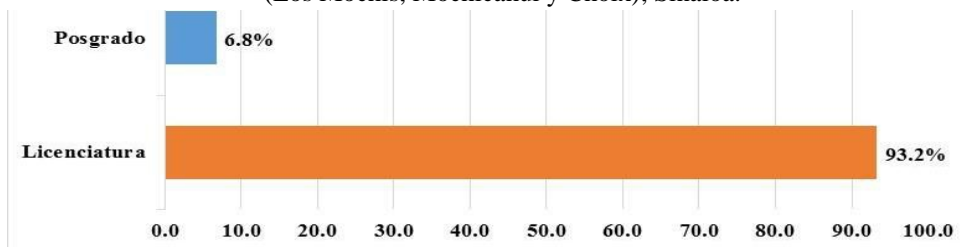
Nivel de estudios. En la (Figura 3) se exponen los resultados de la distribución de estudiantes por nivel académico. El 93.2% son de licenciatura en sus diversos programas educativos y 6.8% de posgrado.

Figura 2. Distribución por *Género* en estudiantes en tres unidades académicas (Los Mochis, Mochicahui y Choix), Sinaloa.



*Fuente: Elaboración propia (2021).

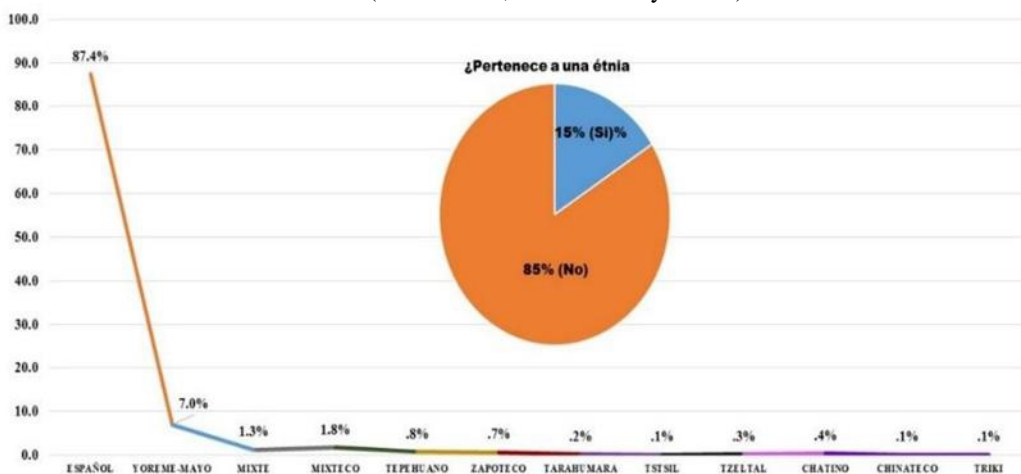
Figura 3. Distribución por *Nivel Educativo* en estudiantes en las tres unidades académicas (Los Mochis, Mochicahui y Choix); Sinaloa.



*Fuente: Elaboración propia (2021).

Lengua y pertenencia a grupo originario. De las tres unidades académicas 87.4% dijeron no hablar alguna lengua originaria sólo el español, aunque algunos argumentaron pertenecer algún grupo étnico pero no saben hablar la lengua materna; 85%, no pertenecen a ninguna y son llamados “mestizos o yories”; 15% son de alguna etnia, siendo mayoría los mayos-yoremes con 8.3% (Figura 4).

Figura 4. Distribución de estudiantes por Lengua y Grupo Étnico en tres unidades académicas (Los Mochis, Mochicahui y Choix).



* Fuente: Elaboración propia (2021).

Estado civil. En la actualidad los estudiantes enfrentan distintas realidades que los motivan a esforzarse en actividades más allá de las aulas. Algunos han contraído matrimonio, viven en unión libre y en otras circunstancias, aparte del espacio destinado al trabajo para solventar necesidades básicas familiares o individuales donde 56.6%, trabajan para resolver diversos compromisos; 22.1% están casados, lo que influye en el rendimiento académico y su probable deserción escolar. La mayoría son solteros (74.1%), algunos trabajan y otros no. Aquellos con alguna actividad extra clases (33.3%), laboran en la iniciativa privada; 12.4%, (sector público);

5.3% (el campo); 7.1% (otras actividades) y 41.2% dedicados solo a la escuela (Tabla 5).

Tabla 5. Actividades extra clase en estudiantes de tres unidades académicas (Los Mochis, Mochicahui y Choix), Sinaloa.

Actividad Extra Clase	Porcentaje
Negocio propio.	3.8
Iniciativa privada.	33.3
Sector público	12.4
Hogar	3.0
Campo	5.3
No trabaja	41.2
Otras actividades	1.0
Total	100

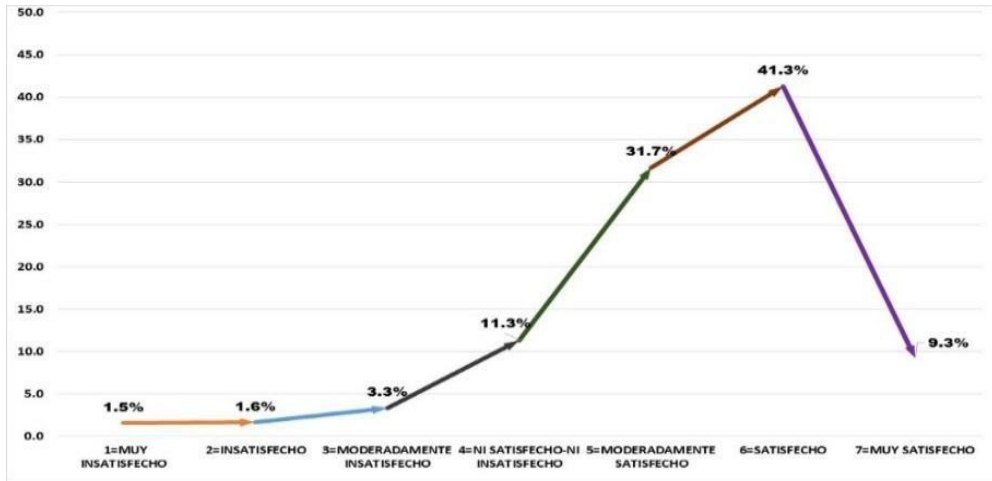
*Fuente: Elaboración propia (2021).

Resultados de Variables Estructurales.

Servicio a estudiantes (Se). En la (Figura 5) 50.6% está de satisfecho a muy satisfecho al encontrar interacción entre alumnos, administrativos y académicos; moderadamente satisfechos (31.7%); alumnos que no les interesa si se les proporcionan o no un buen servicio (11.3%) y 6.4% están desde muy a moderadamente insatisfechos, quienes expresan que nunca se les ha tomado en cuenta ya que la Universidad no fomenta actividades grupales que mejoren la interacción entre jóvenes, argumentando que existen pocas actividades de convivencia.

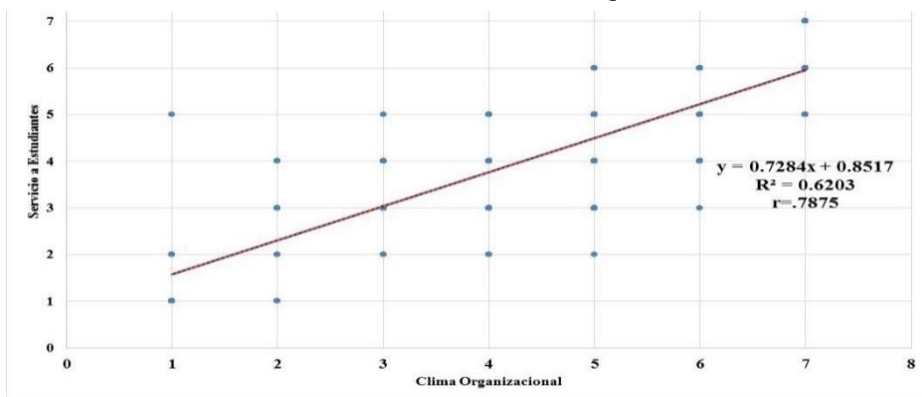
Correlación entre (Se) y Clima organizacional (Co). Los resultados entre *Se* y *Co* aplicando un modelo de Correlación Lineal de Pearson fueron estadísticamente significativo ($r=0.787$ $P<0.01$), resultado del grado de asociación entre las variables (Figura 6). De forma particular, *Se* comparada con *Cohesión* ($r=0.684$ $P<0.01$), *Gestión* ($r=0.653$ $P<0.01$), *Área física* ($r=0.558$ $P<0.01$) y *Equidad estudiantil* ($r=0.625$ $P<0.01$) fueron moderadamente significativas, reflejo que si la Universidad aumenta las expectativas y satisfactores para los jóvenes con un servicio de calidad, el *Co* tendería a ser mejor y a fortalecerse.

Figura 5. Opinión sobre *Servicio a estudiantes (Se)* que reciben los estudiantes en la Universidad.



* Fuente: Elaboración propia (2021).

Figura 6. Correlación estadísticamente significativa ($r=0.787$ $P<0.01$) entre variables *Se* con *Co*, en estudiantes de una Universidad con enfoque de diversidad cultural.



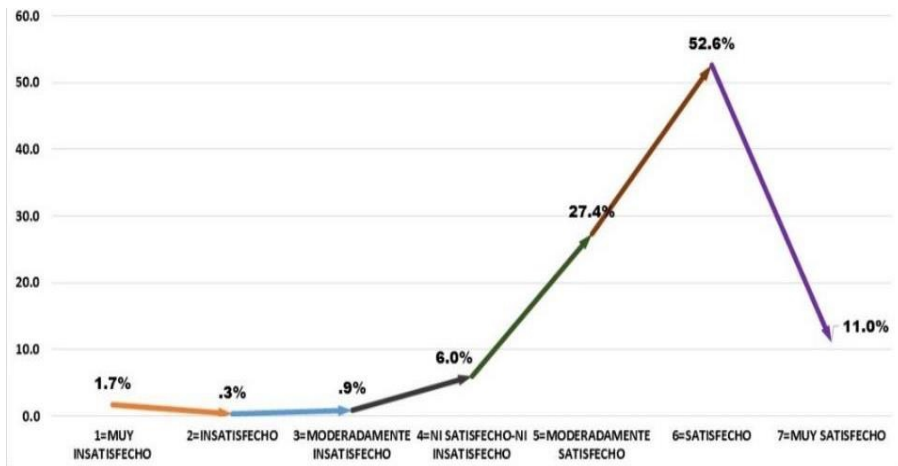
* Fuente: Elaboración propia (2021).

Respeto a la diversidad cultural (Rdc). El 63.6% está de muy a satisfecho de cómo se fomentan los valores y el respeto a la diversidad cultural; 27.4%, moderadamente satisfecho ya que algunos no se comprometen o involucran en cursos, talleres, congresos que tengan que ver con el **Rdc** y la falta de compromiso de directivos y maestros por atender estos temas; 6.0%, están moderadamente insatisfechos y 2.9% insatisfechos (Figura 7).

Correlación entre Rdc y Co. Fue estadísticamente significativa ($r=0.761$ $P<0.01$), Figura 8. El *Rdc vs Servicio a estudiantes* ($r=0.658$ $P<0.01$), *Cohesión* ($r=0.627$ $P<0.01$), *Gestión* ($r=0.564$ $P<0.01$), *Área física* ($r=0.563$ $P<0.01$) y *Equidad estudiantil* ($r=0.642$ $P<0.01$), fueron

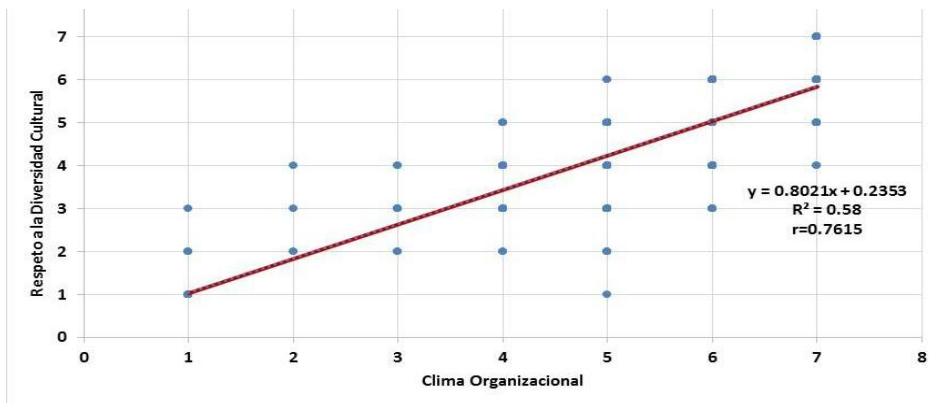
moderadamente significativas, contribuyendo las variables sobre el mejoramiento de las políticas del *Clima organizacional*.

Figura 7. Opinión estudiantil sobre el *Rdc* en una Universidad del norte de Sinaloa.



* Fuente: Elaboración propia (2021).

Figura 8. Correlación estadísticamente significativa ($r=0.761$ $P<0.01$) entre *Rdc* con *Co* en estudiantes de una Universidad en un contexto de diversidad cultural.



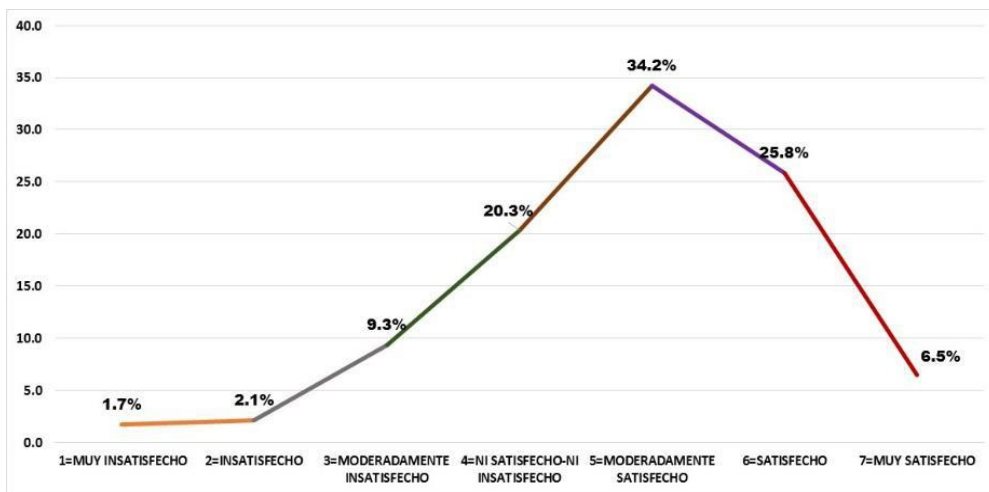
* Fuente: Elaboración propia (2021).

Cohesión (Cn). El 66.5% está de muy a moderadamente satisfechos ya que perciben que la Universidad promueve la unidad, trabajo en equipo y comunicación entre estudiantes, maestros, autoridades y las demandas son atendidas, lo que en este grupo se percibe que el *Co* está equilibrado, fortaleciendo la convivencia y avance del Plan de Desarrollo Universitario (Figura 9); 13.1%, está de muy a insatisfecho ya que no observan planes que fortalezcan la unidad y práctica de valores en un contexto de interculturalidad institucional; 20.3% son indiferentes, lo que no ayuda a la unidad, la comunicación, la interculturalidad, trabajo en equipo y el deseo de buscar

ambientes de *Co* equilibrados que impulsen el desarrollo y la calidad académica.

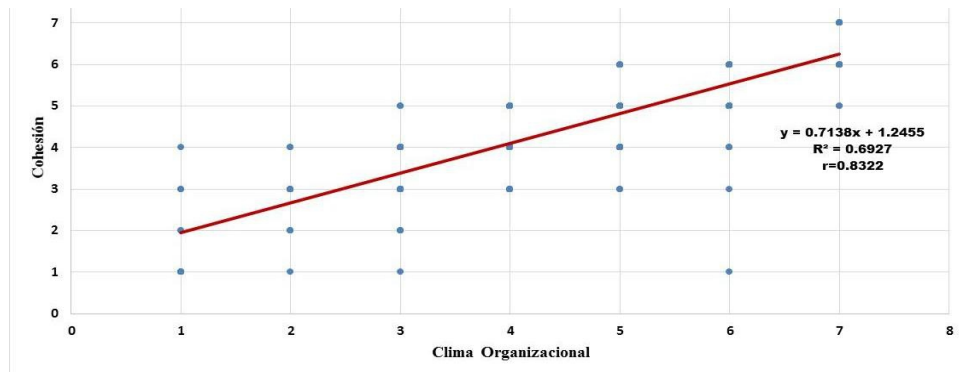
Correlación entre *Cn* y *Co*. La interacción entre *Cn* y *Co* con el coeficiente de Correlación Lineal de Pearson fue estadísticamente significativa ($r=0.832 P<0.01$), entendiéndose que *Cn* aporta elementos y herramientas al mejoramiento del *Co* (Figura 10). La variable *Cn* con respecto a *Se* ($r=0.684 P<0.01$), *Rdc* ($r=0.627 P<0.01$), *Af* ($r=0.628 P<0.01$) y *Eq* ($r=0.658 P<0.01$) fueron moderadamente significativos; *Cn* con *Gn* ($r=0.754 P<0.01$) fue estadísticamente significativa, existiendo una dependencia con el *Co*.

Figura 9. Opinión estudiantil sobre la variable *Cn* en una Universidad dentro de un contexto de diversidad cultural.



*Fuente: Elaboración propia (2021).

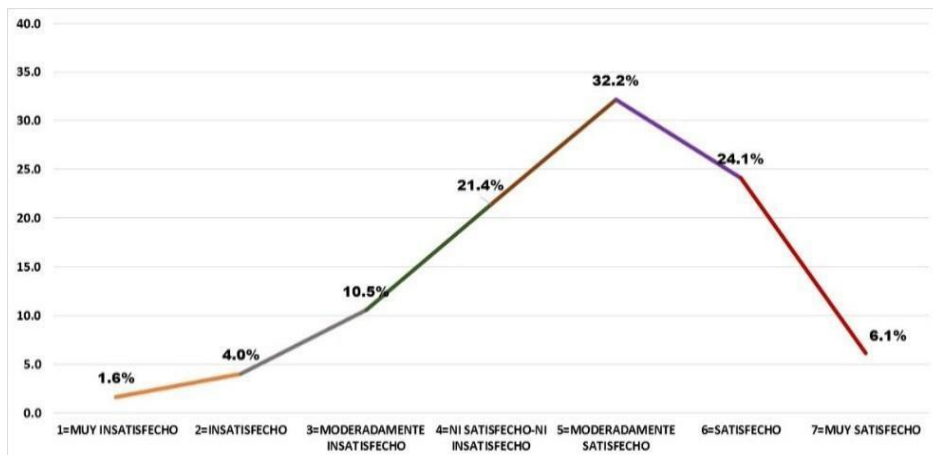
Figura 10. Correlación significativa ($r=0.832 P<0.01$) entre las variables *Cn* con *Co* en estudiantes de una Universidad en un contexto de diversidad cultural.



*Fuente: Elaboración propia (2021).

Gestión (Gn). La respuesta estudiantil de *Gn con Co* universitario se expone en la (Figura 11). El 62.6% está de muy a moderadamente satisfechos de cómo se trabaja en la Universidad en el ámbito de la *Gn*, siendo importante se mantenga la vinculación hacia fuera del campus y dentro de la Institución con sectores productivos, familiares y el sector público para darle certeza a la vida académica; 21.4%, no le interesa si la universidad está trabajando para vincular actividades hacia otros sectores, consecuencia de la falta de comunicación entre autoridades y la comunidad universitaria sobre planes y proyectos con otros sectores y 16.1%, está de muy a moderadamente insatisfecho de cómo se lleva la gestión. Las autoridades deben esforzarse para informar de proyectos, compromisos, acciones y alternativas para vincular a jóvenes a diferentes sectores (público, privado, comunitario y familiar), lo que asegurará un positivo *Co* en un ambiente de diversidad cultural.

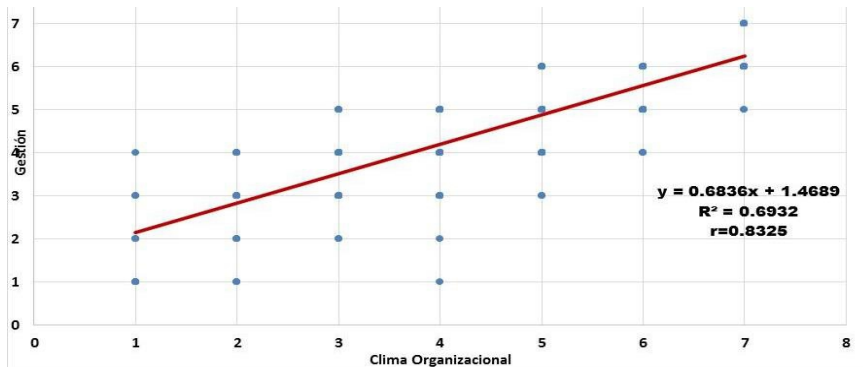
Figura 11. Opinión estudiantil sobre la variable *Gn* en una Universidad dentro de un contexto de diversidad cultural.



*Fuente: Elaboración propia (2021).

Correlación entre *Gn* y *Co*. Fue estadísticamente significativo ($r=0.832$ $P<0.01$), aportando la *Gn* elementos y herramientas que fortalecen el *Co* universitario (Figura 12).

Figura 12. Correlación estadísticamente significativa ($r=0.832$ $P<0.01$) entre variables Gn con Co en estudiantes de una Universidad dentro de un contexto de diversidad cultural.

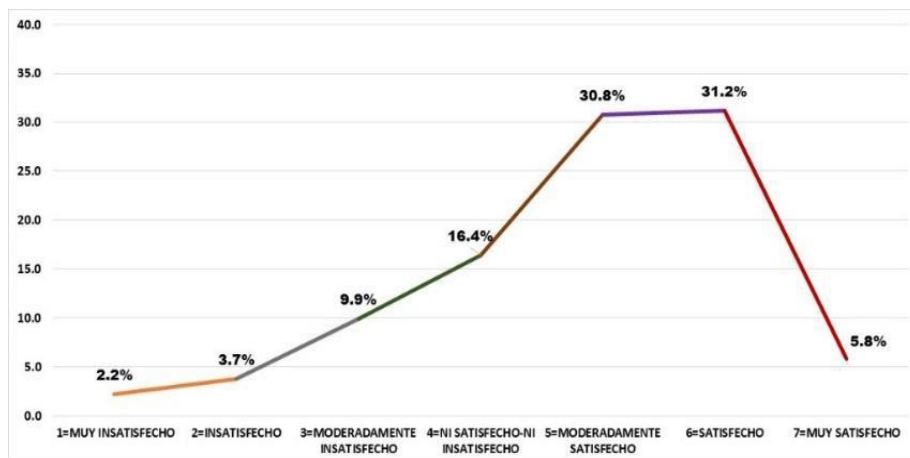


*Fuente: Elaboración propia (2021).

La interacción de la variable Gn con Se ($r=0.653$ $P<0.01$), Rdc ($r=0.564$ $P<0.01$), Af ($r=0.666$ $P<0.01$) y Eq ($r=0.674$ $P<0.01$), fueron moderadamente significativos y con Cn ($r=0.754$ $P<0.01$), estadísticamente significativa.

Área física (Af). El 67.8%, están de muy a moderadamente satisfechos de cómo se encuentran las instalaciones con mantenimiento y funcionales para grupos vulnerables, suficientemente amplias y confortables para la organización de eventos; 16.4%, no les interesa opinar, argumentando que la autoridad es indiferente en apoyar a grupos vulnerables en cuanto a la adaptación de sus instalaciones; 15.8% está de muy a moderadamente insatisfecho, señalando que las instalaciones están sucias con falta de mantenimiento, baños en malas condiciones, sin papel y sucios; no existen áreas para asesorías con profesores, llevándose en pasillos, salones de clases, biblioteca y en la cancha deportiva, lo que influye en el deterioro académico y el Co (Figura 13).

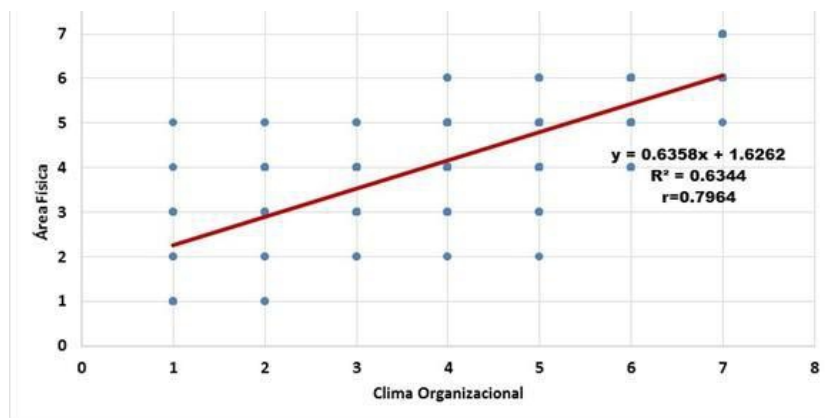
Figura 13. Opinión estudiantil sobre la variable *Af* en una Universidad en un contexto de diversidad cultural.



*Fuente: Elaboración propia (2021).

Correlación entre *Af* y *Co*. El coeficiente de Correlación fue estadísticamente significativo ($r=0.796$ $P<0.01$), aportando la variable *Af* elementos para el fortalecimiento del *Co* en la Universidad (Figura 14). *Af* con *Se* ($r=0.558$ $P<0.01$), *Rdc* ($r=0.563$ $P<0.01$), *Cn* ($r=0.628$ $P<0.01$), *Eq* ($r=0.698$ $P<0.01$) y *Gn* ($r=0.666$ $P<0.01$) fueron moderadamente significativos, existiendo respuesta positiva con el Clima organizacional.

Figura 14. Correlación estadísticamente significativa ($r=0.796$ $P<0.01$) entre variables *Af* con *Co* en estudiantes de una Universidad en un contexto de diversidad cultural.

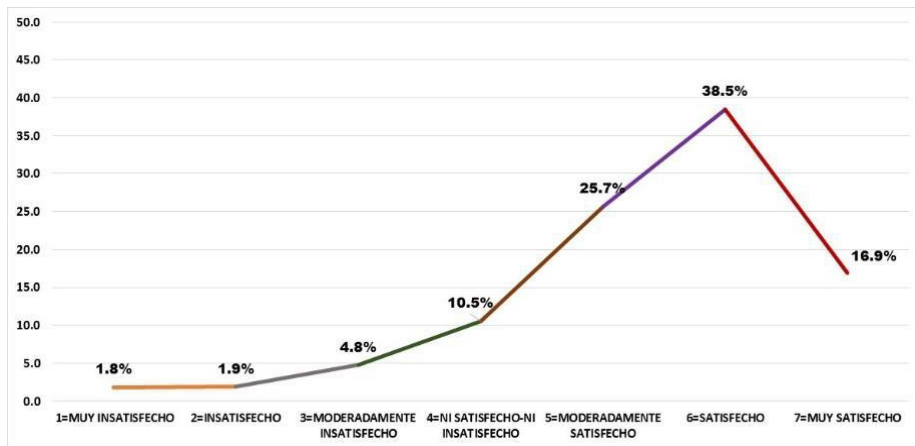


*Fuente: Elaboración propia (2021).

Equidad estudiantil (*Eq*). El 81.1% está de muy a moderadamente satisfechos de cómo se percibe la *Eq* y el respeto a los derechos humanos (*Dh*) entre estudiantes, además, ven positivo el apoyo brindado a personas vulnerables ya que la Universidad tiene apertura para jóvenes de zonas urbanas, semi-urbanas, medio rural y de grupos originarios; 10.5%, dijo no

interesarse estos temas argumentando que la autoridad no está inmersa en estos grupos y no existe respeto a los *Dh*; 8.5%, está de muy a moderadamente insatisfechos de cómo se atienden los *Dh* y la falta de voluntad para fomentarlos sin importar condición, origen, religión, forma de pensar, género, entre otros para que sean respetados y tomados en cuenta. Será relevante que se atiendan demandas para construir ambientes propicios que mejoren y fortalezcan el *Co* y se busque armonía entre la diversidad existente (Figura 16).

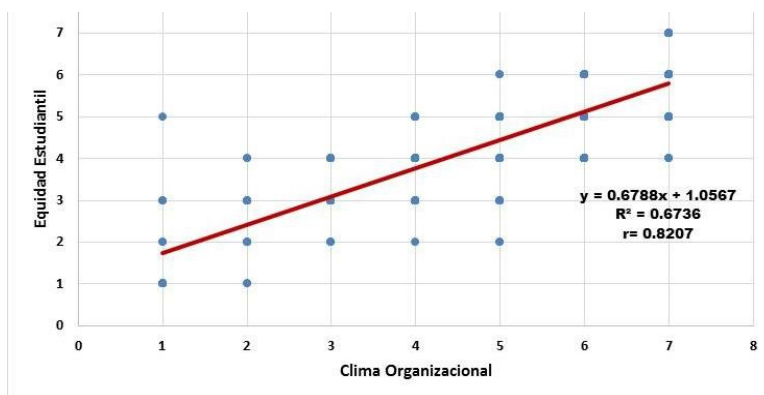
Figura 16. Opinión de estudiantes sobre *Eq* en una Universidad en un contexto de diversidad cultural.



*Fuente: Elaboración propia (2021).

Correlación entre *Eq* y *Co*. El coeficiente de Correlación entre estas variables fueron estadísticamente significativos ($r=0.820 P<0.01$), contribuyendo *Eq* positivamente con el *Co* (Figura 17). La variable *Eq* con *Se* ($r=0.625 P<0.01$), *Rdc* ($r=0.642 P<0.01$), *Cn* ($r=0.658 P<0.01$), *Gn* ($r=0.674 P<0.01$) y *Áf* ($r=0.698 P<0.01$), fueron moderadamente significativos, existiendo correlación directa de estas variables con el Clima organizacional.

Figura 17. Correlación significativa ($r=0.820$ $P<0.01$) entre variables *Equidad de género* con *Co* en estudiantes de una Universidad en un contexto de diversidad cultural.



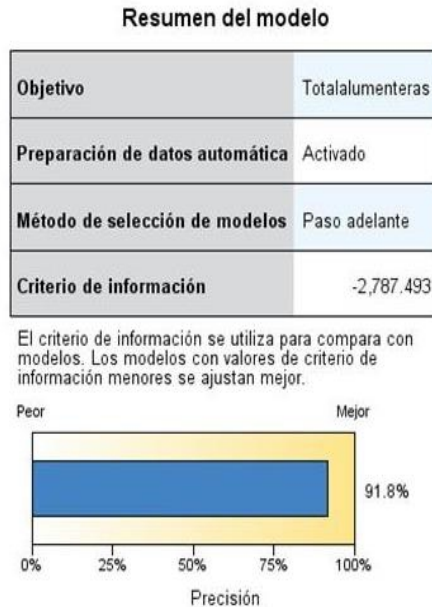
*Fuente: Elaboración propia (2021).

Aceptación o rechazo de hipótesis. De acuerdo a los resultados y a la correlación que mostraron las variables estructurales contempladas con el Clima organizacional (*Co*), el fomentar estas condiciones en la Universidad entre los estudiantes y la comunidad en general, contribuirá al mejoramiento en la satisfacción, equidad, cohesión, gestión, confort para el desarrollo de las actividades académicas en los jóvenes, por lo que se descarta la ***Hipótesis nula*** y se acepta la ***Hipótesis alternativa*** según los datos descriptivos y las correlaciones existentes entre las variables independiente y dependiente.

Argumentos finales. Se exponen los resultados a partir del desarrollo de modelos estadísticos quedando como criterio el de R^2 de las variables como medida de representatividad global. Se determinó que el modelo se apegaba a los datos con los estudiantes donde se muestra una precisión final de 91.8% (Figura 18).

Resumen de predictores con las variables estructurales y su R^2 . En la (Tabla 6) se presenta el resumen del análisis predictivo fundamentado en la identificación de las relaciones existentes entre variables estructurales con *Co* en alumnos que sirvió para predecir posibles resultados en futuras situaciones, lo que dependerá del análisis de datos y de la calidad de las suposiciones.

Figura 18. Resumen del modelo planteado como medida global del estudio de las variables estructurales con el Clima organizacional.



*Fuente: Elaboración propia (2021).

Tabla 6. Resumen del modelo planteado con el resultado de sus predictores.

Modelo	R	R cuadrado	R cuadrado ajustado	Error estándar de la estimación	Durbin-Watson
1	0.832 ^a	0.693	0.693	0.58967	
2	0.904 ^b	0.817	0.817	0.45513	
3	0.931 ^c	0.866	0.866	0.38943	
4	0.944 ^d	0.891	0.891	0.35125	
5	0.954 ^e	0.911	0.911	0.31800	
6	0.961 ^f	0.923	0.923	0.29585	0.053

*Fuente: Elaboración propia (2021).

a. Predictores: (constante), Gestión.

b. Predictores: (constante), Gestión, Equidad Estudiantil.

c. Predictores: (constante), Gestión, Equidad Estudiantil, Respeto a la Diversidad Cultural.

d. Predictores: (constante), Gestión, Equidad Estudiantil, Respeto a la Diversidad Cultural, Área Física.

e. Predictores: (constante), Gestión, Equidad Estudiantil, Respeto a la Diversidad Cultural, Área Física, Servicio a Estudiantes

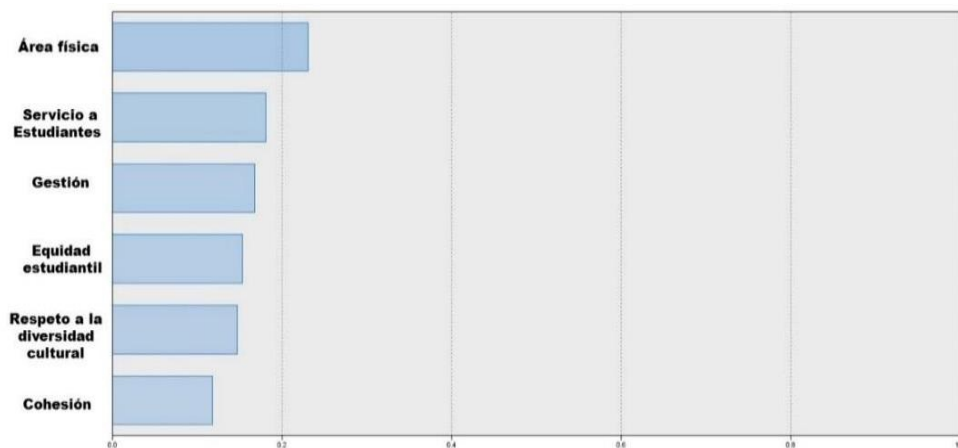
f. Predictores: (constante), Gestión, Equidad Estudiantil, Respeto a la Diversidad Cultural, Área Física, Servicio a Estudiantes, Cohesión.

$$Y_i \sim = B_0 + \beta_1 x_i + \beta_2 x_i + \beta_3 x_i + \beta_4 x_i + \beta_5 + \beta_6 x_i$$

Importancia del predictor. De las variables estructurales contempladas en el estudio de Co con estudiantes (Se, Rdc, Cn, Gn, Af y Eq)

para la toma de decisiones y conocer cuál es la variable más y la menos importante con el fin de, establecer estrategias de solución en la mejora del *Co* de la Institución se observan en la (Figura 19). De éstas las más relevantes fueron: *Área física*; en segundo, *Servicio a estudiantes*; *tercera, Gestión*; *cuarta, Equidad*; *quinta, Respeto a la diversidad cultural* y la menos relevante *Cohesión*.

Figura 19. Importancia del predictor que muestran las variables de mayor a menor relevancia de acuerdo a las necesidades de los estudiantes.



*Fuente: Elaboración propia (2021).

Discusión

La educación es un derecho de toda persona para mejorar el estatus de vida desde el básico hasta el universitario, así Escamilla *et al.* (2016) mencionan que quienes no han logrado alcanzar la educación superior que les permita desarrollarse eficazmente en la vida para trabajar con dignidad y respeto que les permita participar en las actividades cívicas y en general, adquirir nuevos conocimientos basados a sus necesidades, estarán más vulnerables ante fenómenos como la marginación y discriminación. Respecto a la igualdad de género y la búsqueda de derechos políticos, económicos, sociales, educativos, familiares e individuales Fernández-Argüelles *et al.* (2015) comentan, que existe disparidad debido a la desigualdad entre géneros lo que influye en una marcada inequidad entre hombres y mujeres en un ambiente de diversidad cultural.

La oportunidad que tienen los jóvenes, adultos, grupos originarios y personas de la tercera edad para estudiar en la Universidad Cienfuegos-Martínez *et al.* (2016) es una oportunidad para adquirir herramientas permanentes que contrarrestan desventajas económicas, sociales y de preparación entre grupos. Cardona y Zambrano (2014) indica que la interculturalidad debe fomentarse en las instituciones de educación y trabajar con distintos grupos sociales para atender con equidad necesidades

primordiales. Finalmente en el caso de la lengua, no debe ser problema ya que se debe aprovechar la riqueza que representa la cultura de los grupos originarios y no originarios en el fortalecimiento del Clima organizacional (*Co*) de cualquier institución educativa (Del Ángel Salazar *et al.*, 2017).

Los estudiantes que combinan varias actividades (trabajo, obligaciones conyugales y otras) con las escolares, según Noriega-Bravo y Pría (2011) investigaron estos fenómenos generados por estudiar y atender múltiples compromisos sobre el desempeño académico, agudizándose con problemas familiares e individuales y en casos extremos, las decisiones por desertar por la incapacidad de enfrentar distintas responsabilidades a la vez. Lo anterior influye importantemente sobre el *Co* y la identidad del estudiante con su institución, siendo necesario fomentar el espíritu de pertenencia (Posada y Salanova, 2013) que incremente el sentimiento de identidad de grupo en el trabajo académico así como su integración al clima institucional lo que fortalecerá el rendimiento de los jóvenes.

Carrillo-Rivera (2014) indican que la diversidad cultural tiene relevancia en el reconocimiento a la multiculturalidad que motive la convivencia armónica y la comunicación en las universidades, para convertirse en un factor que disminuya la marginación y la exclusión de personas. El respeto a la diversidad cultural será fundamental para promover un agradable *Co* en las universidades que ayude a la integración del desarrollo humano. Por su parte Sánchez-Tapia (2015) comenta que los valores rigen el comportamiento de las personas incluyendo la “cultura y satisfacción organizacional”, términos que involucran valores, necesidades, expectativas, creencias políticas, normas aceptadas y practicadas por los estudiantes; fomento y respeto a la forma de pensar, sentir y creer pues esto estimulará la mayor integración en el *Co* dentro de la comunidad estudiantil (Contreras *et al.*, 2011).

Oyarzún y Méndez (2015) resalta la importancia que tiene la Cohesión, porque influye en el fortalecimiento espiritual de grupo y en el desarrollo académico entre equipos cohesivos, estimulando la comunicación, lealtad, amistad en la participación activa en la toma de decisiones comunes y ayuda a generar efectos positivos y satisfactorios. Sin embargo Sánchez y Caballero (2011) indican que la *Cn* crea ambientes propicios para la interacción entre grupos y el fomento en el mejoramiento del *Co* en los centros de estudio.

La Gestión es una parte clave en la promoción de satisfactores para el *Co*, Segredo *et al.* (2015) mencionan que el *Co* representa una herramienta importante en la toma de decisiones, ayudando a proyectar alternativas productivas y de calidad entre integrantes de grupos de trabajos; el mejoramiento continuo y supervivencia de la organización comprendiendo a personas y procesos de desarrollo donde el liderazgo, la reciprocidad, la participación, vinculación y comunicación, son la base para estructurar

procesos de gestión universitaria con sus integrantes y con sectores externos, públicos o privados, donde vinculen sus acciones para el fortalecimiento de programas y planes de estudio (Sandoval y Pernaete 2014).

Las autoridades universitarias deben hacer esfuerzos y comprometerse para satisfacer necesidades apremiantes de mantenimiento y mejoramiento del *Área física*, contribuyendo al mejoramiento del *Co*. El respeto a los derechos humanos para grupos vulnerables debe ser parte de la agenda de actividades para mejorar y adaptar instalaciones para su libre tránsito. Pérez *et al.* (2013) opinan que la adaptación de la infraestructura incrementará las capacidades y habilidades entre estudiantes. Sin embargo, la inversión aparece como gasto, pero debe ser ante todo aplicado para mejoras, revisando la normatividad universitaria.

La defensa de los derechos humanos según Torres y Vélez (2020) en un ambiente universitario de *Equidad estudiantil*, forma parte esencial del espíritu intercultural que se debe practicar. Fomentar la igualdad de género, la equidad para garantizar el acceso, permanencia y trato digno en las aulas; el respeto a la diversidad cultural; la búsqueda del diálogo en la solución de conflictos, son garantía para fomentar oportunidades de acceso y permanencia de los jóvenes en la escuela. La diversidad cultural involucra a grupos sociales imaginarios y colectivos, donde se reconoce el carácter pluricultural, multiétnico y hasta multinacional. Velasco (2016) comenta que el respeto a los *Dh* en la diversidad cultural, debe fortalecerse a partir de las necesidades históricas que tiene cualquier institución para vincular a personas, pueblos, comunidades, naciones y civilizaciones en razón del entendimiento y valoración de la multiculturalidad, que se convierta en garantía en el fomento del desarrollo y mejoramiento de su Clima organizacional.

Conclusiones

El Clima organizacional como pilar fundamental para el fomento de la convivencia entre personas, basados en los resultados obtenidos en la presente investigación, ofrece un panorama amplio de lo que se tiene que hacer para tomar en cuenta a todos los grupos involucrados en la Universidad investigada. Las fortalezas y debilidades entre la comunidad, deben ser motivo de revisiones constantes que ayuden a tomar en cuenta opiniones entre jóvenes, pues son la esencia de la vida activa de la institución. Sería lamentable que solo se tomara en cuenta a las mayorías y se marginara a las minorías en sus peticiones, molestias e indiferencias, con ello, las autoridades universitarias deben hacer esfuerzos para mantener equilibrios entre sectores tomando en cuenta todas las opiniones que fortalezcan el *Co* que superen conflictos que generalmente se presentan en cualquier universidad.

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Drivers of Public Health Expenditure in Kenya: Do Structural Breaks Matter?

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Abstract

Health forms the basic foundation of the quality of human life, which is an ultimate ingredient towards the productivity and efficiency of an economy. The rapid growth of health expenditure has emerged as an enormous concern for many households and governments globally. This study used time-series data for the period 1985–2018 in unearthing the drivers of healthcare expenditure in Kenya, with a central focus on the role of health shocks. The study also sought to assess whether structural breaks mattered in a healthcare expenditure model. A public healthcare expenditure model was estimated using the Autoregressive Distributed Lag (ARDL) model. The findings revealed the presence of a long-run relationship between public health expenditure and its determinants in Kenya. Population growth rate and CO₂ emissions (proxy to respiratory illnesses) were found to significantly and positively determine public health expenditure in the short run. This impact was insignificant in the long run. Similarly, GDP per capita and the number of HIV/AIDs infections positively and significantly determined public health expenditure in the long run. A key finding of this study highlighted the importance of testing for structural breaks in analyzing a time-series healthcare expenditure model. Previously, this is something that has been largely omitted in the Kenyan healthcare context. The structural break dummy variables significantly determined public health expenditure and, therefore, their incorporation in the model yielded a more accurate forecast with better econometric estimates. The findings will be useful in informing the government's health budgetary allocation as well as the design of appropriate

shock mitigation policies. This is paramount for the country in achieving not only Universal Health Coverage but also high-quality medical care to its citizens as envisioned in the 'Big Four Agenda' government priorities.

Keywords: Public health expenditure, structural breaks, ARDL model, Kenya

1. Introduction

The health financing system in many African countries is generally too weak to cushion households from health shocks (Leive & Xu, 2008). Therefore, having health insurance is pivotal as it significantly aids medical treatment by reducing Out-of-Pocket (OOP) expenses whenever any member of a particular family or household becomes ill (World Bank, 2014). Health expenditures are defined based on the predominant purposes they serve in terms of improving health. They encompass health machinery and equipment costs, treatment costs, medical care costs, and health recurrent expenditures. Health care is primarily financed by OOP expenditure in less developed countries as well as in developing economies. Households without any form of medical cover are very likely to spend more money when their loved ones fall ill. In such unforeseen and unplanned circumstances, these medical expenditures are more likely to exhaust a household's stream of income. Furthermore, financially constrained households may be compelled to borrow or even sell-off their assets, i.e., land, just to meet these necessary health expenses. This lowers a household's living standard (Krishna, 2006).

According to the World Economic Forum report (2019), every year 6 million people die in low-income countries as a result of low-quality health care. This scenario is not different for Kenya. Despite efforts by the government in increasing the budgetary allocation to the health sector, the health status of many Kenyans has not improved significantly. More concretely, Kenya's Universal Health Coverage (UHC) service index stands at 55 (World Bank, 2018). This is a decline from the 57 recorded in 2015 (WHO, 2017). This figure is way less than that of many other 86 recorded countries that are performing comparatively better as far as UHC is concerned.

More importantly, the Government of Kenya through the 'Big Four Agenda' priorities aims at achieving UHC by providing financial protection to its citizens against the OOP expenditure. The agenda stipulates a reduction in the OOP household expenditure from 26% recorded in 2017 to 12% by the year 2022 (The Big Four, 2017). Achieving the UHC remains a tall order milestone for Kenya with only 16,538,982 persons (representing 36%) of the total population reported to have been well-insured by the year 2017. This largely falls short of the targeted cover of about 51,572,636 persons (representing 100%) of the total population by the year 2022 (The Big Four, 2017).

The problem is also compounded by health shocks that result in a sharp upsurge in the health care expenditure pattern at both the household and government levels. This compels Kenya to rely on donor funding in the wake of such health pandemics and epidemics, i.e., HIV/AIDS and cancer. The massive strides made by the government of Kenya in ensuring UHC have been constantly thwarted due to a lack of adequate knowledge on the core predisposing factors that determine health care expenditure. This study, therefore, seeks to address this problem by identifying the drivers of public health care expenditure that are uniquely critical to the Kenyan economy's health care context. More importantly, this study will contribute to the existing literature by examining the role of structural breaks in determining public health expenditure. Previously, this is something that has been largely omitted in the Kenyan context.

Health shocks are defined as unpredictable diseases that are highly cost-demanding and that cause a sudden deterioration to an individual's health status (Atake, 2018). Leive and Xu (2008) identified Illness as the most important shock associated with poverty in Less Income Countries (LICs). Approximately 100 million people plunge into poverty annually due to health care costs (World Bank, 2014). According to Leive and Xu (2008), health shocks exert a double financial burden on households through not only increased medical treatment costs but also the loss of income that is associated with the inability to work. With the bulk of healthcare expenditure in LICs being financed through OOP payments, the majorities of households suffer the huge financial burden of accessing quality medical care and may alternatively have to forego it all together (Xu et al., 2003). Wagstaff (2008) observes that calamitous health care expenditures combined with foregone earnings may plunge households into the health poverty trap.

There is, therefore, a dire need for heavy investment in the health care system in Kenya. The government of Kenya has been shouldered with the massive task of ensuring Universal Health Care for its citizens, which is one that is not only accessible but also affordable. Consequently, various proponents of public health investment argue that it reduces the size of OOP expenses. This relieves the population from poverty brought forth by catastrophic health expenditure. The World Health Organization notes that universal health care can be realized through health insurance which has been identified as a core driver in gearing financial protection (WHO, 2010). Studies on less developed and developing countries have revealed that OOP is just too high and unaffordable, thus plunging many families into poverty (Galarraga et al., 2009).

The life expectancy in Kenya averages 61 years with the key obstacle to longer life expectancy being death accruing from HIV/AIDS, high under 5 child mortality rates, communicable & non-communicable diseases, and the

deadly emerging cancerous infections. Currently, the total annual death in Kenya is approximately 420,000 people. Government statistics reveal that out of these deaths, approximately 270,000 deaths are caused by communicable diseases with non-communicable diseases accounting for about 110,000 deaths. Moreover, deaths from injuries can be approximated at 40,000 persons (Republic of Kenya, 2012). Nonetheless, Statistics from The Dutch Republic (2016) show that Kenya performs better in terms of life expectancy in comparison to other African countries. For instance, Uganda's, Zambia's, South Africa's, and Nigeria's life expectancies are 59, 58, 60, and 55 years, respectively, which are lower than that of Kenya.

The government of Kenya has made substantial efforts in improving health services and outcomes over the past decade. These efforts have not only resulted in reduced child mortality rates but also decreased infections from communicable and non-communicable diseases. Statistics from the Republic of Kenya (2017) indicate that the number of under 5 death rates declined to 52 in 1000 live birth in 2014 from 115 in 1000 live birth in 2003. This represented a 54% decline over the same period. Kenya's infant mortality rate declined to 39 in 1000 live birth in 2014 from the 77 in 1000 live births recorded in 2003. However, on the negative side, the neonatal mortality rate remains high and accounts for approximately 35% of the infant mortality rate. Furthermore, the maternal death rate is still high at 362 deaths for every 100,000 live births.

This encouraging trend directly stems from the health care funding initiative from the government. The funding emanates from three major sources, namely: Out-of-Pocket (OOP) expenditure, donors, and government expenditure. Due to very high OOP expenses, accessibility to health care services in Kenya is still yet to be fully realized. According to Munge and Briggs (2013), many Kenyans fail to access health care services as a result of high medical fees. The study further revealed that the number of mothers and patients seeking health services rose due to health insurance that does away with user fees (fully or partially) in health facilities in Kenya. Donor funding remains a vital contributor as far as the financing of health care in Kenya is concerned. It does not only augment the government's budgetary allocation but also sponsors specific programs such as the fight against HIV/AIDS. According to the Ministry of Health (2016), donor funding accounted for about 32% of the total health spending. Donor funding supplements health care expenditure immensely, hence decreasing the OOP health expenditures.

The national government also plays a massive role in health care financing in Kenya. It allocated 59.2 billion Kenya Shillings to the health sector in the 2017/18 fiscal year with the figure, however, declining to 47.4 billion in the 2018/19 fiscal year. Since health is a devolved function in Kenya, the county governments have equally been shouldered with the responsibility of financing the sector through counties' budget allocation (Republic of

Kenya, 2017; 2018). Therefore, this reveals the commitment towards achieving Universal Health Care as shown in Table 1.

Table 1. National and County governments’ budgetary allocation to the Kenyan Health Sector

Financial Year	National government (KES. Billion)	County governments (KES. Billion)	Total (KES. Billion)	Percentage year-on-year change in Total
2018/19	47.4	68.2	115.6	–
2017/18	59.2	86.7	145.9	26.2%
2016/17	60.3	95.8	156.1	7%
2015/16	61.6	107.5	169.1	8.4%
2014/15	47.4	68.2	115.6	20%

Source: (Republic of Kenya: National Treasury Programme-based budget, 2014/15–2018/19)

Despite the governments’ efforts in achieving the UHC, Kenya’s health care budget is still yet to meet the provisions of the Abuja Declaration. This is a 2001 pledge by African countries to allocate at least 15% of their annual budgets towards health care (WHO, 2001). With proper utilization of the 15% set target, it is projected that countries will be able to significantly improve their infrastructure, security, education, and the governance structures of their economies as a whole.

The rest of the paper is structured as follows: Chapter two will review the existing literature. Chapter three will present the methodology. Chapter four will discuss the results while the final chapter will provide conclusions and policy implications.

2. Literature Review

Health care is a good investment due to its intermediary role in generating future productive days. The Grossman model of health care services borrows a great deal from the human capital hypothesis (Becker, 1964; Mincer, 1974). Grossman (1972) analyzed the role of human capital using a stock approach for health. Investment in health care services generates good health which helps in not only improving individual productivity but also enters the utility function through the production of commodities. Grossman (1972) envisages health as a durable capital stock that yields an output of healthy time. In this respect, consumers inherit an initial amount of this stock. This amount depreciates as the age of an individual increase but can be boosted by investment. The theory accounts for the gap between input (which is medical care) and output (health) which then ultimately enters into the production function. This link between inputs and outputs is then analyzed by the use of a health production function. Health care expenditure is treated as a function of human capital investment.

According to Baumol (1993), there is a tendency of relative prices of some services to rise in comparison to other commodities in the economy, thus, demanding sectoral wage equalization. More precisely, health care prices will increase relative to the prices of other commodities since wages in the less productive sectors need to keep up with wages in the more productive sectors. This theory explains the relationship between health care cost, laborers' wages, and the share of health care expenditure in GDP. A study on the rising health spending and the integration of new medical technology by Pomp and Vujic (2008) observed that in most Organization for Economic Co-operation & Development (OECD) countries, the rise in health expenditure as a share of GDP is most likely caused by the Baumol effect. Additionally, with an inelastic health care demand, then health spending will most likely increase over time.

Rahman (2008) investigated the determinants of public health expenditure in India using a panel data analysis approach. The study categorized expenditure into regional health expenditure and structural demand variables. The findings revealed that literacy rate and per capita income (real state) significantly determined regional health care. Conversely, the proportion of the state population above the age of 60 and other structural factors were found to be statistically insignificant.

Byaro et al. (2018) investigated the major drivers of per capita public health expenditure growth in Tanzania using nationally representative annual data between 1995 and 2014. The study estimated the Bayesian model premised on the Markov Chain Monte Carlo (MCMC) simulation technique. The findings revealed that per capita real GDP and age of the population (65 years and above) positively influenced health expenditure. On the other hand, advancement in medical technologies (proxied by life expectancy) negatively determined health expenditure.

In a study to examine the drivers of public health care expenditure, Boachie et al. (2014) used a 1970–2008 Ghanaian dataset. The study assessed the relationship between public health care expenditure and the socio-economic & environmental indicators using the Elliot Rothenberg & Stock (ERS) unit root and the Engle–Granger cointegration tests. The study investigated the long-run impacts of inflation, crude birth rate, real GDP, urbanization, CO₂ emissions, and life expectancy on public health care expenditure in Ghana using the Fully Modified Ordinary Least Squares (FMOLS) method. The results revealed a positive and significant impact of life expectancy, real GDP, and crude birth rates on public health expenditure. Life expectancy was measured by the degree of the healthiness of the population, while crude birth rate denoted the yearly number of births for every 1000 population. The Inflation rate, CO₂ emissions, and urbanization were found to be statistically insignificant. The study thus concluded that

healthcare was a necessity in Ghana. In an extended view, Murthy and Okunade (2009) find health to be a necessity and not a luxury good in OECD countries.

Buigut et al. (2015) studied the drivers of calamitous health expenditures in Kenyan urban slum communities. The study employed data from informal urban household settlements. From the multivariate logistic regression analysis results, an individual's membership to a social security scheme, and the number of working adults in a household, significantly reduced the risk of catastrophic expenditure. Conversely, the risk of catastrophic expenditure was significantly increased for those individuals who sought private or public hospital care. The study thus suggested risk pooling (insurance) as a mechanism towards protecting medical-seeking slum dwellers.

Gbesemete and Gerdtham (1992) find a close to unity income elasticity of health expenditure in a pooled analysis study involving selected 30 African countries. This implied that a household's income level significantly determined the health care expenditure. This was especially true for the case of OOP Expenditures where individuals have to finance their health expenditures directly from their pockets.

In a study conducted in the Netherlands by Grossman (1972), the price of a given health care cover or product was found to significantly determine health care expenditure in the public sector. In a related study, Grossman (2000) finds education to be a significant driver of health care expenditure. The level of education of an individual determines the rate of exposure to a certain health outcome which ultimately determines its expenditure. Human capital thus directly determines health care expenditure.

Newhouse (2002) examined the impact of technological progress (proxied by surgical procedures and the quality of medical equipment, infant mortality rates, and life expectancy) on health care expenditure. The study findings revealed that technological progress significantly determined health care expenditure. Technological innovations were cited as the main contributing factors to increasing health care costs. This was due to the costly nature of most of the advanced health care machinery and equipment as well as the positive relationship between technological advancement and health care expenditure.

The study by Tang (2010) investigated the drivers of health expenditure for Malaysia using data from 1967–2007. The price of health care, the percentage of the population aged above 65 years, and income were found to have a positive and long-run significant impact on health care expenditure. The study, thus, recommended the enactment of cost-effective health expenditure policies in a bid to ensure UHC. The study of Ang (2010) found a higher than one income elasticity for health care in Australia, which implied

that health care was a good luxury. Similarly, the study revealed that the more accessible health care services were, the higher the health expenditure.

Bonfrer and Gustaffson (2016) surveyed 1226 Kenyan agricultural households that were selected through random sampling. The study aimed at identifying the role of health shocks and the related coping behavioral strategies. Injury and illness shocks were found to dominate over all other prevalent shocks with almost 2% of households incurring calamitous health expenditure in the previous year. The study concluded that health shocks indeed posed a significant risk to households, hence, the need to implement pre-payment or saving mechanism schemes.

Most of these reviewed studies explore health care determinants in the developing economies context with very few targeting developing countries. Health shocks emanating from CO₂ emissions and unforeseen diseases, particularly HIV/AIDs, will be investigated in this study. More critical are the structural breaks that may result in a sharp upward or downward surge in public health expenditure. These are never factored in when estimating health care expenditure models in the Kenyan context. As a result, previous health expenditure studies in Kenya have, thus, yielded less accurate estimates with reduced forecast power. This study will, thus, contribute to the existing literature by incorporating the structural break dummy variables into the model.

3. METHODOLOGY

3.1 Empirical Model Specification

This research intends to examine the drivers of Public Health Expenditure (**PHE**) in Kenya. From the reviewed literature, **PHE** will be expressed as a function of the following economic variables: GDP per capita (GDP), HIV/AIDs infections (HIV), Age above 65 years (AGE), Population growth rate (POP), and CO₂ emissions in metric tons per capita (CO₂). Hence the empirical model can be specified as follows:

$$\ln(PHE)_t = \beta_0 + \beta_1 \ln(GDP)_t + \beta_2 \ln(HIV)_t + \beta_3 (AGE)_t + \beta_4 (POP)_t + \beta_5 (CO_2)_t + \mu_t \dots \dots \dots (1)$$

Where the β_s represent the population parameters, μ denotes the stochastic error term, and t is the time trend. \ln is the natural logarithm. Logarithmic transformation of the model is vital in controlling the outliers that may potentially arise among the variables. It helps in normalizing the data. This paper makes a major contribution by examining the role of structural breaks in determining public health expenditure in Kenya. As such, estimated break dates are to be determined using Zivot and Andrews (1992) unit root

test. Thereafter, structural break dummies are generated and incorporated into the public health expenditure model as shown in equation 2.

$$\ln(PHE)_t = \beta_0 + \beta_1 \ln(GDP)_t + \beta_2 \ln(HIV)_t + \beta_3 (AGE)_t + \beta_4 (POP)_t + \beta_5 (CO_2)_t + \beta_6 (SBD)_t + \beta_7 (SBD * X_i)_t + \mu_t \dots \dots \dots (2)$$

Where **SBD** is the structural break dummy and **X_i** are the explanatory variables already specified in equation 1. **(SBD * X_i)**, thus, denotes the interactive structural dummy variables. In modeling the ARDL Bounds testing procedure as developed by Pesaran and Smith (1999) and Pesaran et al. (2001), the null hypothesis postulates that there is No Cointegration. If the F statistic is less than the I (1) upper bound critical values, the null hypothesis of No Cointegration is not rejected. In the absence of Cointegration, the short-run (ARDL) model is specified and estimated as shown by equation 3:

$$\begin{aligned} \Delta \ln(PHE)_t = & \beta_0 + \sum_{i=1}^{q_1} \gamma_i \Delta \ln(PHE)_{t-i} + \sum_{i=0}^{q_1} \partial_i \Delta \ln(GDP)_{t-i} + \\ & \sum_{i=0}^{q_2} \delta_i \Delta \ln(HIV)_{t-i} + \sum_{i=0}^{q_3} \vartheta_i \Delta (AGE)_{t-i} + \\ & \sum_{i=0}^{q_4} \theta_i \Delta (POP)_{t-i} + \sum_{i=0}^{q_5} \phi_i \Delta (CO_2)_{t-i} + \sum_{i=0}^{q_6} \rho_i (SBD)_{t-i} + \sum_{i=0}^{q_7} \sigma_i (SBD * X_i)_{t-i} + \\ & \mu_t \dots \dots \dots (3) \end{aligned}$$

Where Δ denotes the Difference operator.

If the F statistic is greater than the I (1) upper bound critical values, the null hypothesis of No Cointegration is rejected implying that Cointegration does exist. The long-run relationship is, thus, modeled and, consequently, the Error Correction Model (ECM) is estimated as shown in equation 4.

$$\begin{aligned} \Delta \ln(PHE)_t = & \beta_0 + \sum_{i=1}^{q_1} \gamma_i \Delta \ln(PHE)_{t-i} + \sum_{i=0}^{q_1} \partial_i \Delta \ln(GDP)_{t-i} + \\ & \sum_{i=0}^{q_2} \delta_i \Delta \ln(HIV)_{t-i} + \sum_{i=0}^{q_3} \vartheta_i \Delta (AGE)_{t-i} + \sum_{i=0}^{q_4} \theta_i \Delta (POP)_{t-i} + \sum_{i=0}^{q_5} \phi_i \Delta (CO_2)_{t-i} + \\ & \sum_{i=0}^{q_6} \rho_i (SBD)_{t-i} + \sum_{i=0}^{q_7} \sigma_i (SBD * X_i)_{t-i} + \\ & \lambda ECT_{t-1} + \mu_t \dots \dots \dots (4) \end{aligned}$$

Where **γ_i**, **∂_i**, **δ_i**, **ϑ_i**, **θ_i**, **φ_i**, **ρ_i**, and **σ_i** are the short - run dynamic coefficients of the models' Adjustment Long - run equilibrium. **λ** is the speed adjustment parameter with a negative sign and denotes model convergence in the long - run. **ECT** is the Error Correction Term while **q** denotes the optimal lag length.

3.2 Descriptive Statistics

This is presented in Table 2 below.

Table 2. Descriptive statistics

Variable	Description and Measurement
Public health expenditure (PHE)	The total annual public expenditure on the health sector in Kenya shillings (KES). PHE is defined in its natural logarithm.
GDP per capita (GDP)	This refers to Kenya’s total economic output per person and is obtained by dividing the GDP by its population. It is measured in KES but will be expressed in a natural logarithm.
HIV/AIDS infections (HIV)	The annual number of people infected and living with HIV/AIDS. It is expressed in a natural logarithm.
Age above 65 years (AGE)	The yearly proportion of the number of adults with a population age of 65 years and above.
Population growth rate (POP)	The annual rate of growth of the population.
CO ₂ emissions (CO ₂)	The annual amount of CO ₂ emissions in metric tons per capita.

Source: Author’s description

3.3 Data Type and Source

This study employed time series data for the period 1985–2018. Data on CO₂ emissions, population growth rate, GDP per capita, and age above 65 years was obtained from the World Bank database. Data on public health expenditure was obtained from the Ministry of Health, National Treasury & Planning, and Kenya National Bureau of Statistics statistical reports and abstracts. Finally, data on HIV/AIDS was sourced from the National AIDS Control Council (NACC) database.

3.4 Summary Statistics

This is shown in Table 3 below.

Table 3. Summary statistics of variables (N=34)

Variable	Mean	Std. dev.	Min.	Max.
Public health expenditure	3.23e+10	4.75e+10	8.41e+07	1.69e+11
GDP per capita	672232.6	426711.6	220070	1707987
HIV/AIDS infections	1190889	373590.1	420000	1929000
Age above 65 years	2.2591	0.2118	1.932	2.647
Population growth rate	2.9041	0.3829	2.306	3.745
CO ₂ emissions	0.2751	0.0542	0.19	0.38

Source: Compiled from Stata

Table 3 shows that the annual average amount of money spent by the government in the Kenyan health sector was 32.3 Billion Kenya shillings (KES). The variable also had the highest standard deviation of 47,500,000,000 around the mean value. The lowest amount of money allocated to the public health sector was KES. 84, 100, 000 with the highest being KES. 169 Billion. Public health expenditure was lower in the earlier years due to low levels of economic growth and development but has been steadily increasing annually.

With devolution taking effect in 2013, the budgetary allocation to the health sector rose tremendously. GDP per capita averaged approximately KES. 672, 232 with a dispersion rate of 426, 711, and varied in the intervals of 220, 070 and 1,707, 987. On average, 1, 190, 889 people are infected and living with HIV/AIDs in Kenya. The proportion of the number of adults with a population age of 65 years and above averaged about 2.26%, while Kenya's population growth rate averaged 2.90% per annum. The average annual amount of CO₂ emissions in metric tons per capita was recorded at 0.28% with a standard deviation of 0.05 and is varied within the intervals of 0.19 and 0.38.

4. Results

4.1 Pre-Estimation Tests

4.1.1 Unit Root Test

Testing for the order of integration for each variable in the model is vital as it helps in avoiding potential spurious and or inconsistent regression, i.e., having more than one trend in the series. The Augmented Dickey-Fuller test after Dickey and Fuller (1979) and the Phillips and Perron (1988) unit root tests yielded the following results (See Table 4).

Table 4. Stationarity test results

Variable	ADF test				Phillips–Perron (PP) test		
	Testing level	Test Statistic	Critical Value (5%)	Order of Integration	Test Statistic Z (t)	Critical Value (5%)	Order of Integration
lnPublic Health Expenditure	Level	-0.747	-2.978	I (1)	-0.708	-2.978	I (1)
	1 st D	-5.852	-2.980		-5.864	-2.980	
lnGDP per capita	Level	0.538	-2.978	I (1)	0.308	-2.978	I (1)
	1 st D	-4.156	-2.980		-4.142	-2.980	
lnHIV/AIDs infections	Level	-2.863	-2.978	I (1)	-2.684	-2.978	I (1)
	1 st D	-4.372	-2.980		-4.407	-2.980	
Age above 65 years	Level	-2.246	-2.978	I (2)	-1.835	-2.978	I (2)
	1 st D	0.764	-2.980		0.788	-2.980	
	2 nd D	-5.052	-2.983		-5.070	-2.983	
Population growth rate	Level	-3.219	-2.978	I (0)	-2.027	-2.978	I (3)
					-1.299	-2.980	
					-1.877	-2.983	
					-3.503	-2.986	
CO ₂ emissions	Level	-1.646	-2.978	I (1)	-1.647	-2.978	I (1)
	1 st D	-6.883	-2.980		-6.866	-2.980	

Source: Stata computation

Notes: D denotes Difference.

4.1.2 Unit Root Test in the Presence of Structural Breaks

Testing for structural breaks in time-series economics has become extremely relevant in recent times (Glynn et al., 2007). Structural break(s) normally arise when there is a sudden unexpected shift or abrupt change in the time-series variables at a certain point in time. This abrupt change causes a change in the mean or a shift in other parameters in the series, hence, leading to unrealistic estimated parameters. If not controlled, structural breaks may result in incorrect forecasting. Some of the factors that can lead to structural breaks include economic boom or recession, natural calamities, war, political instability, disease pandemic, financial crises, etc. Also, Zivot and Andrews (1992) observed that the traditional unit root tests like ADF become ineffective in testing for a unit root when structural breaks are present.

Zivot and Andrews (1992) and Pesaran (2015) further revealed that both PP and ADF tests are asymptotically equivalent, have lower power, and do fail to reject the invalid null hypothesis in the case where the coefficient in AR (1) process is close to one. Testing for structural breaks, thus, yields a more accurate forecast in time-series analysis when compared to other studies that ignore the structural breaks (Ndirangu et al., 2014). If structural breaks are detected, then structural break dummy variables will be generated and included in the time-series regression model. This study, thus, employed the Zivot and Andrews (1992) unit root test to capture the structural breaks (see Table 5).

Table 5. Zivot-Andrews Unit Root Test results

Break in Intercept and Trend					
Variables	Structural break date/year	Testing level	t-statistics	Critical value (5%)	Integration Order
lnPublic Health Expenditure	1998	Level	-12.460	-4.80	I (0)
lnGDP per capita	1991	Level	-3.378	-4.80	I (1)
	1994	1 st D	-5.919	-5.08	
lnHIV infections	1991	Level	-4.360	-4.80	I (1)
	2000	1 st D	-6.860	-5.08	
Age above 65 years	2013	Level	-0.944	-4.80	I (1)
	2006	1 st D	-6.840	-5.08	
Population growth rate	2003	Level	-4.206	-4.80	I (1)
	2006	1 st D	-5.730	-5.08	
CO ₂ emissions	2002	Level	-5.646	-4.80	I (0)

Source: Compiled from Stata

Since the Zivot-Andrews’s unit root test results (in Table 5) revealed that the variables were integrated with a mixture of order 0 and 1, the ARDL model was adopted (Pesaran & Shin, 1999; Pesaran et al., 2001). This model is advantageous in the sense that it does not require all variables to be integrated of the same order. ARDL is also efficient in cases where small and finite sample data sizes are involved. Furthermore, Harris and Sollis (2003) observe that the model yields unbiased long-run estimates.

4.1.3 ARDL Bounds Test

Since the variables were found to be integrated by a mixture of order I (0) & I (1), the ARDL bounds testing procedure became applicable (Pesaran & Shin, 1999; Pesaran et al., 2001). It is possible to test for Cointegration within the ARDL framework. Therefore, the ARDL bounds test results are shown in Table 6.

Table 6. ARDL Bounds Test Results

	10%	5%	2.5%	1%
I (0) values	1.95	2.22	2.48	2.79
I (1) values	3.06	3.39	3.70	4.10
F statistic = 5.054				

Source: Stata computation

Table 6 revealed that the F statistic was greater than the I (1) upper bound critical values; hence, the null hypothesis of No Cointegration was rejected. This implied that Cointegration did exist. An Error Correction Model (ECM) was thus fitted within the ARDL framework to capture both the short-run and long-run relationships.

4.2 Empirical Findings

Several diagnostic tests were performed to ascertain the validity and accuracy of the public health expenditure model results. The Breusch and Pagan (1979) heteroskedasticity test revealed that the model was homoscedastic ($0.6756 > 0.05$). The optimal lags adopted by Akaike Information Criterion (AIC) automatic lag selection were 1, 2, 2, 0, 1, and 1. The Breusch and Godfrey (1978) LM autocorrelation test was employed with the results revealing that the error terms were not serially correlated ($0.0661 > 0.05$). In checking for normality, the Jarque-Bera (1987) test was employed. With the probability value of chi-squared reported to be 0.633, which is greater than the 0.05 significance level, the null hypothesis of Normality was not rejected implying that the residuals followed a normal distribution. The models (with and without the structural break dummies) were then estimated with the results presented in Table 7.

Table 7. ARDL Model results

Dependent variable: lnPublic Health Expenditure	Coefficients	
	Model 1: Without structural break dummies.	Model 2: With structural break dummies.
Error Correction Term (ECT)	-0.712*** (0.174)	-0.757*** (0.171)
Long-Run Relationship		
lnGDP per capita	5.563*** (1.490)	5.553*** (1.490)
lnHIV AIDs infections	5.303* (2.918)	5.143* (2.879)
Age above 65 years	3.984* (2.271)	3.542 (2.361)
Population growth rate	1.870 (2.872)	2.499 (2.689)
CO ₂ emissions	-16.28 (10.81)	-12.68 (12.50)
SBD	–	364.6* (189.6)
SBD* lnGDP per capita	–	-25.80* (13.72)
SBD* Population growth rate	–	-11.16** (5.024)
Short-Run Relationship		
D. lnGDP per capita	-3.432*** (1.113)	-3.498*** (1.038)
LD. lnGDP per capita	-3.434*** (1.176)	-3.919*** (1.101)
D. lnHIV AIDs infections	-2.855* (1.502)	-2.480 (1.615)
LD. lnHIV AIDs infections	-3.105** (1.432)	-4.103** (1.710)

D. Population growth rate	22.50** (8.360)	24.02*** (7.945)
D. CO ₂ emissions	12.60** (5.100)	16.77** (5.781)
Constant	-94.87** (38.44)	-100.5** (39.34)
R squared	0.6684	0.7634
Adj. R squared	0.4589	0.5416
Observations (N)	32	32
Jarque-Bera Normality test	Prob>X ² = 0.633**	Prob>X ² =0.1466**
Breusch-Pagan heteroskedasticity test	Prob>X ² = 0.6756**	Prob>X ² =0.8252**
Breusch-Godfrey LM Autocorrelation test	Prob>X ² = 0.0661**	Prob>X ² =0.0549**

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Notes: L denotes lag while **SBD** is the generated **Structural Break Dummy** variable. The variable was also interacted with *lnGDP per capita* and *Population growth rate* to assess the effect of these interactive term break variables on public health expenditure. We did not interact the break dummy variable with HIV/AIDS infections, CO₂ emissions, and Age above 65 years variables due to multicollinearity problems.

The study findings revealed that the coefficient of ECT was negative and significant, implying model convergence in the long run. This indicated the presence of a long-run relationship among the variables. Any deviations from the long-run equilibrium are corrected at an adjustment speed of 75.7%. A key finding of this study was that the structural break dummy variables were found to have a significant impact on public health expenditure in Kenya. The structural breakpoints for some of the key macroeconomic variables coincided with core economic developments in Kenya. For example, the breakpoint for public health expenditure in 1998 coincided with the post-election political violence that arose from the 1997 General Elections. The breakpoint for GDP per capita in 1991 coincided with the pinnacle point in the struggle for Multi-Party Rule (political instability). The year 2003 marked the ushering in of a new government administration that rapidly implemented positive political and governance reforms that, consequently, saw a sharply increased budgetary allocation to the Ministry of Health.

More importantly, the breakpoint in 2013 coincided with the sharp rise in health expenditure due to the counties' devolution effect (implementation of the new constitution). Testing for structural breaks is, thus, very vital when modeling healthcare expenditure models as it yields a more accurate forecast in time-series analysis when compared to those studies that ignore the structural breaks. Furthermore, with the break dummies, the model is a good fit, i.e., it has a higher coefficient of determination. Surprisingly, previous studies on healthcare expenditure in the Kenyan context have, however, failed to take cognizance of this vital inclusion when modeling healthcare expenditure models.

A 1% increase in GDP per capita significantly increased public health expenditure by 5.55% *ceteris paribus*. This impact was, however, found to be significantly negative in the short run. GDP per capita is a measure of a country's living standard, and it positively informs health expenditure patterns with the impact being heavily felt in the long run (Boachie et al., 2014). A 1% increase in the number of persons infected with HIV/AIDS significantly increased public health expenditure by 5.14% *ceteris paribus*. The impact was, however, found to be insignificant in the short run. HIV/AIDS increases public health expenditure both directly through the acquisition of drugs, i.e., Antiretroviral (ARVs), and indirectly through causing other unforeseen illnesses/ailments. This disease acts as a health shock, thus, causing an upward surge in health expenditure. As observed by Bonfrer and Gustaffson (2016), injury and illness shocks pose a significant risk to households as they result in calamitous health expenditures. Population growth rate and CO₂ emissions were found to significantly and positively determine public health expenditure in the short run. This impact was, however, insignificant in the long run.

Conclusions and Policy Implications

This study found the presence of a long-run relationship between public health expenditure and its determinants in Kenya. Population growth rate and CO₂ emissions (proxy to respiratory illnesses) were found to significantly and positively determine public health expenditure in the short run. The impact was, however, found to be insignificant in the long run. Similarly, GDP per capita and the number of HIV/AIDS infections positively and significantly determined public health expenditure in the long run. A key finding of this study highlighted the importance of testing for structural breaks in analyzing a time-series health care expenditure model. Previously, this is something that has been largely omitted in the Kenyan health care context. The structural break dummy variables significantly determined public health expenditure and, therefore, their incorporation in the model yielded a more accurate forecast with better econometric estimates.

Since an increase in public health expenditure is normally occasioned with improved health outcomes, there is a need for the Kenyan Government to increase its budgetary allocation to the Ministry of Health. This will help in achieving the UHC as envisioned in the governments' 'Big Four Agenda' priorities. Furthermore, this will help boost both the human and physical capital which are requisites to facilitating better health care. Besides, there is a need for the Government through the Ministry of Health to develop extensive and effective health shock mitigation strategies to help counter the calamitous health expenditures that are brought about by diseases such as HIV/AIDS pandemic. Pollution control strategies are also paramount in helping to alleviate the illnesses associated with CO₂ emissions.

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The Prevention and Reduction of the Bullwhip Effect by Electronic Data Interchange and Collaborative Forecasting

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Abstract

The bullwhip effect is a phenomenon of curious amplification of variations in demand as one moves away from the final customer. Popularized by Lee and al., (1997), the bullwhip effect has negative consequences on all actors in the supply chain because it generates considerable loss of profits: Too much stock, loss of sales, poor customer service, insufficient quality and multiple disruptions of flow and organization. To prevent and reduce the bullwhip effect, various tools are recommended. The Electronic Data Interchange (EDI) is among the most important given its impact on accelerating information sharing throughout the supply chain. This paper aims to shed light on the role of EDI, VMI (Vendor-managed inventory) and CPFR (collaborative planning forecasting and replenishment) in the prevention and reduction of the bullwhip effect in the supply chain.

Keywords: Bullwhip effect, automotive supply chain

Introduction

A relatively recent phenomenon, the Bullwhip Effect has been widely described and explained in the literature. Lee et al., (1997) shows the existence of increasing variability in demand by moving away from the final customer despite rational behavior of supply chain actors. It is represented by an abnormal amplification of changes in demand as one moves away from the end buyer. Popularized by Lee et al., (1997), the bullwhip effect has negative consequences on all actors in the chain because it generates considerable loss

of profits: Too much stock, loss of sales, poor customer service, poor quality insufficient and multiple disruptions of flow and organization; they explain this phenomenon by four main causes: updated demand forecasts, subdivision policies, anticipation of shortages and price variations.

Chatfield et al. (2004) attempt to quantify the impact of the variability of replenishment times and the quality of the information shared on the boost effect in the case of standardized production. Their conclusion is that information sharing can dramatically reduce the boost effect and that variability in lead times tends to increase it. Sucky (2009) is interested in the structure of the supply chain as an aggravating or mitigating element of the boost effect. Cheng (2009) analyzes the impact of the combination of replenishment policies on the performance of the Supply Chain dedicated to standardized production and on the Bullwhip Effect. The non-existence of shared information or the sharing of unnecessary information are shown as causes of the Bullwhip Effect by articles with the purpose of both information sharing and the Bullwhip effect.

In addition, the efficient exchange of information between the partners of a supply chain can prevent and avoid a bullwhip effect, in addition, it can contribute to an increased performance of the supply chain. In fact, in "a world which reduces international space to the list of a telephone directory" (Ettighoffer, 1992), in addition to an electronic mail book and internet contacts, we are witnessing a strong rise in exchanges. of inter-company data, replacing or supplementing intra-company networks. Manufacturers have understood that it is essential to synchronize the tense flow of materials with the flow of information through EDI technology (Electronic Data Interchange) which is a tool that provides very remarkable benefits in terms of flow management. information between supply chain partners and therefore on the quality of information. EDI is a technology which therefore fits into a context of globalization and Total Quality (Raymond, Bili and Bergeron, 1994).

The aim of our article is to shed light on the role of EDI in preventing and reducing the bullwhip effect. First, we will try to conceptualize the basics: the Bullwhip effect, Electronic Data Interchange. Secondly, taking inspiration from the literature, we discuss how VMI (vendor managed inventory) and CPFR (collaborative planning forecasting and replenishment) ensure the prevention of the Bullwhip effect by better sharing of information in time real. Thirdly, we deal with the impact of EDI on information flows and therefore on the prevention of the Bullwhip effect before concluding with an analysis of semi-structured interviews with players in the automotive supply chain who explained how they deal with this kind of phenomenon and to shed some light on the question: whether widespread EDI helps to mitigate, prevent and counteract this boost effect.

1. Origin of the concept Bullwhip effect

The bullwhip effect is a phenomenon that consists of an extraordinary amplification of variations in demand as one moves away from the end customer. The name was popularized by Lee et al. (1997), but the first to study it is Jay Forrester who sees its origin in the irrationality of the behavior of actors in the logistics chain. In 1961, Forrester, through the Massachusetts Institute of Technology (MIT), published his book "Industrial Dynamics" where he first introduced the term "bullwhip effect". Since the end of the 1980s, other authors interested in the Bullwhip effect have explained that the cause lies rather in the interactions that exist between these same actors whose behavior is considered rational and locally optimized. Several factors can be responsible for this effect:

- The degree of imprecision of the information,
- The lack of transparency in the logistics chain,
- Long Lead-Times,
- A pronounced disconnection between consumption (actual customer demand) and production (actual factory activity).

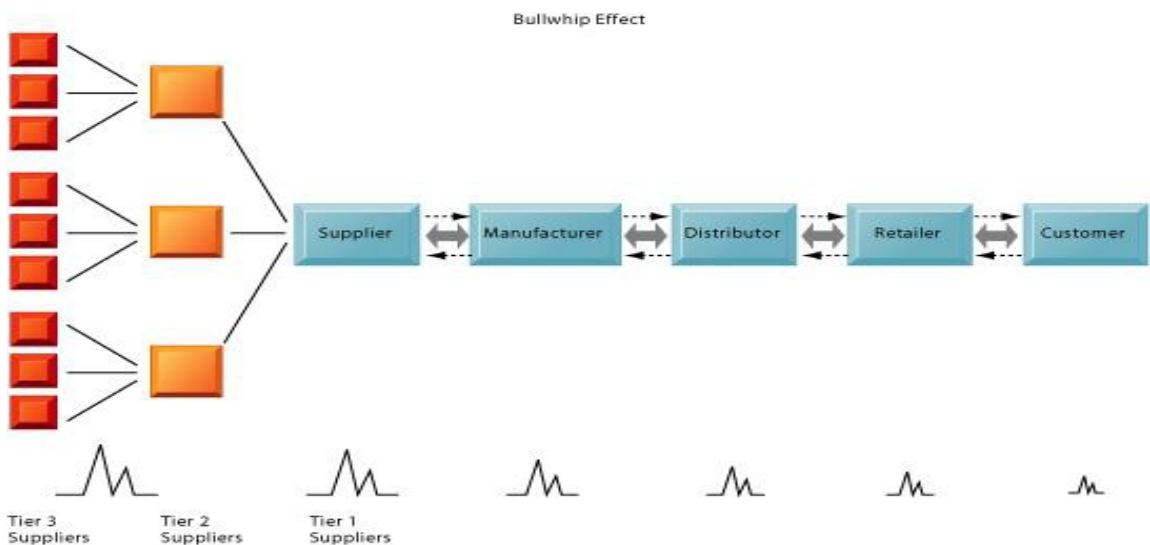


Figure 1: Amplification of stocks demand and variations in supply chain

2. Main causes of the bullwhip effect

Lee and al. (1997) identify the main causes that are at the origin of the boost effect in the downstream logistics chain, they are four in number:

- Updating the demand forecast,
- The size of the lots,
- Anticipation of shortages,
- Price variability.

The articles that followed and which focused on the causes of the boost effect generally focused on one of the causes of this phenomenon in order to understand the impact and measure its relative importance in relation to other. In a downstream logistics chain organized in series, Chatfield et al. (2004) attempt to quantify the impact of the variability of replenishment times and the quality of the information shared on the boost effect in the case of standardized production. Their conclusion is that information sharing can dramatically reduce the boost effect and that variability in lead times tends to increase it. Sucky (2009) is interested in the structure of the supply chain as an aggravating or mitigating factor of the boost effect. It demonstrates, through a simulation model, that the boost effect tends to be overestimated because it is generally measured on serial logistics chains which do not allow pooling and compensation phenomena to be taken into account. Cheng (2009) analyzes the impact of the combination of replenishment policies on the performance of the supply chain and on the Bullwhip effect in the downstream supply chain dedicated to standardized production. Wang et al. (2005), for their part, introduce the notion of the extended Bullwhip effect by adding socio-organizational causes to the list of its classic causes.

The non-existence of shared information or the sharing of unnecessary information are presented as causes of the Bullwhip effect by articles whose purpose is both information sharing and boosting effect. Only Childerhouse and al. (2008) discuss the mechanisms behind the boost effect in the upstream logistics chain. They use the results of a study carried out in the automotive industry to establish the cause and effect link, represented in the form of a vicious circle, between the instability of forecast production programs and the increasing oscillations phenomena generated. accordingly along the upstream logistics chain. This phenomenon is not the preserve of industries that experience strong fluctuations in demand, such as those with high seasonality. This is why, despite a reliable and stable final demand, some industries spend millions of euros in a permanent struggle between satisfaction of deliveries (painfully provided at great exceptional transport costs) and management of minimum stocks (which experience strong fluctuations and high management costs).

Generally, the various links in a logistics chain only have access to fragmented or incomplete information. Very often, this is unreliable information: forecast demand far from actual demand, deliveries from suppliers that do not correspond to orders, commercial information that is difficult to interpret in terms of consumption. The information is imprecise and worse still, it is distorted by successive links in the chain. In many cases, the lack of flexibility and flexibility of production systems does not allow efficient production (without loss of productivity) of demands that vary greatly in volume and variety. Very large and often poorly controlled stocks are then

generated in order to be able to meet these demands (long lead-time). The slightest fluctuation in demand causes either the fear of a break in delivery or overstock and very often both. Therefore, corrupted orders are generated to the suppliers.

3. Prevention and reduction of the Bullwhip effect by EDI and other similar tools

3.1. Origin and definition of Electronic Data Interchange

Born in the United States during the 1960s (Roesch, 1991), Electronic Data Interchange (EDI) is defined as the transfer from computer to computer, from one application to another, of data structured according to pre-established messages. and standardized by means of telecommunication. This technique allows the automatic exchange of data coded according to a previously agreed language between applications and heterogeneous information systems. Exchanges take place using various telecommunications networks (Jin et al., 2000). Even though EDI is used for internal communication, its main applications are aimed at facilitating collaboration between organizations such as the company, its suppliers, customers, carriers, etc. (Vlachos, 2004). EDI offers an alternative to traditional means of communication regarding the transfer of documents such as purchase orders, invoices, shipping notices, etc. (Vijayarathy and Tyler, 1997). This structured data can be processed by computer information systems without any human intervention being required. Thus, the data transmitted by the transmission system can be directly retrieved and interpreted by the reception system (Jin et al., 2000).

Although the use of EDI has many advantages (Lim and Palvia, 2001), the reasons for its adoption are diverse and seem to have an impact on its use.

Different typologies of reasons for adopting EDI can be found in the literature (Masson and Ferguson, 1991; Vijayarathy and Tyler, 1997). Customer satisfaction seems to be the main reason for its adoption, in fact, a large customer often forces the adoption of EDI on their “small” partners (Vlachos, 2004). EDI is also believed to reduce costs by reducing paperwork, eliminating the cost of entering data, improving accuracy, making it possible to receive timely information, accelerate cash flow and reduce stocks (Vijayarathy and Tyler, 1997). EDI plays a key role in the supply chain: it makes it possible to improve inventory management and the optimal organization of deliveries (Vijayarathy and Tyler, 1997) by directing the company towards a practical fluid management oriented towards response to the real needs of the final consumer (Craighead et al., 2006).

EDI offers better inventory management and improves the value chain between supply chain actors, it allows better efficiency in transaction processing and improved coordination between information systems (Hill and

Scudder, 2002). Additionally, buyers and suppliers see the benefits of EDI in reducing errors associated with manual, paper-based systems. Decreased errors are directly correlated with better product quality, cost reductions, improved cash flow and optimization of the order cycle (Masson and Ferguson, 1991).

3.2. Importance of Information Sharing

Companies operating in decentralized supply chains around the world have realized the beneficial nature of sharing market data. In fact, the savings generated by information sharing vary between 3.4% (Cachon and Fischer, 2000) and 10% of the total supply chain costs (Hosoda et al., 2008). When information sharing is part of the perspective of implementing decision coordination mechanisms, the benefit is even greater (Wu and Katock, 2006). Most of the articles focusing on information sharing suggest improving the coordination of the supply chain. (Cachon and Fisher, 2000) recommend accelerating the flow of information (including EDI) to improve the performance of the distribution supply chain and reduce the bullwhip effect. (Chen et al., 2006) propose to contractualize the notion of risk between customer and supplier to improve the overall profit of partners. (Ganesh et al., 2007) establish decision rules regarding the level of information sharing to be established between wholesaler and retailer based on the substitutability of finished products. (Croson and Donohue, 2005) suggest the use of different replenishment policies depending on the position of the flow in a serial supply chain.

3.3. The VMI and CPFR tools and their impact on the Bullwhip effect

Innovative decision-sharing and coordination mechanisms have integrated decentralized supply chains and are gradually gaining ground. Among these tools, the most original are certainly the VMI (vendor managed inventory) and the CPFR (collaborative planning forecasting and replenishment). The VMI is an agreement under which the distributor entrusts his supplier with the responsibility of managing his stocks. It is a process particularly used in mass distribution, it consists in the management of locations and stock levels, based on the actual consumption of products on the sales floor, including flow management, from production sites to installation in store shelves is obviously managed by the supplier.

VMI can reduce Bullwhip Effect by 50% (Disney and Towell, 2003). It is part of a confiding approach by the distributor who, in exchange for providing information on its sales and stocks, avoids the constraints of supply, and benefits from an increased service rate. The supplier, on the other hand, benefits from a significant reduction in the uncertainty relating to the forecasting of final demand and, at the same time, a reduction in his safety

stock. It also benefits from a drop in logistics costs, delivery times, transport costs, and an increase in the service rate. On the other hand, the CPFR represents the most successful form of supply chain management. It reflects a situation where members of the supply chain exchange information and jointly manage the important processes of their supply chain, including sales forecasting. Like VMI, collaborative forecasting has proven to be successful in MCS practice. In theory, collaborative forecasting can reduce supply chain costs by an average of around 20% (Aviv, 2001).

3.4. The impact of EDI on the Bullwhip effect

It is proven that the use of EDI significantly reduces information times, thus it should significantly reduce the Bullwhip effect, it should also lead to a reduction in related costs at all levels of the supply chain. When it comes to the transmission of information, EDI saves businesses considerable amounts of time and money. The variable cost savings derived from the fact that the documents exchanged are no longer recorded manually are estimated at 3.5 - 15% of the value of the product (Chip, 1993). Procter and Gamble have estimated that their order processing cost ranges from US \$ 35- US \$ 75 per invoice due to manual intervention (Lee et al., 1997a), which is why companies often accumulate batches of command before issuing an order, thus generating one of the possible causes of the bullwhip effect (Lee et al., 1997a, b). Therefore, the use of EDI does not only benefit businesses by reducing order processing costs; the frequent replenishment of material requirements in small batches reduces distortions in the request for information, with a subsequent reduction in the boost effect and the excessive costs it generates. The ordering policy adopted by managers at different stages of the supply chain is frequently based on the average of the expected level of demand for each period of time and the expected range of variation. The objective of this policy is to ensure that there is sufficient stock to cover the situations of variations in demand during the period; logically, the longer the delay, the greater the multiplier effect of changes in predicted variability. This leads to greater amplification and fluctuations in the actual orders placed, which clearly intensifies the bullwhip effect. Therefore, any significant reduction in delays in the transfer of information through the EDI interface will provide benefits through the reduction in both the size and variability of orders placed, yet against the blow bullwhip effect. In addition, there will be a reduction in the harmful effect generated by the lack of feedback and the underestimation of deadlines (Sterman, 1989).

Another factor to be taken into consideration is that the amplifying effect extending along the supply chain tends to result in a level of production of finished products greatly exceeding the actual demand. This distortion obviously results in excess inventory throughout the chain. These unnecessary

costs could be reduced by implementing measures such as EDI to counteract the bullwhip effect, reduce the excess material flowing along the supply chain, thereby reducing transport costs.

EDI also ensures the rapid transmission and sharing of fair and reliable information at the different levels of the supply chain, thus making it possible to counter another cause of the boost effect (Lee et al., 1997). The greater stability in orders placed with the plant will lead to more stable production levels. This will allow for more efficient planning of production, with a decrease in the need for costly corrections and therefore a reduction in costs in this direction. EDI affects and is affected by several environmental variables at the same time. It is therefore difficult to distinguish between the effects produced by these variables and those resulting specifically from the use of EDI compared to traditional systems. One of the obstacles to the adoption of EDI is, precisely, the difficulty of quantifying its cost and benefits (Benjamin et al., 1990; Pfeiffer, 1992; Emmelhainz, 5 1993). Another commonly cited barrier is the lack of public interest due to the lack of perception of the true benefits of EDI (Walton and Lewis, 1995).

To significantly reduce the bullwhip effect, EDI must be installed throughout the supply chain. One solution to convince business leaders at all stages of the chain of the potential benefits of this system would be to demonstrate how the supply chain works in a representative market where the only difference between two successive experiences is the use, or no, from EDI. It also seems that it will be necessary to prove that the possible reductions in costs and the advantages available for each level of the chain justify the cost and the efforts required to modify the existing methods by implementing EDI at each specific stage. . A number of studies show that many companies are forced by their suppliers or customers to adopt EDI without having a clear vision of the benefits it can generate (Mackay and Malcolm, 1996; Chen and Williams, 1998).

4. Research methodology and results

4.1. Research Methodology

The approach of semi-structured interviews was adopted to confirm or reject the hypothesis of our research: the use of EDI at the various levels of the automotive supply chain will result in a considerable reduction of the bullwhip effect at the level of inventory, inventory management costs. We chose to interview various players in the automotive industry upstream and downstream (several levels of the automotive supply chain: automobile manufacturer, assembly plant, rank 1, rank 2 suppliers, exclusive distributor, subcontractor , branch, dealers ...).

Contacted Companies	People Resource
2 assembly and bodywork factories	Industrial Information Systems Project Manager Deputy Head of Technical Department Supplier Relations Manager
1 exclusive importer	Logistics manager
1 wiring subcontractor	IT manager and technician
3 OEMs (tier 1 suppliers)	Logistics managers Customer Relations Manager
1 supplier rank 2	Customer Relations Manager
1 Indian brand branch	Sales manager
3 dealers in Agadir with different products: - High-end cars - French brand cars - German and Japanese cars	Sales manager technical Manager Director
1 Korean brand after-sales service and repair workshop	Workshop chief

For each company, semi-structured interviews lasting approximately 30 minutes with engineers, senior and middle managers in the fields of production, information systems and logistics were carried out and analyzed. These were followed by telephone conversations and emails providing additional information.

4.2. Discussion of the results

The following table presents the general summary of the interviews carried out with the various actors of the automotive industry in Morocco:

EDI usage	EDI users	No EDI Users
Activities	Assembly plants Exclusive car importer Tier 1 suppliers Tier 2 supplier Dealer	Branch Dealers Subcontractor After-sales and repair workshop
Size	Large business and SMEs	SME
Information system	Highly Developed, Standard Integrated System: ERP	Not very developed, no ERP
Existence and frequency of the demand amplification problem	Sometimes, the origin: a cause and effect link between the instability of forecast production programs and the boost (increasing amplifications) phenomenon generated along the upstream logistics chain.	Yes Frequently
How do they prevent and / or reduce the bullwhip effect	With EDI used throughout the automotive supply chain, a significant reduction in bullwhip is observed:	It depends on the situation

	<ul style="list-style-type: none"> - On stocks, - Sue inventory management costs, - On the instability which makes it possible to reduce the circle of uncertainty <p>This translates into a reduction in the Bullwhip effect throughout the supply chain</p>	<p>They cope with the means available</p> <p>Fast reactivity</p>
Explanations	<p>International standard system imposed by the main supplier to facilitate exchanges and improve responsiveness, Fewer errors, reliability, speed and security</p>	<p>Limited technological means, insufficient human skills in IT and logistics, reduced volume of exchanges not requiring an EDI tool, satisfaction of traditional means.</p>

The semi-structured interviews allowed us to validate the hypothesis that the use of EDI at different levels of the automotive supply chain results in a substantial reduction in the boost in inventory and in the costs of managing the vehicles. stocks. The interviewees knowing the phenomenon studied explained to us that EDI ensures a considerable reduction of this problem between the various actors of the Supply chain thanks to the systematic sharing of information and the fluidity of the information flows useful for the good functioning of the company. . Other interviewees expressed their total ignorance of the bullwhip effect and explained after understanding the phenomenon that their reaction varies depending on the situation, but in general rapid reactivity helps them to avoid problems similar to the bullwhip effect with exploitation of available means.

We have noticed that there is a real gap between manufacturers who are ahead of the curve in terms of maturity and the world of certain suppliers who find it a bit difficult to keep up with EDI. Sometimes a good exchange of fax, e-mail with updated and reliable information works just as well, if not better. To improve the level of agility of forecasts provided by manufacturers of Tier 1, 2 and 3 suppliers, managers need a certain pragmatism to help Tier 1 suppliers communicate with Tier 2 suppliers and so after.

In fact, upstream in the chain, large companies practice EDI in their relations with manufacturers and / or suppliers in France, Spain, India,

Morocco, etc. For example, assembly plants have strongly encouraged their first-tier suppliers to communicate with them via EDI because of its inherent ability to counteract the boost and also facilitate just-in-time practices that are largely used by car manufacturers. Suppliers who cannot comply risk being removed from the manufacturer's supplier portfolio. A company's supplier relations manager testifies that EDI is the most efficient system for rendering JIT information and production and dramatically reducing the bullwhip effect. Downstream, distributors have expressed a need for tools that standardize trade and avoid waste of time, errors and waste, but only one dealer uses EDI technology, which has been imposed by the main supplier. Other dealers continue to use traditional exchange tools such as fax, telephone, e-mail. The need to use electronic means to track orders and spare parts is not very urgent for some.

If we take into account the opinions of some companies, they feel that they are compelled to use EDI without having any real belief about the benefits that will be derived from its implementation. These companies compare the benefits with the corresponding costs and effort involved in implementing this technology. Managers may be aware of the possible benefits that derive from the implementation of EDI which makes it easier to negotiate about the possible exchange through EDI between companies operating in different levels of the chain, so that acceptable and fair results can be enjoyed by all.

The study thus allowed us to validate the hypothesis that the use of EDI at the different levels of the automotive supply chain has a considerable influence on the substantial reduction of the boost and acts on stocks, on the costs of inventory management, and the instability that is typical of such systems. Clear improvements in the supply chain are noticeable, both as a whole and at each of its levels.

5. Implications and perspectives

Large companies operating in the automotive industry use EDI in their dealings with manufacturers in France, Spain, India, Morocco, etc. Among the main reasons mentioned was to prevent and counteract the bullwhip effect phenomenon by fully mastering the management of information flows between all levels of the supply chain. Also, the main customer of automotive components suppliers (assembly plant) strongly encouraged and even required its partners to communicate with it via EDI because of its inherent ability to avoid the boost effect and facilitate fair practices. -times which are widely used by car manufacturers. Suppliers who cannot comply risk becoming part of the Plant's supplier portfolio. The Director of Supplier Relations actually confirms that EDI is the best system for rendering JIT information and therefore reducing the bullwhip effect. Rapid response programs and the integration of new information technologies are, among others, other measures

to counter the boost effect, they include the reduction of manufacturing cycle times (manufacturing process) ; by linking factories to customer demand (demand); more frequent and faster planning (planning and control); rationalization of acquisition and distribution (procurement) and new decision support systems (planning and control) to manage lead times reduction. The circle of uncertainty is a useful concept for improving the performance of supply chains through which every actor can make a profit. Uncertainties in the management of the control and manufacturing processes of a product can be greatly reduced through access to market data. To achieve a good degree of cooperation, partnership agreements can be a good way to achieve this. The optimum can only be achieved if strategies address uncertainty in both commodity and information pipelines.

Conclusion

The negative consequences of the bullwhip effect influence the profits made: too much stock, lost sales, poor customer service, insufficient quality and multiple disruptions to flow and organization. Since the real problem lies in the lack and the poor quality of information (both infrequent and not very credible) between production and consumption, the first step will be to make the business demand-driven (Lean Manufacturing and pull system): She needs to have a vision of the entire supply chain and know what retailers are selling. Several solutions exist for this purpose:

- Apply Lean Manufacturing (flexibility and flexibility of production);
- Reduce confidence in forecasts;
- Increase the transparency of information by trusting the data coming directly from the final Customer;
- Transmit this information throughout the chain to avoid amplifying small variations.
- Place orders with the EDI or other computer system, which reduces order variations and, moreover, reduces administrative management costs.
- Avoid batch orders.

In summary, let us note that the Bullwhip effect is caused by the poor consideration by the logistics chain of the real demand of the final customer and by adopting a management oriented towards the satisfaction of the customer's demand, it is possible to eliminate most of the detrimental impacts of the Bullwhip effect.

Finally, it is necessary to merge EDI with new methods of logistics management, new means of inventory management and innovative production solutions because in the automobile, sources of supply are distant and cultures diverge, which has the effect is that other considerations begin to arise to

ensure better efficiency in managing orders. The logistics of intercontinental JIT exchange systems across supply chains require that production be always on and EDI alone is not capable of solving these kinds of problems.

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De la Dégradation de l'habitat Social Comme Conséquence de sa Politique d'entretien par les Syndics à Abidjan : Cas des Copropriétés Sogefiha d'Abobo et Sicogi d'Adjame

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Resume

Entre 1960 et 1980, la Côte d'Ivoire met sur pied sa politique urbaine grâce à laquelle sont nées les copropriétés SICOGI (Société Ivoirienne de Construction et de Gestion Immobilière) et SOGEFIHA (Société de Gestion Financière de l'Habitat). A partir de 1986, ces 02 structures se retirent de la gestion des copropriétés, désormais confiée aux habitants eux-mêmes à travers l'installation des syndics. Mais aujourd'hui, l'on constate que ces espaces se trouvent dans un état de « dégradation » dû au manque d'entretien dont ils sont sujets. Cet article a pour objectif d'étudier la politique d'entretien des syndics à l'origine de la dégradation des espaces en copropriétés SOGEFIHA d'Abobo et SICOGI d'Adjame 220 Logements. La recherche documentaire, l'observation directe ainsi que l'entretien ont été utilisés pour recueillir les données sans omettre la mobilisation de la gouvernance urbaine comme théorie de l'étude. Les résultats font ressortir que la dégradation est une conséquence des stratégies d'entretien ainsi que du manque de connaissance des syndics.

Mots clés : Dégradation, habitat social, entretien, copropriété, Abidjan

Of the Degradation of Social Habitat as a Consequence of its Maintenance Policy by Trustees in Abidjan: Case of Sogefiha of Abobo and Sicogi of Adjame Condominiums

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Abstract

Between 1960 and 1980, Côte d'Ivoire set up its urban policy, in which the SICOGI (Ivorian construction and property management company) and SOGEFIHA (Society of financial management of habitat) condominiums were born. From 1986, these 02 structures withdrew from the management of condominiums, now entrusted to the inhabitants themselves through the installation of trustees. But today, we see that these spaces are in a state of "degradation" due to the lack of maintenance to which they are subject. The objective of this article is to study the maintenance policy of trustees at the origin of the degradation of the SOGEFIHA condominium spaces of Abobo and SICOGI 220 Housing units of Adjamé. Documentary research, direct observation as well as interview were used to collect the data without omitting the mobilization of urban governance as theory of the study. The results show that the deterioration is a consequence of maintenance as well as the lack of knowledge of the trustees.

Keywords: Degradation, social housing, maintenance, condominium, Abidjan

Introduction

La Côte d'Ivoire, à l'instar des autres pays Africains, entame son processus de développement dès son accession à l'indépendance. A cet effet, une politique urbaine est mise sur pied avec un double objectif : avoir des villes modernes et loger décentement les populations de classe moyenne, incapables de le faire au prix du marché (Kouamé, 1983).

Dans cette dynamique, deux sociétés immobilières sont créées : la Société de Gestion Financière de l'Habitat (SOGEFIHA) et la Société Ivoirienne de Construction et de Gestion Immobilière (SICOGI), respectivement en 1963 et en 1964. Ces structures sont chargées de la réalisation des programmes de logements sociaux de la Côte d'Ivoire (Parentau & Charbonneau, 1992). Inspiré de l'architecture moderne occidentale, l'habitat est construit sous forme de copropriété, constitué de

plusieurs bâtiments comprenant des espaces privés et collectifs. (Haeringer, 1985 ; Simon, 2013).

Après avoir bâti plus de 65000 logements¹, la SOGEFIHA et la SICOGI en assurent l'entretien. Il s'agit de l'entretien des espaces communs et verts (ravalement des façades, tonte du gazon) ainsi que la réalisation de certains travaux tels que le curage des caniveaux.

A partir de 1973, la SOGEFIHA et la SICOGI connaissent des difficultés dues à des dysfonctionnements internes et à la détérioration de la conjoncture internationale liée à la première augmentation du prix du pétrole (Soumahoro, 1997). Cela a pour conséquence le retrait de ces deux grandes structures de la gestion des copropriétés à partir de 1986 (Krekpa et al, 2016).

Après leur retrait, l'entretien est confié aux copropriétaires qui s'organisent en syndicats avec pour mission la gestion de leur cadre de vie. Au niveau structurel, la régulation des espaces en copropriétés s'inscrit dans un cadre normatif à travers des lois et décrets². Par ailleurs, l'on assiste à la création en 2014 de la Direction du logement et de la copropriété chargée d'encadrer les syndicats dans leur tâche et de veiller à l'application des règles de vie en copropriété³. Aussi, des opérations de ravalement des façades de certains logements ont été entreprises par le gouvernement la même année dans le district d'Abidjan en appui à la législation en vigueur. En plus des actions des syndicats, il existe au sein de ces espaces, des associations de jeunes et de femmes qui leur viennent en appui. Leur mission est de veiller aussi à l'entretien du cadre de vie à travers des opérations de nettoyage organisées périodiquement.

Malgré les actions des syndicats et des associations, l'on assiste à une dégradation de ces copropriétés. En effet, les constats montrent que les murs des façades des bâtiments sont défraîchis. L'on note également la présence d'odeurs nauséabondes dues aux débordements des fosses septiques avec l'obstruction des toilettes des logements. Les escaliers et les rampes sont

¹ La SOGEFIHA réalisa près de 29 100 unités de logements urbains en Côte d'Ivoire dont 26 269 à Abidjan et la SICOGI a pu produire près de 36 000 logements (Parentau & Charbonneau, 1992, p 421).

² Le premier décret concernant la politique de l'habitat social fut pris en 1949 par l'Office des Habitations Economiques (OHE) pour toute l'Afrique Occidentale Française. Les objectifs de l'OHE étaient de construire des logements salubres à bon marché et orientés vers l'accession à la propriété individuelle. En 1998, un autre décret fut pris, modifiant celui de 1949. Le 22 mars 2013, le gouvernement ivoirien a adopté un décret portant réglementation du statut de la copropriété qui fut modifié et complété par le décret n°2014-26 du 22 janvier 2014. Ces textes ont récemment été abrogés par la loi n°2019-576 du 26 juin 2019, instituant le code de la construction et de l'habitat, dont le livre 2 détermine le mode d'habitation en copropriété.

³ Voir décret n° 2014-515 du 15 septembre 2014, portant organisation du Ministère de la Construction, du Logement de l'Assainissement et de l'Urbanisme.

presqu'inexistants au sein des bâtiments. Enfin, les murs et les dalles des appartements sont fissurés avec des fuites d'eau.

Si la majorité des travaux dans le domaine de l'habitat en Afrique a pour la plupart été basée sur comment produire des logements afin de répondre aux besoins des populations sans cesse croissantes dans les milieux urbains (Konaté, 2011 ; Prévost, 1985 ; Soumahoro, 1997 ; Manou-Savina, 1989) ; la présente étude, met plutôt l'accent sur la dégradation du bâti déjà existant. En effet, plusieurs structures interagissent au sein de ces espaces dans le cadre de l'entretien, pourtant le phénomène de dégradation persiste. Dès lors, comment les modes de gestion des espaces en copropriété SOGEFIHA d'Abobo et SICOGI d'Adjamé sont-ils à l'origine de la dégradation ?

1. Methodologie

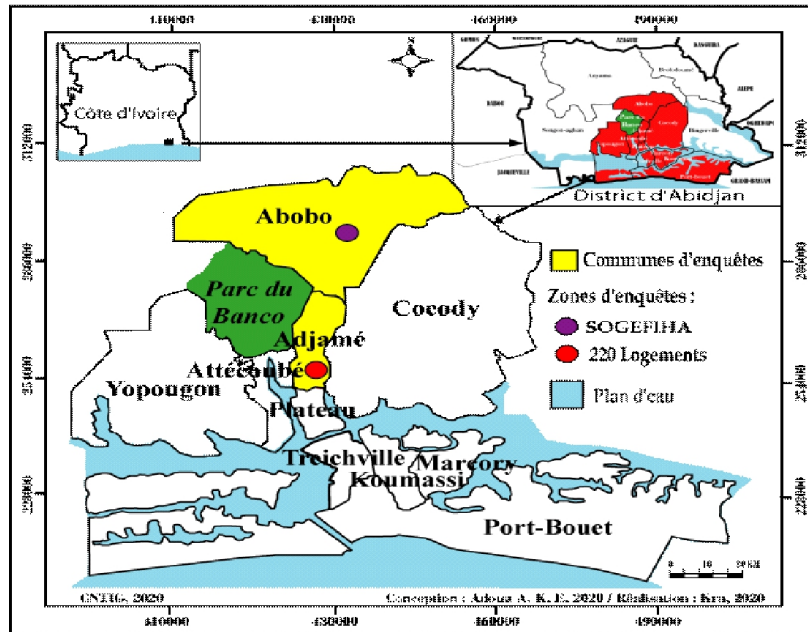
1.1. Site à l'étude

L'étude a été réalisée dans le district d'Abidjan, plus précisément dans les communes d'Abobo et d'Adjamé pour plusieurs raisons. Les copropriétés SOGEFIHA d'Abobo ont été choisies comme champ d'étude pour des raisons de maîtrise du terrain et de faisabilité.

Concernant les copropriétés SICOGI 220 logements d'Adjamé, l'histoire laisse entrevoir que le Grand bloc constitue la première acquisition de la SICOGI. Elle représente donc la plus ancienne des copropriétés de cette société d'où l'intérêt qu'elle suscite pour nous. Aussi, la commune d'Adjamé abrite-elle le siège de la SICOGI situé non loin des tours 220 logements. Ce choix s'est donc opéré en rapport avec la dimension symbolique liée à l'histoire de cette structure immobilière.

Ces différentes copropriétés présentent dans l'ensemble les mêmes caractéristiques que les autres copropriétés issues de la politique urbaine d'après les indépendances, en ce qui concerne les difficultés liées à leur entretien. Par conséquent, en plus d'être le symbole de l'habitat social en Côte d'Ivoire, elles constituent des échantillons représentatifs du phénomène à l'étude, à savoir la dégradation. La figure ci-dessous localise nos différentes zones d'étude.

Figure 1 : Localisation des zones d'étude



Conception : Adoua Elisabeth, septembre 2020

1.2. Population à l'étude

Dans cette étude, les habitants propriétaires, les habitants locataires, les présidents de syndicats, les responsables d'associations et les acteurs institutionnels (agents de mairie, du ministère de la construction, du trésor et de la comptabilité publique, de la SICOGLI, de la direction de la copropriété et de la SOGEPIE) ont été interrogés. A cet effet, on a fait ressortir les modes de gestions des copropriétés ainsi que les rapports entretenus entre les acteurs.

1.3. Echantillonnage

Cette étude s'inscrit dans une approche qualitative. De façon pratique, l'étude a été réalisée du 05 au 28 juillet 2019 auprès d'un échantillon de 52 personnes. La technique d'échantillonnage non probabiliste par choix raisonné a été mobilisée (N'da, 2015). De ce fait, le choix des habitants interrogés a été fait en fonction de leur ancienneté (durée), du rôle et du statut qu'elles occupent ainsi que des actions qu'elles ont menées à des périodes bien définies au sein des dites copropriétés. Les choix se sont donc portés sur les propriétaires, les héritiers, les locataires, les responsables de syndicats et d'associations. Ainsi, 4 présidents de syndicats, 6 responsables d'associations, 06 habitants-propriétaires et 24 locataires ont été interviewés. Cette technique repose sur le jugement du chercheur, qui fait le tri des cas à inclure dans l'échantillon, répondant de façon satisfaisante à sa recherche. Avec les acteurs

institutionnels, il s'agissait de savoir le contexte historique de la construction des copropriétés ainsi que le mode de gestion de ces espaces avant de le désengagement de la SICOGI et la SOGEFIHA. A cet effet, 10 individus ont été interviewés.

1.4. Posture théorique

Ce travail s'inscrit dans le cadre de la gouvernance urbaine qui est un processus d'acteurs, de groupes sociaux et d'institutions en vue d'atteindre des objectifs définis et discutés collectivement (Le Gales 1995). Le choix de cette théorie s'est fait au regard de la multiplicité de groupes d'acteurs interagissant au sein des copropriétés étudiées dans le but de parvenir à leur gestion efficiente. Il s'agit des habitants de ces espaces (propriétaires, locataires), des bailleurs, des associations, des syndic et de l'acteur institutionnel. Il est question de montrer comment les modes de gestions et les rapports entre ces derniers constituent un mobile de la dégradation.

1.5 Méthode d'analyse

L'analyse de contenu thématique du discours (Bardin, 2007) des enquêtés a été privilégié dans ce travail. Les discours des enquêtés ont été analysés et interprétés dans leur contenu afin de comprendre le phénomène à l'étude. C'est-à-dire comment les modes de gestions des syndic induisent certaines pratiques qui ont progressivement conduit à la dégradation du cadre de vie. Aussi, la méthode structuro-fonctionnelle de Parsons (1951) a-t-elle été utilisée en vue de l'explication du phénomène à l'étude. Cette méthode a permis d'analyser le fonctionnement des différentes structures ainsi que des rapports qui en découlent dans la production de la dégradation des copropriétés SICOGI d'Adjamé et SOGEFIHA d'Abobo soumis à cette étude.

1.6 Techniques et instruments de collecte de données

L'étude se voulant qualitative, les techniques et instruments appropriés à ce cas de figure ont été utilisés. Ainsi, les techniques utilisées sont la recherche documentaire, l'observation directe et l'entretien. La recherche documentaire menée a contribué à une meilleure compréhension du sujet tout en permettant sa construction sociologique. L'observation a porté sur la structure spatiale des différentes copropriétés, l'état des espaces communs ainsi que les pratiques des habitants concernant l'entretien. Grâce à l'entretien (directif et semi-directif), les enquêtés ont pu produire des discours liés à leur vécu et à leur perception du phénomène à l'étude.

Les instruments mobilisés pour collecter les données de l'étude sont la grille de lecture, la grille d'observation et le guide d'entretien. La grille de lecture a permis de dresser la liste des idées retenues au cours des différentes lectures. Les comportements des habitants concernant l'entretien de leur cadre

de vie ainsi que leurs pratiques sur les espaces communs ont été observés à partir de la grille d'observation. Le guide d'entretien a contribué à la compréhension et à l'analyse du phénomène grâce aux thématiques abordés.

2. Resultats

Les résultats de l'étude montrent que la dégradation est liée aux stratégies d'entretien mis sur pied par les syndicats et les associations interagissant au sein des copropriétés SOGEFIHA d'Abobo et SICOGI 220 logements d'Adjamé ainsi qu'à leur manque de connaissance.

2.1 Les stratégies d'entretien des copropriétés

Les stratégies d'entretien mises en place par les syndicats et les associations sont la mobilisation des fonds, de réunions relatives à la gestion du cadre de vie et d'activités d'entretien.

2.1.1 La mobilisation des fonds

Pour la mobilisation des fonds nécessaires à la gestion du cadre de vie, deux approches sont utilisées par les syndicats des espaces étudiés.

La première réside en l'instauration de cotisation comme c'est le cas aux Quatre Etages d'Abobo. Au sein de cette copropriété, c'est l'association des femmes qui est chargée de recueillir l'argent auprès des habitants et la cotisation mensuelle est de 500 francs. Cependant, au fil du temps, les habitants ont arrêté de s'acquitter régulièrement de leurs cotisations et la somme recueillie à partir de la minorité qui cotise s'avère insuffisante pour couvrir les dépenses liées à l'entretien.

La seconde consiste à la mise en location des espaces communs. En effet, pour faire face aux charges d'entretien, les syndicats des copropriétés d'Adjamé 220 Logements et d'Abobo N'Tanouan-Est mettent en location les espaces communs. Les espaces loués à Adjamé sont les espaces verts, la cour de la cité, trois (03) studios, vingt-deux (22) sous-sols, deux (02) magasins et l'espace non bâti utilisé par les maquis. C'est ce que nous confie le responsable du syndicat en ces termes : « *Le syndicat vit des ressources générées par la location des sous-sols, des magasins, des studios et de l'espace utilisé pour les maquis* ». (Homme, propriétaire, responsable du syndicat à Adjamé Grand Bloc).

Au niveau de la copropriété N'Tanouan-Est d'Abobo, le syndicat loue l'ancien espace vert transformé en terrain de sport comme lieu d'entraînements de trois clubs de football et pour la tenue de manifestations telles que : les veillées funèbres, les séances de prières et d'évangélisation, les concerts, etc... C'est ce qui ressort de ce discours : « *Ce que nous faisons qui nous rapporte un peu de moyens c'est la location de l'espace qui sert de terrain. Il y'a des gens qui viennent faire des séances d'évangélisation, des*

veillées, C'est le fruit de ces locations qui nous permettent d'entretenir les caniveaux, c'est toujours par voie d'huissier que nous signifions à tous les copropriétaires qui sont en infraction de mettre fin aux constructions anarchiques. C'est cet argent que nous utilisons comme moyens pour le faire et pour mener les démarches administratives » (Homme, propriétaire, membre de syndic à Abobo SOGEFIHA N'Tanouan-Est). Toutefois, la somme recueillie n'aide qu'à couvrir une partie des charges d'entretien. La raison évoquée est que les locataires de ces espaces ne payent pas régulièrement leur dû. Ainsi, ces approches s'avèrent inefficaces car les fonds recueillis sont insuffisants et l'entretien demeure irrégulière et précaire. Cela a pour impact la dégradation progressive de ces espaces.

2.1.2 Les réunions relatives à la gestion du cadre de vie

Les réunions constituent des cadres d'échanges en vue de l'amélioration du cadre de vie. De ce fait, les réunions ordinaires des copropriétaires se tiennent une fois par trimestre et celles des associations sont mensuelles. Mais, les responsables sont confrontés à la faible participation des membres aux rencontres, ayant conduit dans certains cas à leur suspension.

A Abobo Quatre étages, sur 140 appartements, lorsque l'association en charge de l'entretien convoque une réunion, seules 20 personnes répondent. D'après la trésorière de l'association, « *Quand on convoque une réunion, c'est une vingtaine qui vient et ce sont elles qui cotisent. Depuis qu'on a créé l'association il y'a des gens qui n'ont jamais cotisé* » (Femme, propriétaire, présidente de l'AFUQUER⁴). Comme conséquence de la non-participation des habitants aux réunions et aux cotisations, la somme recueillie par mois s'avère insuffisante pour l'entretien. Ce désintérêt a créé un découragement chez les responsables de l'association au point où elles ont décidé de « *rendre le tablier* », c'est-à-dire de dissoudre l'association.

La même réalité est vécue à Adjamé, comme en témoigne ces dires : « *Les réunions se faisaient dans les débuts de l'installation de notre bureau, mais ce sont les mêmes qui venaient donc on a arrêté. Il n'y a plus de réunion, vu que nous sommes à peine une dizaine qui y prenons part* » (Homme, propriétaire, responsable de syndic à Adjamé).

D'après ce verbatim, il n'existe plus de réunion au sein de cette copropriété à cause de la faible participation des habitants. Cette situation est problématique car c'est au cours de ces rencontres que les thèmes portant sur l'entretien sont discutés. Comme conséquence, l'entretien demeure l'affaire de quelques résidents uniquement et c'est l'état du cadre de vie qui se trouve dégradé. Ces différents discours laissent transparaître que le nombre de participants aux rencontres a décliné au fil du temps et sont révélateurs du

⁴ AFUQUER : Association des Femmes Unis des Quatre Etages et Riveraines

rapport des habitants à l'entretien de l'espace résidentiel. Leur désintérêt pour les questions liées à la gestion du cadre de vie a pour conséquence son délabrement.

2.1.3 Les activités d'entretien

Les activités d'entretien concernent le balayage de la cour, le ramassage des papiers et des plastiques ainsi que le curage des caniveaux. Ces activités sont organisées par les femmes regroupées en associations. A Abobo, nous avons l'Association des Femmes Unies des Quatre Etages et Riveraines (AFUQUER) et à Adjamé, l'Amicale des Femmes du Grand Bloc (AFGB). Dans l'ensemble, l'attitude des habitants constitue un frein à l'entretien et par la même occasion explique la dégradation et l'insalubrité de ces copropriétés. C'est ce que nous raconte cette habitante : *« A la limite, les gens s'en foutent. Ils vont faire des travaux et ils jettent les débris dans la cour. Les gens continuent de balancer les poubelles par derrière, même les selles dans les sachets »* (Femme, membre de l'AFUQUER). Une autre enquêtée nous instruit en ces termes : *« Il y a un véritable problème de salubrité. Les jardins sont l'urinoir public. Nous tous, nous jetons tout, partout, l'eau ne monte plus chez mon voisin au dernier. Quand ils défèquent, ils jettent en bas ici »* (Femme, responsable de l'AFGB). Ces dires montrent qu'en plus de ne pas participer à l'entretien, les habitants ne respectent pas les efforts fournis par ceux qui essaient de prendre soin du cadre de vie. Dès lors, les facteurs susmentionnés expliquent la dégradation des copropriétés étudiés comme l'illustre la photo 1 suivante.

Photo 1 : Débordement d'un regard à Abobo SOGEFIHA



Source : Enquête de l'étude, juillet 2019

2.2 Le manque de connaissance des syndics

Le manque de connaissance dans le domaine de la gestion des copropriétés constitue un obstacle chez les syndics dans la mesure où cela crée une ambiguïté dans l'exercice de leur rôle. C'est ce que décrit cet enquêté en

ces termes : « ... C'est lors des élections ou lorsqu'une personne décède qu'on voit le syndic pour nous dire de payer 500frcs ou 1000frcs pour soutenir celui qui est décédé sinon je ne vois pas de truc concret même que le syndic a fait. Je ne vois pas le rôle qu'il joue » (Femme, 40 ans, locatrice à Abobo Quatre Etages).

D'après ce discours : « Le syndic fait une gestion interne à telle enseigne que lorsqu'on les poursuit pour faire des réunions, ils refusent. Depuis qu'ils sont élus, on n'a jamais eu de rencontres. Aucun bilan n'est fait ». (Femme, locatrice, résidente au grand bloc d'Adjamé). Au travers de ces dires, c'est la gestion du syndic qui est remise en cause par les résidents.

Pour l'acteur institutionnel : « L'entretien actuellement est laissé pour compte. Les gens font de ça un business. C'est-à-dire un groupe d'individus qui s'entend, qui se disent syndic, se sucent sur le dos des gens et ne font pas le travail de manière professionnel » (Homme, agent de la SICOI).

Ces discours laissent transparaître l'existence de rapport conflictuel entre les catégories sociales interagissant au sein de l'espace. Aussi, ces dires révèlent-ils l'ambiguïté des syndics dans l'exercice de leur rôle dans la mesure où l'intérêt porté à la gestion des copropriétés par les membres cache souvent des enjeux d'ordre économique, reléguant donc l'entretien pour lequel ils ont été institués au second plan. Cette attitude de la part des membres des syndics explique également le désintérêt dont font preuve les habitants lorsqu'il est question de prendre part aux réunions et aux cotisations. Dès lors, le non-professionnalisme des syndics lié à leur manque de connaissance dans le domaine de la gestion a pour conséquence la dégradation des espaces étudiés. La photo 2 ci-après montre l'état du parking des copropriétés d'Adjamé 220 Logements.

Photo 2 : Vue du parking des 220 Logements d'Adjamé



Source : Enquête de l'étude, juillet 2019.

3. Discussion des Resultats

Les résultats de cet article se basent sur la théorie de la gouvernance urbaine qui selon Le Gales (1995) est un processus d'acteurs, de groupes

sociaux et d'institutions en vue d'atteindre des objectifs définis et discutés collectivement. Cette théorie sous-tend un rapport de collaboration entre les différentes parties mobilisées dans la gestion de la chose collective. En effet, la gestion des copropriétés fait partie de la politique de la ville encourageant une démocratie participative, s'appuyant sur les potentialités des habitants (Avenel, 2007). Cette gestion s'inscrivant dans un cadre normatif, établi de façon consensuelle. Cependant dans cette étude, les acteurs chargés de la gestion de l'espace entretiennent des rapports conflictuels. Ces rapports entre acteurs combinés aux stratégies d'entretien mises en place par les syndicats ont pour conséquence la dégradation de la chose collective qu'est l'espace résidentiel.

3.1 Les stratégies d'entretien

Cet article démontre que les stratégies d'entretien mises en place par les syndicats et associations sous-tendent certaines pratiques étant à l'origine de la dégradation des copropriétés SOGEFIHA d'Abobo et SICOI d'Adjamé 220 Logements.

En accord avec ce résultat, Krepka et al. (2016) mettent en cause les nouvelles formes de gestions comme facteurs de dégradation des copropriétés de la Petite et Grande Ourse de Cocody depuis le retrait de SICOI. Les auteurs révèlent le décalage entre la gestion assurée par la SICOI en son temps et celle faite par les copropriétaires depuis sa mise en liquidation. Ils dénoncent l'usage du bâtiment comme emplacement publicitaire et support des dispositifs privés, la mise en location privative du local destiné au recouvrement des loyers par la SICOI, la transformation du séchoir en magasins commerciaux et pièce locative, l'occupation du parvis et des couloirs des bâtiments à des fins d'activités économiques, la transformation de la buanderie en un lieu de résidence, la transformation du bureau des copropriétaires en magasin et les locations et sous-locations des appartements.

Toutefois, Kouamé (1983) révèle le rapport des habitants à l'espace en s'appuyant sur leurs pratiques. Il s'agit des modifications effectuées à l'intérieur du logement à cause de la rotation importante d'individus qui y vivent et de la persistance d'anciennes pratiques au niveau des parties communes issues de leur trajectoire résidentielle.

Par ailleurs, Bassa (2015) trouve que le véritable problème est que la gestion des copropriétés est confiée aux résidents qui ne s'occupent que de l'intérieur de leurs logements tandis que l'extérieur des bâtiments laisse une image désolante. Pour eux, seul l'entretien de l'espace privatif leur incombe car leur propriété ne se limite qu'à l'intérieur du logement. Les espaces communs étant la propriété collective, nul ne se sent directement responsable de leur entretien.

3.3 Le manque de connaissance des syndics

Comme démontré dans cet article, la dégradation est la résultante du manque de connaissance des syndics. Hsieh (2009) est en accord avec cette thèse lorsqu'il dénonce le désengagement de l'Etat de l'entretien comme facteur de délabrement des copropriétés. Selon l'auteur, le fait que les copropriétaires soient livrés à eux-mêmes dans la gestion de leur cadre de vie alors qu'ils n'ont pas de connaissance dans ce domaine constitue la cause du phénomène. Chen (2011), abondant dans le même sens, soutient que l'implication de l'Etat est un élément important au bon fonctionnement des copropriétés. Sur la base du rapport de collaboration entre les acteurs dans le cadre de la gouvernance, une collaboration interstructurelle s'impose pour la bonne gestion des copropriétés. Cette collaboration passe par la formation des copropriétaires et/ou des résidents sur l'organisation des copropriétés (Major, 1992 ; Kennedy, 1995 ; Lai et Chan 2004 cités par Simon 2015).

Conclusion

Au terme de cet article, il ressort que la dégradation est un produit social résultant des modes de gestion des copropriétés SOGEFIHA d'Abobo et SICOGI d'Adjamé et du manque de connaissance des syndics chargés de cette gestion. L'approche qualitative adoptée a permis de mettre en exergue les stratégies mises en place par les syndics et les associations dans la gestion de ces espaces. A l'analyse, le rapport des résidents à l'espace montre l'existence de conflits entre ces derniers et les syndics dont la résultante est la dégradation. Les moyens de pallier la dégradation ne sont pas abordés dans ce travail. La prise en compte de cet aspect pourrait constituer une perspective de recherche pour les études ultérieures.

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Assessing the Achievement Testing Practices of Teachers in Junior High Schools in the Sissala East Municipality of Ghana

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Abstract

The study sought to find out whether Junior High School teachers in the Sissala East Municipality of Ghana follow the basic prescribed principles in the construction, administration and scoring of classroom achievement tests. A descriptive survey design was adopted for the study. The study employed multistage sampling techniques (purposive, stratified, and simple random sampling procedures) to select a sample of 248 teachers from the Sissala East Municipality. A questionnaire was used for the data collection and its reliability was 0.8. Data were analysed using frequencies, means, and standard deviation. The results showed that generally, Junior High Schools teachers in the Sissala East Municipality adhere to most principles of test construction and test administration but had little knowledge of the principles in the scoring test. It was recommended that more workshops and in-service training should be organized for teachers in Junior High Schools concerning their testing practices (i.e., construction, administration and scoring of tests).

Keywords : Achievement test, test construction, test administration, test scoring

Introduction

Assessment is as an umbrella term that includes the use of various strategies and methods to determine the extent to which students are achieving the predetermined learning objectives and outcomes of a lesson (Mussawy, 2009). There are different types of assessment that can be used to test students' knowledge and see their current levels in specific subjects. Two major types of assessment widely used are traditional types of assessment and performance-based assessment (Birenaum, & Feldman, 1998). Birenaum and Feldman, (1998) argued that traditional types of assessment tools are generally knowledge-based and include conventional types of tests such as multiple-choice questions, short answer essays or constructed responses and standardized tests whereas in performance-based assessments, students are required to perform a task rather than select from options provided; and students are assessed according to their performance outcomes and the extent to which those outcomes are about the rubrics or feedback tools. An achievement assessment test requires students to exhibit the status of their learning through a demonstration of mastery (Poikela, 2004).

Nobody can study in an entire educational system without being exposed to a wide range of educational and psychological assessment procedures. This is because constantly in an educational setting, decisions have to be made about students, curricula and programmes, and educational policies. According to Nitko (1996), decisions about students include managing classroom instruction, placing students into different types of programmes, assigning them to appropriate categories, guiding and counselling them, selecting them for educational opportunities, and credentialing and certifying their competence. Decisions about curricula and programmes include decisions about their effectiveness (summative assessment) and about ways to improve them (formative assessment). In Ghana, decisions about educational policies are made at the national level. It is worth knowing, however, that educational assessments, of which in the Ghanaian educational system, tests predominate, provide some of the needed information for these types of decisions (Ministry of Education, 2010).

According to the standard for Educational and Psychological testing, National Council on Measurement in Education (NCME, 2014) "a test is a device or procedure in which a sample of an examinees behaviour in a specified domain is obtained and subsequently evaluated and scored using a standardized process" (p. 2). However, it must be noted that the psychological attributes of an individual cannot be measured directly like the measurement of height or weight. The existence of such a psychological construct can never be confirmed. The degree to which any attribute characterises an individual can only be inferred from observation of his or her behaviour. It becomes more prudent if one can quantitatively relate the subjective judgments of individuals

about the estimated amount of constructor trait that exists in a person by establishing standards for such measurement.

A test is an essential tool that helps to quantify such constructs which helps one to make a value judgment about the degree to which such constructs might probably exist in an individual. A large number of assessment techniques are being used to collect information about students. These include formal and informal observation of students, paper-and-pencil tests, a student's performance on homework, laboratory work, and projects during oral questioning and analysis of students' records (NCME, 2014).

Teachers in the educational setting would want to estimate the degree to which their students are characterized by the knowledge they have imparted to them within a given period. All the domain of such construct might not be known by a single test. Nevertheless, a well-constructed test could sample to a large extent a reasonable amount of the construct on which value judgment could be made from. Educators and teachers must also be aware that a test itself is subject to errors that adversely could affect its use in deciding for students. Tom and Gary (2003) further asserted that test misuse and abuse can occur when users of test results are unaware of the factors that can influence the usefulness of the test scores.

Among the major factors are the technical adequacy of a test and its validity and reliability. The technical inadequacies might emerge from factors such as test appropriateness for testing, the content validity evidence, the appropriateness of the reading level, language proficiency and cultural characteristics of students and teachers, and pupils' factors that may have affected administration procedure and scoring of the test, among others. It must also be noted that even when a test is technically adequate, misuse and abuse can occur because technical adequacy does not ensure that test scores are accurate or meaningful. When students' achievement levels are not properly measured and interpreted, the teachers and school administrators are not able to provide the right educational opportunities and support each student needs.

Testing provides feedback on which educational decisions are made. These decisions may be the ones that require information about the success of learning programmes or about students who have reached particular levels of skill and knowledge (Izard, 2005). Accurate and valid information about student achievement is widely understood to be essential for effective instruction, as it enables teachers to give appropriate feedback and adapt their instruction to match student needs.

The importance of tests cannot be underestimated; first tests are used for the assignment of grades to students. The grades or symbols (e.g., A, B, C) that the classroom teacher reports, represent his /her formal evaluation or judgment of the quality or worth of his/her students 'achievement of the

important learning objectives (Amedahe & Gyimah, 2003; AERA/NCME, 2014). Again, it is used for selection decisions, sometimes, an institution decides whether some persons are acceptable for specific programmes while others are not. Those not acceptable are rejected and are no longer the concern of the institution (Cronbach, 1960; Nitko, 2001; Amedahe & Gyimah, 2003). An educational institution often uses test results to provide part of the information on which selection decisions are based. Tests are indispensable tools in every educational system. Tests and teaching are interwoven. Quagrains (1992) has stated that tests provide needed information for evaluation. Without evaluation, there cannot be feedback and knowledge of results. Without knowledge of results, there cannot be any systematic improvement in learning.

The basic principles for the construction of teacher-made tests have been developed over the years by several educational measurement experts (Amedahe, 2000). While some of the test construction principles are general and apply to any type of test, others are specific and apply solely to the particular type of test under construction. From the available literature, the test construction principles that the researcher judged as most comprehensive and practicable in the classroom testing situation were those postulated by Tamakloe and Amedahe (1996) and Etsey (2004). These are in eight steps. The steps are: define the purpose of the test, determine the item format to use, determine what is to be tested, write the individual items, review the items, prepare the scoring key, write directions, and evaluate the test. It is believed that a good test must follow these steps to improve its validity and reliability.

According to Mehrens and Lehmann, noise and distraction in the testing environment should be kept at the barest minimum if not eliminated. Interruptions within and outside the testing room tended to affect student's performance. Etsey (2004) also affirmed that it is helpful to hang a – "Do Not Disturb Testing in Progress" sign at the door of the testing room to warn people to keep off. The distractions from outside can divert the attention of test-takers which could contribute to the low performance of students. Amedahe and Asamoah-Gyimah (2003) and Etsey (2004) found that tests must not be given immediately before or just after a long vacation, holidays or other important events where students are involved in either physically or psychologically activities. Amedahe and Asamoah-Gyimah (2003), opined that tests must also not be given when students would normally be doing something pleasant such as having lunch, athletics, or other sporting activities as this will hamper students' concentration.

On test scoring, Amedahe and Gyimah (2003); and Etsey (2004), who agreeably asserted that responses of the item should be scored item by item rather than script by script. This principle is to minimise the carryover effect on the scores and thereby ensuring consistency. A study by Amedahe (1989),

recounted that teachers in the schools used mainly the analytic method in scoring their essay-type tests. He further asserted that teachers in the schools scored their essay-type tests either item by item or script by script. On the part of Quagrain (1992), he found that majority of teachers in the schools used the analytic method in scoring their essay-type tests. Amedahe and Gyimah (2003) and Etsey (2004), indicated that the mechanics of expressions such as correct grammar usage, the flow of expression, quality of handwriting, orderly presentation of material, and spelling should be judged separately from subject matter correctness. This was because when teachers are influenced by factors other than the subject matter, the marks awarded would represent construct irrelevant or construct mis-representativeness. This simply meant that higher scores on tests might not reflect the ability of students on the subject matter but rather discriminate students in proficiencies they have over other students.

Etsey (2004) also indicated that scripts must be scored anonymously. He suggested scripts should be identified by code numbers or any other means instead of the names of students. This principle is to reduce the halo effect. Halo-effect happens when a scorer's general impression of a person influences how the paper is scored.

The theories that underpinned this study were the Constructivist Learning Theory and Classical True Score Theory. Constructivist learning theory says that all knowledge is constructed from a base of prior knowledge (Davis, 2000). According to Vygotsky (as cited in Davis 2000), children are not a blank slate and knowledge cannot be imparted without the child making sense of it according to their current conceptions; therefore, children learn best when they are allowed to construct a personal understanding based on experiencing things and reflecting on those experiences. Classical true score theory is a simple, model that describes how errors of measurement can influence the observed score. Classical true score theory states that an observed score (X) is equal to the sum of a true score, or true underlying ability (T), and the measurement error (E) associated with estimating observed scores, or $X = T + E$. These two theories are relevant because first, students must make meaning of the test items set by teachers and teachers must also be aware of the errors associated with test score so that teachers can make an informed judgement about the test scores.

In the study of Amedahe (2000), it was evident that most Ghanaian teachers had limited skills for constructing achievement tests, the objective and essay type tests, which are the most frequently used instruments in schools in Ghana. According to Amedahe teachers' limited skills in test construction were the result of lack of training in assessment techniques, large class size and lack of a particular school's policy in assessment standards with implications on validity and reliability of the assessment results" (p. 112-113). Given the extent of prevalence of classroom achievement tests in Ghanaian

schools and the variety of uses to which the results from these tests are put, there is the need for research into the achievement testing practices of teachers. Again, careful observation of the Junior High Schools teachers in the Sissala East Municipality easily reveals that the achievement test practices of the teachers were with a lot of flaws which may include poor construction of test items, poor administration, poor scoring that one begins to wonder whether training contributes to competence at all. It is based on the above problem this study sought to examine the achievement testing practices of teachers in Junior High School in the Sissala East Municipality of Ghana.

Purpose of the study

The purpose of this study was to assess the achievement test practices of teachers in Junior High in the Sissala East Municipality of Ghana.

To achieve the purpose of this study, the following research questions were posed to guide the study:

- i. How do Junior High Schools teachers in the Sissala East Municipality adhere to the principles of test construction, administration and scoring?
- ii. What kinds of achievement test strategies do Junior High Schools teachers in the Sissala East Municipality use to assess their students' learning outcomes?

Methodology

The research design chosen for the study was the descriptive survey. Amedahe, (2000) stated that descriptive research involves the collection of data to test hypotheses or answer research questions concerning the current status of the subjects of the study. This design was chosen because the study involved the collection of data to test hypotheses or answer research questions concerning the current status of the subjects on achievement test practices of teachers in Junior High Schools in the Sissala East Municipality of Ghana. The population of 700 for this study comprised all Junior High School teachers in the Sissala East Municipality, Sissala. There are five regions in the Northern part of Ghana. Namely, Savana, Upper East, Northern, North East, and Upper West. Upper West is situated in the northwest segment of Ghana. The Capital of the Upper West Region is Wa. Covering an area of 18,476 square kilometres and home to a populace of 702,110 residents, the region has the most modest number of inhabitants among all regions of Ghana. Additionally, it has 11 districts under it. The primary occupation of residence in Sissala East District is farming.

An estimated sample size of 248 teachers was selected for the study using Krejcie and Morgan sampling table. Fraenkel and Wallen (2009) have also indicated that for descriptive studies, a larger sample size of 248 for this

study produces desirable results to generalise over the population. The study employed multistage sampling techniques (purposive, stratified, and simple random sampling procedure). Purposive sampling was used to select only Junior High School teachers teaching the four core subjects (English Language, Mathematics, Integrated Science, and Social Studies) in the nine educational circuits. Stratified sampling was used to classify teachers according to their academic and professional qualifications this was to enable the researchers to compare the teachers in terms of their knowledge and practice of achievement test. Lastly, the researchers used simple random (lottery method) to select the teachers in the nine (9) educational circuits in the Sissala East Municipality. The simple random technique was used to give teachers an equal chance of being selected and it helped to avoid biases in selecting the respondents. This is to help improve the representativeness of the sample. The researchers used three weeks for the data collection.

A questionnaire was the main source of data collection for the study. The instrument was developed by the researchers based on the research questions and literature. The questionnaire was developed using four-point Likert-type scale ranging from “Strongly Disagree, Disagree, Strongly Agree and Agree”. The research instrument consisted of 60 items and was organised into five sections (A, B, C, D, and E). Section ‘A’ comprised the background information of the students. Section, ‘B’, constituted items on teachers’ knowledge of test construction “Section C” constituted items on teachers’ knowledge of test administration. “Section D” was made up of item on teachers’ knowledge in test scoring.

Finally, “Section E” was based on the kinds of achievement test strategies Junior High Schools teachers in the Sissala East Municipality use to assess their students’ learning outcomes.

The questionnaire was a four-point Likert type scale that requires participants to indicate their level of agreement or disagreement to the items using strongly agree, agree, disagree or strongly disagree. The responses were scored as follows: Strongly Agree = 4; Agree = 3; Disagree = 2; Strongly Disagree = 1. The reliability of the questionnaire was 0.8. Data were analysed using frequencies, means, and standard deviation.

The respondents were given draft copies of the questionnaire. The respondents were told to discuss verbally and frankly with the researchers any ambiguity, incoherence, or incomprehension that they would experience about any aspect of the draft questionnaire. The necessary corrections were done after the trial testing. The questionnaires were administered by the researchers to two-hundred and forty-three teachers in the Sissala East Municipality. The researchers had also established the necessary contacts with the headteachers of the selected schools to seek permission to administer the questionnaire. A brief self-introduction was made by the researchers to explain the purpose of

the study to the respondents before the questionnaires were distributed to them. The researchers stayed with them and had interactions with them. The researchers appealed to all the respondents to take their time to read the questionnaire and respond to it appropriately. The response rate was 90%.

Results and Discussions

Table 1: *Results on the Demographics of the Respondents*

Demographics Variables	Sub-scales	Freq. (No)	Percent. (%)
Gender	Male	146	58.8
	Female	102	41.2
Number of years in teaching service	Under 5 years	92	37.1
	5 – 10 years	109	43.9
	Above 10 years	47	18.9
Academic/Professional Qualification	Teachers' Certificate A	02	0.81
	Diploma with Education	06	2.41
	Bachelors with Education	185	74.5
	Masters with Education	48	19.4
	Masters without Education	07	2.82
	Others	00	0.00

Source: Field Data, 2019

n=248

From Table 1, 146 representing 58.8% of teachers were males while 102 of them representing 41.2% were females. For the number of years in teaching service, the results showed that most of the teachers that is (109) representing 43.9% had taught for 5-10 years. Few of them representing 18.9% had taught above 10 years. On the last aspect of the demographic characteristics of the teachers, the results indicated that most of the teachers (n=185, 74.5%) hold Bachelors with Education. Those with Masters with Education followed (n=48, 19.4%).

Research Question One

This research question sought to find out the kind of principles that Junior High School teachers use in the construction of their achievement tests. In addressing these research questions (Q1abc-Q4), means and standard deviations were used for the analysis. The teachers were given four-point Likert scale item on teachers' use in the construction of their achievement tests to respond to. The scoring of items was based on the four-point Likert scale of measurement ranging from “Strongly Agree” (scored 4) to “Strongly Disagree” (scored 1). In the analysis, means provides the summary of the responses from teachers and the standard deviation indicates whether teachers' responses were clustered to the mean score or dispersed. Standard deviation ranges from 0 to 1.97. Where the standard deviation was relatively small, the

respondents' responses were believed to be homogeneous (similar responses). On the other hand, where the standard deviation was relatively large, the students' responses are believed to be heterogeneous (dissimilar responses). A criterion value (CV) of 2.50 was established for the scale. To obtain the criterion value (CV=2.50), the scores were added together and divided by the number of the scale ($4+3+2+1= 10/4=2.50$). To understand and interpret the mean scores, any items/statements that scored a mean of 2.50 and above indicated respondents' positive perception of the variables under study while a mean of 2.49 and below indicated a negative perception towards variables under study. The findings are presented as below:

Research Question 1a: How do Junior High School teachers in Sissala East Municipality adhere to test construction principles?

In the quest of achieving the purpose of the study, we assessed how Junior High Schools teachers in the Sissala East Municipality adhere to test construction principles? In achieving this, the responses from the teachers were computed using Means and Standard Deviations. The results are presented in Table 2.

Table 2: Results on how Junior High Schools Teachers in the Sissala East Municipality Adhere to Test Construction Principles

When constructing a test, I.....	Mean	SD
Evaluate items given to the students	3.87	1.13
Set questions from past questions	3.57	1.02
Consider the time individual will spend on a question	3.53	1.09
Provide clear and simple instructions on how the test is to be answered	3.45	1.35
Consider students' language proficiency	3.34	1.82
Follow the principles of test construction for each format	3.25	1.92
Write items at least two weeks before the time	2.98	1.17
Consider the meaning of wording against a different ethnic background	2.92	1.26
Prepare marking scheme after students have answered the question	2.13	1.52
Use a test specification table	2.22	1.46
Consider a variation of students concerning physical disability	2.23	1.43
Match learning outcomes to the items	2.45	1.97
Construct test when it is time to assess	2.35	1.14
Write more items than needed	2.32	1.96
Specify the construct to be measured	2.23	1.19
Ask any other colleagues to help me construct items	2.15	1.14
Use questions directly from textbooks	2.12	1.76
State the purpose of the test	2.11	1.28

Try solving the questions myself to determine the time required	2.02	1.13
Mean of Means/SD	2.46	1.44
Source: Field Data, 2019	Cut-off Mean value=2.50	

Table 2 presents results on how Junior High Schools teachers in the Sissala East Municipality adhered to the principles of construction of test items. The results showed that Junior High Schools teachers in the Sissala East Municipality did not adhere to most principles of test construction (MM=2.46, SD=1.44). Some of the test construction principles Junior High School teachers in the Sissala East Municipality adhere to include the following:

- a. The teachers confirmed that they evaluate test items given to their students (M=3.87, SD=1.13, n=248)
- b. They further indicated that they consider the time individual will spend on a question (M=3.53, SD=1.09, n=248)
- c. They agreed that they provide clear and simple instructions on the test paper as to how the test should be answered (M=3.45, SD=1.35, n=248)
- d. Another construction principle Junior High Schools teachers in the Sissala East Municipality adhered to was that they consider their students' language proficiency (M=3.34, SD=1.82).
- e. The fifth construction principle Junior High Schools teachers in the Sissala East Municipality adhered to, was that they followed the principles of test constructions for each format (M=3.25, SD=1.92, n=248).
- f. Junior High School teachers in the Sissala East Municipality confirmed that they write test items at least two weeks before time (M=2.98, SD=1.17, n=248).
- g. Junior High School teachers in the Sissala East Municipality also considered the meaning of wording against the different ethnic backgrounds when constructing test items (M=2.92, SD=1.26, n=248).
- h. It was confirmed that few Junior High Schools teachers in the Sissala East Municipality averagely prepared to mark scheme after students have answered questions (M=2.13, SD=1.52, n=248)

Some of the test constructions principles Junior High Schools teachers in the Sissala East Municipality did not adhere to are the following;

- a. Most Junior High Schools teachers in the Sissala East Municipality were below average in their use of the test specification table (M=2.22, SD=1.46, n=248).

- b. Again, below the average of the Junior High Schools teachers in the Sissala East Municipality were considering the variation of students concerning physical disability ($M=2.23$, $SD=1.52$, $n=248$).
- c. In a similar result, below average of the teachers pointed out that they match learning outcomes to the items ($M=2.45$, $SD=1.97$, $n=248$).
- d. Also, below the average of the Junior High Schools teachers in the Sissala East Municipality were writing more items than needed ($M=2.32$, $SD=1.96$, $n=248$).
- e. A few teachers in the Sissala East Municipality again pointed out that they ask any other colleagues' teacher to go through their constructed test items ($M=2.15$, $SD=1.14$, $n=248$).
- f. Few of the teachers in the Sissala East Municipality were of the view that they use questions directly from textbooks ($M=2.12$, $SD=1.76$, $n=248$).

The findings from the present study disagree with the assertion of Tom and Gary (2003), who indicated that, when teachers fail to consider the meaning of words against a different ethnic background in constructing test items, the interpretation made from the test may lead to faulty conclusions. The possible cause of this finding and many others in the above findings may be due to the limited time and excessive workload on teachers which may lead them to pay less attention to such important principles.

The study further revealed that teachers often ask other colleagues who are not in the subject area to help them construct test items. This attitude might have a great deal of implication for the validity of the test. This is because the teacher assessing the students might not appropriately measure the real competence of the students since he/she might not know the detail of the content coverage and the thinking process to assess a particular topic. The result from the study also revealed that teachers did not often review their test items before administering them. This confirmed the findings of Quaigrain (1992) who indicated that some teachers do not review their tests.

The accumulated findings on how Junior High Schools teachers in the Sissala East Municipality adhered to the construction of test items supports the assertion of Wiliam, (2008), who stated that to increase the validity of a test, teachers must consider the student's language proficiency. He further stipulated that the "test would be invalidated if it turned out that the reading requirements of the test were so demanding that students with poor reading ability, but a sound understanding obtained low marks" (p. 4). On the other hand, if a student possessed an understanding of an issue demanded by a test, but failed to show it for reasons of linguistic difficulty then, the results of that test would be invalid.

Research Question 1b: How do Junior High Schools teachers in Sissala East Municipality adhere to the principles of test Administration?

Test administration serves as one of the key components of achievement tests in the classroom. In achieving this, the responses from the teachers were calculated using Means and Standard Deviations to show how they adhere to test administration. The results are presented in Table 3.

Table 3: Results on How High Schools Teachers in the Sissala East Municipality Adhere to Principles of Test Administration

When administering a test, I.....	Mean	SD
Prepare classroom a day before the test is taken	1.77	1.78
Inform student about the test format	3.63	1.75
Give more instructions during the time the students are taking the test	2.98	1.27
Proofread all test items before administration	2.76	0.96
Inform students in advance areas for the test	2.72	1.76
Make provision for extra sheets and writing materials	2.20	1.74
Make students aware of the rule and regulation covering the test	2.17	1.22
Make provision for emergencies during the time the test is taken	2.12	1.95
Students start and stop test on time	1.85	1.65
Tests are given after a long vacation or important holidays	1.72	1.25
Adequate ventilation and lighting	1.57	1.14
Use "DO NOT DISTURB SIGN" at the entrance of the classroom	1.35	1.84
Mean of means /SD	2.44	1.66

Source: Field Data, 2019

Cut-off Mean value=2.50

Table 3 gives the result on how Junior High Schools teachers in the Sissala East Municipality adhere to the administration of test items. The results showed that generally, just below the average of the teachers in the Sissala East Municipality adhere to test administration principles in their achievement test. This was evident after the Mean of Means (MM=2.44, SD=1.66) was less than the Cut-off Mean value of 2.50. The teachers only adhere to a few principles which include:

- a. They confirmed that they inform the student about the test format (M=3.63, SD=1.75, n=248).
- b. Another test administration principle was the fact that most give more instructions in the test paper the time the students are taking the test (M=2.98, SD=1.27, n=248).
- c. Above average of the Junior High Schools teachers in the Sissala East Municipality indicated that they proofread all test items. (M=2.76, SD=0.96, n=248).

The following are some key principles that some teachers least adhered to and which could affect the results of achievement test

- a. Below average of the Junior High Schools teachers in the Sissala East Municipality indicated that they make provision for extra sheets and writing materials ($M=2.20$, $SD=1.74$, $n=248$).
- b. In another breath, very few of the teachers make students aware of the rules and regulations covering achievement tests ($M=2.17$, $SD=1.22$, $n=248$).
- c. Most of the Junior High Schools teachers in the Sissala East Municipality pointed out that they least adhere to the principles; students starting and stopping tests on time ($M=1.85$, $SD=1.65$, $n=248$).
- d. The majority of the Junior High Schools teachers in the Sissala East Municipality pointed out that they least provided adequate ventilation and lighting ($M=1.57$, $SD=1.14$, $n=248$).
- e. Finally, the teachers indicated that they least used the “DO NOT DISTURB SIGN” at the entrance of the classroom ($M=1.35$, $SD=1.84$, $n=248$).

From the results in Table 3, it was evident that most teachers averagely often prepare their students in advance before administering the test. This might lead to an improper arrangement environment for a test which can affect students' performance. This was because students trying to find a proper place to sit, due to improper arrangement of desks, poor lighting, among other discrepancies may emotionally affect students. Notwithstanding the cause of this practice might be from the fact that most of the Junior High Schools do not have adequate facilities in terms of classroom and desks to accurately administer tests without interrupting the learning process in other classes concerning space, desks, lighting among others. This finding did not support Anhwere (2009) whose earlier findings suggested that teachers at the Training colleges had adequate facilities and also put in much effort to organise classrooms appropriately when administering tests.

The findings further revealed that teachers averagely control noise when administering tests. This practice is not consistent with the assertion made by Mehrens and Lehmann (2001). According to Mehrens and Lehmann, noise and distraction in the testing environment should be kept at the barest minimum if not eliminated. Interruptions within and outside the testing room tended to affect student's performance. Etsey (2004) also affirmed that it is helpful to hang a – “Do Not Disturb Testing in Progress” sign at the door of the testing room to warn people to keep off. The distraction from outside could

divert the attention of test-takers which could contribute to the low performance of students.

The result also indicated that teachers often give tests immediately after a long vacation or an important holiday. This practice did hinder the test construction principles. The practice was inconsistent with the assertion made by Amedahe and Asamoah-Gyimah (2003) and Etsey (2004) who found that tests must not be given immediately before or just after a long vacation, holidays, or other important events where students are involved either physically or psychologically.

Amedahe and Asamoah-Gyimah (2003) indicated that tests must also not be given when students would normally be doing something pleasant such as having lunch, athletics, or other sporting activities as this will hamper students' concentration. Teachers in the field of testing must be recognised that the implication from the interpretation made of tests weigh a far greater impact on the students more than the teachers' idea of getting a score to represent assessment. Therefore, it would be prudent for teachers to ensure that scores made from students' successive tests yield an appreciable consistency. According to Crocker and Algina (2008), psychological measurement should focus on a way of reducing systematic errors which may result from factors that include "fatigue, boredom, forgetfulness, guessing" among others (p. 6).

Research Question 1c: How do Junior High Schools teachers in Sissala East Municipality adhere to the principles of test scoring?

In achievement tests, the scoring of tests served as one of the principal components in the classroom that teachers were to adhere to. We, assessed how Junior High Schools teachers in the Sissala East Municipality score test items. In achieving this, the responses from the teachers were calculated using Means and Standard Deviations to show how they adhere to test scoring. The results are presented in Table 4.

Table 4: Results on How High Schools Teachers in the Sissala East Municipality Adhered to Test Scoring Principles

When Scoring test, I	M	SD
mark papers just after the test being taken	2.09	1.18
prepare scoring guide	2.63	1.65
make sure test-takers names are kept anonymous	1.98	1.97
grade the responses item by item	2.96	0.46
keep scores of previous items out of sight	1.72	1.86
periodically rescore previously scored items	1.90	1.14
shuffle scripts before scoring	2.09	1.02
score essay test when I am physically sound and mentally alert in a sound environment	1.72	1.58

constantly follow scoring guide	2.15	1.75
am influence by the first few papers read when scoring test items	3.22	1.58
score a particular item for all scripts at a sitting	1.57	1.54
provide comments and errors identified on students' scripts	1.35	1.27
give extra marks to students based on Handwriting.	1.43	1.58
Source: Field Data, 2019		Cut-off Mean value=2.50

Table 4 depicts results on how Junior High Schools teachers in the Sissala East Municipality score test items. The results gave evidence that most Junior High Schools teachers in the Sissala East Municipality have poor scoring principles and this could affect their achievement test. Almost all the pre-coded items were confirmed by the teachers. A few of the scoring principles that the teachers followed were that they:

- a. below averagely prepare scoring guide (M=2.63, SD=1.65, n=248).
- b. below averagely grade the responses item by item (M=2.96, SD=0.46, n=248).

On a larger scale, Junior High Schools teachers in the Sissala East Municipality below averagely adhere to the Test Scoring Principles. Some of the flaws include the fact that:

- a. It was evident that most Junior High Schools teachers in the Sissala East Municipality below averagely mark papers immediately after the test is taken (M=2.09, SD=1.18, n=248).
- b. It was again evident that most Junior High Schools teachers in the Sissala East Municipality least prepare a scoring guide (M=1.63, SD=1.65, n=248).
- c. It was apparent that most Junior High Schools teachers in the Sissala East Municipality least make sure that test takers are kept anonymous (M=1.98, SD=1.97, n=248).
- d. In similar results, the teachers least kept scores of previous items out of sight (M=1.72, SD=1.86, n=248).
- e. Junior High School teachers in the Sissala East Municipality least periodically rescore previously scored items (M=1.90, SD=1.14, n=248).

Teachers indicated that they constantly follow the scoring guide when marking their tests. This process must be hailed since such an attitude would ensure consistency of test scores. This finding supported the assertion that admonishes teachers to constantly follow the marking scheme as they score tests items, as this reduces rater drift, which comes from the likelihood of either not paying attention to the scoring guide or interpreting it differently as time passes (Mehrens & Lehmann, 2001; Amedahe & Gyimah, 2003; & Etsey, 2004).

Notwithstanding, the result from the research also indicated that most teachers do not often consider reshuffling scripts when scoring their tests. The finding opposed the assertion of Mehrens and Lehmann (2001) who asserted that randomly reshuffling scripts when beginning to score each set of items will minimise the bias introduced as a result of the position of one's script. Research by Hales and Tokar (cited in Mehrens & Lehmann, 2001) has shown that a student's essay grade will be influenced by the position of the paper, especially if the preceding answers were either very good or very poor. Mehrens and Lehmann (2001) have pointed out that random reshuffling scripts is especially significant when teachers are working with high- and low-level classes and read the best scripts first or last.

Another finding of the research indicated that teachers did not often score a particular item on all papers at a sitting. This was probably a result of most teachers in Ghana's attitude of not practising what they learned during their training at school of which Sissala East teachers are not exceptional. This practice has been chastised by Mehrens and Lehmann (2001); Amedahe and Gyimah (2003); and Etsey (2004), who agreeably asserted that responses of the item should be scored item by item rather than script by script. This principle is to minimize the carryover effect on the scores and thereby ensure consistency. However, this finding did not support the findings of Amedahe (1989), who recounted that teachers in the schools used mainly the analytic method in scoring their essay-type tests. He further asserted that teachers in the schools scored their essay-type tests either item by item or script by script. On the part of Quairain (1992), he found that majority of teachers in the schools used the analytic method in scoring their essay-type tests.

With regards to scoring, teachers also indicated that they give extra marks to students based on handwriting, gender etc. Perhaps the teachers did that to encourage them to come to school always. This was at the background that students in the various Senior High Schools in the North hardly love to go to school. This practice has been elaborated by Amedahe and Gyimah (2003) and Etsey (2004), who indicated that the mechanics of expressions such as correct grammar usage, the flow of expression, quality of handwriting, orderly presentation of material, and spelling should be judged separately from subject matter correctness. When teachers are influenced by factors other than the subject matter, the marks awarded would represent construct irrelevant or construct mis-representativeness. This simply means higher scores on tests might not reflect the ability of students on the subject matter but rather discriminate students in proficiencies they have over other students.

The results also indicated that anonymity is not ensured when teachers score their tests. This probably may be due to the cultural settings of the people where they believed that they are each other keepers and therefore may want to help one another to succeed. This finding flouts the assertion of Etsey

(2004) who indicated that scripts must be scored anonymously. He suggested scripts should be identified by code numbers or any other means instead of the names of students. This principle is to reduce the halo-effect. This happens when a scorer’s general impression of a person influences how the paper is scored.

Research Question Two: What kinds of achievement test strategies do Junior High Schools teachers in the Sissala East Municipality use to assess their students’ learning outcomes?

To obtain a comprehensive result, we assessed the kinds of achievement test strategies do Junior High Schools teachers in the Sissala East Municipality use to assess their students’ learning outcomes. In accomplishing this, the responses from the teachers were compiled and ranked using Means and Standard Deviations. The results are presented in Table 5.

Table 5: Results on the Kinds of Achievement Test Strategies Junior High Schools Teachers in the Sissala East Municipality Use to Assess Their Students’ Learning Outcomes

Kinds of achievement test strategies	N	M	SD	Remarks
Writing Samples	248	3.19	1.65	S
Assessing work samples	248	3.09	1.78	S
Experiments/Demonstrations	248	2.96	0.98	S
Presentations	248	2.16	1.72	NS
Computer simulation task	248	1.95	1.49	NS
Exhibitions	248	1.86	1.54	NS
Projects	248	1.72	1.75	NS
Constructed-Response Items	248	1.67	1.12	NS
Report writing	248	1.66	1.59	NS
Role-play	248	1.63	1.54	NS
Drama	248	1.42	1.53	NS
Story Telling	248	1.09	1.57	NS

Source: Field Data, 2019

Cut-off Mean value=2.50

Key- S=Strategy, NS=Not a Strategy

Table 5 presents the kinds of achievement test strategies Junior High Schools teachers in the Sissala East Municipality use to assess their students’ learning outcomes. From the results, it is evident that few of the achievement test strategies are used. Some of the strategies include: writing samples (M=3.19, SD=1.65, n=248); assessing work samples (M=3.09, SD=1.78, n=248); experiments/demonstrations (M=2.96, SD=0.98, n=248).

Some of the kinds of achievement test strategies Junior High Schools teachers in the Sissala East Municipality averagely use to assess their students include presentations (M=2.16, SD=1.72, n=248); computer simulation task (M=1.95, SD=1.49, n=248); exhibitions (M=1.86, SD=1.54, n=248); projects (M=1.72, SD=1.75, n=248); constructed-response items (M=1.67, SD=1.12, n=248); report writing (M=1.66, SD=1.59); role-play (M=1.63, SD=1.54).

n=248); drama ($M=1.42$, $SD=1.53$) and storytelling ($M=1.09$, $SD=1.57$, $n=248$). The results show that generally, Junior High Schools teachers in the Sissala East Municipality averagely adhere to most principles of test construction ($MM=2.46$, $SD=1.44$). This may be as a result of some teachers relying on past questions instead of constructing the items on themselves. Some also copy test items directly from textbooks. Yet these problems may happen due to inadequate knowledge of teachers in test constructions. Because if teachers know the principles of test constructions, they will know that it is not ideal to use already constructed items to assess their students.

Conclusion

The results show that generally, the majority of the teachers in the Sissala East Municipality averagely adhere to test administration principles in their achievement tests. It also gave evidence that most Junior High Schools teachers in the Sissala East Municipality have low average scoring abilities and this always affects the achievement test results. Again, it was evident that most of the achievement test strategies were not used among Junior High Schools teachers in the Sissala East Municipality. Teachers having such a sensitive responsibility of assessing and making a decision concerning students' academic progress are expected to be professional in the process of achievement testing strategies.

Recommendations

Concerning the findings resulting from the study, the following recommendations were made for the improvement of testing practices among Junior High Schools teachers in the Sissala East Municipality:

1. More workshops and in-service training should be organized for teachers in Junior High Schools with respect to their testing practices (construction, administration, and scoring of tests). This could be achieved through the collaboration of the ministry of education, the institute of education, and other stakeholders of education.
2. The teacher education division could make it a point to equip the teachers with skills in their testing practices. This is because testing forms an integral part of the teaching profession since it is the most widely used channel for assessing students in Ghana.
3. Teachers could also be sensitized on regular basis on the importance of their testing practices construction, administration, and scoring by the Ghana Education Service training unit.
4. Teachers should be aware of how misleading scores could affect the future of a student. This could be achieved through effective supervision from the office of the education directorate.

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Revue de Litterature du Concept « Performance Logistique » : Un Essai de Synthese

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Résumé

La performance est une notion complexe, ambiguë et difficile à définir. Auparavant, elle se focalise sur les notions d'efficacité et d'efficience (la réduction des coûts) et elle est la plupart du temps centrée sur la dimension financière. En effet, l'aspect multidimensionnel de la performance est aujourd'hui confirmé, et elle devient un concept qui intègre différentes dimensions pour la définir et différents indicateurs de mesure. Dans le contexte de la chaîne logistique, la performance logistique a fait l'objet de nombreux travaux de recherche, notamment ces dernières années. Certaines recherches s'intéressaient à l'amélioration du fonctionnement du processus productif et à l'optimisation de la planification. D'autres recherches ont étudié les facteurs clés de la performance organisationnelle. Ce présent travail aura comme objectif central de présenter la diversité des regards possibles sur la notion de performance logistique et ses différents indicateurs et référentiels.

Mots clés : Performance ; indicateur de la performance, performance logistique ; modèles d'évaluation de la performance logistique

Literature Review of « Logistic Performance » Concept : A Synthesis Essay

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Abstract

Performance is a complex concept, ambiguous and difficult to define. Previously, it focused on the concepts of effectiveness and efficiency (cost reduction) and it is mostly focused on the financial dimension. Indeed, the multidimensional aspect of performance is now confirmed, and it is becoming a concept that integrates different dimensions to define it and different measurement indicators. In the context of the supply chain, logistics performance has been the subject of much research, especially in recent years. Some research was interested in improving the functioning of the production process and optimizing planning. Other research has looked at the key factors in organizational performance. The main objective of this present work will be to present the diversity of possible views on the notion of logistics performance and its various indicators and benchmarks.

Keywords : Performance ; performance indicator, logistics performance ; logistics performance assessment models

Introduction

Aujourd'hui, toute entreprise est confrontée à de nombreux défis tels que l'augmentation du marché de la concurrence, la mondialisation des marchés, l'évolution technologique, l'évolution des attentes et des besoins... auxquels leur performance est très sensible. En conséquence, le contexte économique actuel du marché pousse les entreprises à rationaliser au maximum leurs modes de gestion, et adopter des nouvelles formes d'organisation.

La mesure de la performance est l'une des problématiques présentes de manière récurrente dans de nombreuses recherches académiques, particulièrement dans un contexte de chaîne logistique (Sovorons et Zipkin, 1988 ; Tan, 2001 ; Min et Zhou, 2002 ; Arzu et al., 2010 ; Yao et al., 2006 ; Kabili et al., 2010), où l'on traite à la fois de la performance individuelle de chacun des acteurs, et de la performance globale de toute la chaîne.

La performance logistique attire beaucoup l'attention des chercheurs, ainsi que celle des managers, car elle reflète une partie importante de la performance globale de l'entreprise (Lehtonen, 2001). De plus, la performance globale n'est pas la simple somme des performances individuelles,

conformément aux principes de la systémique (Botta-Genoulaz et al. 2010). C'est pourquoi, la mesure de la performance n'est pas un objectif en soi mais un moyen mis à la disposition des entreprises pour leur progression.

L'objectif central de ce travail, est de présenter la diversité des regards possibles sur la notion de performance logistique ainsi que ses différents indicateurs et référentiels.

Pour ce faire, et afin de mieux cerner la notion de performance logistique, il s'avère nécessaire d'exposer le concept de performance dans sa globalité et ses différentes approches. Par la suite, nous entamons l'examen et l'analyse des travaux sur la performance logistique. A la fin, nous étudions les différents indicateurs et modèles d'évaluation de la performance logistique.

1. La performance : cadre conceptuel

1.1. Définitions

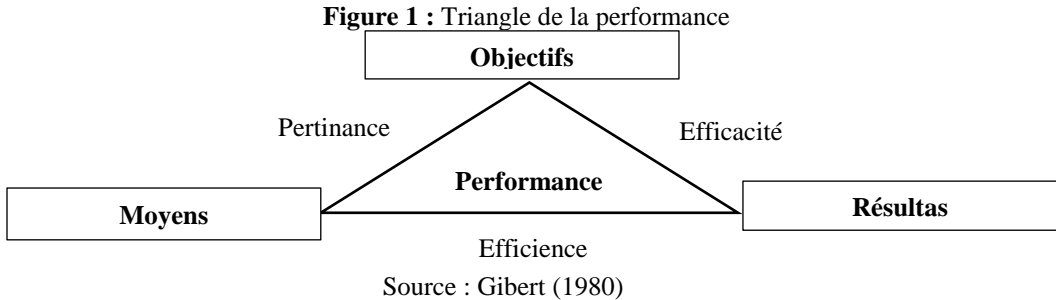
Associé à tout système ou activité, le terme performance est largement utilisé et étudié dans son concept, sa mesure et son mode de gestion. Afin de mieux cerner la notion de performance logistique, il s'avère tout d'abord nécessaire d'exposer le concept de performance dans sa globalité.

Par nature, la notion de la performance est multidimensionnelle (Chow et al., 1994) surtout lorsqu'on s'intéresse aux structures inter-organisationnelles où le nombre de partenaire reste important, et sa définition a toujours été une préoccupation majeure des entreprises (Estampe et al., 2013).

Dans le domaine de la gestion des entreprises, la performance a toujours été une notion ambiguë et rarement définie explicitement (Issor, 2017). C'est dans ce sens que Lebas et Euske (2007) déclarent que le mot « Performance » est amplement utilisé dans tous les domaines de la gestion. « On trouve dans le domaine du contrôle de gestion, des termes tels que la gestion de la performance, l'évaluation de la performance et l'estimation de la performance ». En effet, le concept de la performance reste une problématique largement abordée dans la littérature grâce à ses éclairages qu'elle offre aux gestionnaires dans la gestion stratégique de leurs organisations (Giraud et al., 2002). Ce concept de performance est couramment utilisé dans les milieux organisationnels pour désigner un certain niveau d'excellence.

La performance est qualifiée selon, les gestionnaires comme étant « tout ce qui, et seulement ce qui, contribue à atteindre les objectifs stratégiques » (Lorino, 1997). En outre, la performance des organisations dépend de leurs caractéristiques internes mais également des liens qu'elles nouent avec d'autres organisations. Elle peut être mesurée selon, Chen et Paulrai (2004) de plusieurs façons et de plusieurs points de vue (financière et opérationnelle). De la même manière il n'existe donc pas une seule performance, mais plutôt plusieurs performances (Bronet, 2006).

Le concept de la performance a connu, depuis son adoption par les gestionnaires, plusieurs significations. Au début, dans les années quatre-vingt la performance d'une entreprise se situait au centre d'un triptyque (figure 1) : objectifs, moyens et résultats (Gibert, 1980).



Le segment entre résultats et moyens définit l'efficacité et permet de savoir si l'entreprise arrive à atteindre ses objectifs avec moins de coûts et de moyens. Le segment entre moyens et objectifs désigne la pertinence et permet de savoir si l'entreprise s'est munie des bons moyens pour atteindre ses objectifs. Le segment entre objectifs et résultat désigne l'efficacité et permet de savoir si l'entreprise a obtenu le résultat souhaité ou attendu. A partir des années 1990, le périmètre de la performance a étendu pour arriver à la dimension organisationnelle des organisations. Elle désigne la mesure de l'atteinte des objectifs, mais aussi, « mesure de ce qui contribue à atteindre ces objectifs » (Morin et al, 1994). À ce stade, la performance de l'entreprise dépasse l'aspect financier.

Dans la littérature, l'étude de la notion de la performance a occupé une place centrale dans de nombreuses recherches. En effet, et pour répondre à la question « Qu'est-ce que la performance ? » nous passons en revue les différentes définitions de la performance proposées dans la littérature. Nous illustrons dans le tableau ci-dessous quelques-unes.

Tableau 1 : Définitions de la performance

Auteur	Définition
Albanes, 1978	« La performance de l'entreprise peut se définir comme le degré de « La performance est la raison des postes de gestion, elle implique l'efficacité et l'efficience ».
Berrah, 2015	« Une entreprise performante est une entreprise qui atteint les objectifs qu'elle annonce ».
Pichot, 2006	« La performance est l'efficience et l'efficacité d'une organisation à réaliser ses objectifs ».
Notat, 2007	« Un constat officiel enregistrant un résultat accompli à un instant t, toujours en référence à un contexte, à un objectif et un résultat attendu, et ce quel que soit le domaine ».
Armstrong, 2009	« C'est un processus systématique qui vise à améliorer la performance organisationnelle en développant la performance des individus et des équipes ».

Wissler et al., 2012	« <i>Le résultat d'une action</i> ».
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Source : Traduit et adopté de la littérature

Quatre points communs ont été identifiés à partir des définitions mentionnées ci-dessus :

- Le terme performance désigne un résultat qui représente le « niveau de réalisation des objectifs » (Burlaud, 1995)
- Le terme de performance est souvent utilisé dans un contexte d'évaluation, c'est pour cela dans la performance est intimement liée à la valeur.
- Le terme de performance ne se définit pas toujours d'une manière objective et absolue mais plutôt d'une manière subjective.
- Le terme de performance c'est une action, qui implique une production réelle, donc un processus ;

Il en résulte que la performance peut être vue comme la capacité d'une entreprise à conduire une action pour obtenir des résultats conformément à des objectifs fixés préalablement, tout en minimisant le coût des ressources et des processus mis en œuvre (Neely et Platts 2005).

De ce qui précède, la performance a pour objectif de maximiser la création de la valeur, et de minimiser les coûts de l'entité en question. De plus, elle est un concept qui s'attache à un résultat obtenu, lié à l'atteinte d'un objectif et, de manière équivalente, à l'exécution d'une action. En somme et comme démontré là-dessus, la notion de performance est reconnue par plusieurs auteurs par son caractère multidimensionnel et elle est intéressante pour les entreprises de la mesurer à différents niveaux.

1.2. Les indicateurs de la performance

Un critère est une valeur définie qui sert de base à un jugement et qui permet de mesurer la performance. Les critères de performance constituent des repères et permettent aux entreprises de mener une action en vue d'atteindre un objectif. Alors, les indicateurs de performance d'une entreprise sont à la fois un outil de mesure de la santé de l'entreprise et un outil d'aide à la décision.

Les critères peuvent être d'ordre quantitatifs ou qualitatifs. Ils sont définis en fonction des objectifs propres à chaque organisation. En économie, les indicateurs sont des statistiques construites afin de mesurer certaines dimensions de l'activité économique et leurs évolutions. Alors, ils se présentent sous forme des informations concrètes, chiffrées et opérationnelles qui fournissent des indications, des renseignements sur la valeur d'une grandeur mesurée (Larousse, 2012).

Un indicateur de performance est « une donnée quantifiée qui mesure l'efficacité et/ou l'efficience de tout ou partie d'un processus ou d'un système (réel ou simulé), par rapport à une norme, un plan ou un objectif, déterminé et accepté dans le cadre d'une stratégie d'entreprise » (AFGI, 1992). En fait, les indicateurs de performance ont deux fonctions : premièrement évaluer et mesurer les résultats ou les données déjà réalisés, deuxièmement donner l'information aux décideurs ou aux utilisateurs potentiels pour fixer des objectifs à atteindre dans le futur (Bhagwat et Sharma, 2007). Depuis longtemps, les entreprises ont utilisé les indicateurs pour évaluer leur performance, notamment à travers leur comptabilité.

Les indicateurs de performance sont des données permettant aux décideurs d'entreprises à caractériser une situation évolutive, une action ou les conséquences d'une action de façon à les évaluer et à comparer leur état à différentes dates (NOYES D et al, 2007).

Globalement la performance d'une organisation est évaluée par des indicateurs dites stratégiques. Ceux-ci sont liés à des indicateurs de processus qui traduisent la performance locale de différents services de l'entreprise. Ces indicateurs de processus sont associés aux Facteurs de Performance lorsqu'ils se situent au niveau tactique et aux Facteurs de Progrès pour le niveau opérationnel (Clivillé, 2004).

Pour évaluer la qualité et la pertinence des indicateurs de performance, Lorino (2001) les classent selon trois critères :

- Le critère stratégique de l'indicateur : il doit être associé à un objectif clair à atteindre. Il informe du bon déroulement ou non d'une action qui participe à l'atteinte des objectifs.
- Le critère tactique de l'indicateur : il doit permettre d'orienter facilement l'acteur à agir et comprendre les facteurs de réussite ou d'échec.
- Le critère opérationnel de l'indicateur : il consiste à vérifier que les mesures effectuées soient les résultats d'un type d'action précis et identifié, que les données utilisées soient dignes de confiance. La pertinence opérationnelle d'un indicateur concerne donc la validité des résultats.

Le choix d'un bon critère de mesure de la performance repose selon Dorey F (1986) sur trois conditions

- L'indicateur de performance choisie doit être parfaitement en harmonie avec les phénomènes étudiés.
- L'indicateur de performance choisie doit être objective et mesurable, cela veut dire il doit être calculé à partir des données fiables et disponibles.

- L'indicateur de performance choisi doit prendre en considération l'aspect dynamique des phénomènes observés.

En somme, un indicateur de performance est un outil facilitant la prise de décision pour les décideurs et qu'il est pour objectif de mesurer la réalisation d'un objectif en temps réel et d'apprécier le plus objectivement possible l'atteinte d'une performance. En effet, le paragraphe suivant a pour mission de présenter un état de l'art de la performance logistique.

2. La performance logistique : cadre conceptuel

2.1. Définitions

La logistique est maintenant au cœur des priorités de l'entreprise parce qu'elle contribue considérablement à la performance de celle-ci (Pimor, 2005). De plus, le succès d'une entreprise est fortement lié à la performance de sa chaîne logistique. Aujourd'hui, atteindre le niveau de la performance ne peut être obtenu, si on se focalisant seulement sur l'optimisation des processus internes mais nécessite une vision globale pour améliorer la performance de toute la chaîne logistique.

Une logistique est dite performante, si et seulement si l'entreprise est capable d'assurer la satisfaction du client en lui livrant des produits/ services de bonne qualité, en quantité requises, au bon moment, au bon endroit et en consommant moins de ressources. Ainsi, et pour y arriver, il est indispensable de maîtriser toutes les fonctions opérationnelles existantes entre les différents acteurs de la chaîne logistique de l'approvisionnement à la livraison en passant par la production, l'acheminement, l'entreposage et le conditionnement.

Pour atteindre la performance logistique, les entreprises veillent à étudier le rapport entre la qualité de service fourni au client (efficacité) et les moyens consommés à cette intention (efficacité) (Richey et al., 2010). Ainsi, la performance logistique est généralement liée au service de livraison, aux coûts logistiques et au coût d'immobilisation du capital (Forslund, 2012). Alors que, le service de livraison se mesure par les délais de livraison, les coûts logistiques sont liés au transport et à l'entreposage, tandis que le coût d'immobilisation du capital concerne les stocks de matières, composants et produits finis.

De façon générale, l'efficacité correspond au respect des exigences de la clientèle, et l'efficacité correspond aux ressources de l'organisation utilisées pour atteindre les niveaux escomptés de satisfaction de la clientèle. Ainsi que, une logistique performante est tout élément contribue à optimiser le rapport valeur/ coût dont l'objectif est de minimiser le total des coûts logistiques comme le délai, la flexibilité et le temps de livraison, etc., pour un niveau de service souhaité productivité.

Bref, La performance logistique est pour mission « de répondre à la demande du client à un niveau de service fixé au moindre coût » (Heskett, 1977). De même, La performance logistique est un concept multiple qui doit être appréhendé de façon globale et transversale dans la mesure où les flux ne s'arrêtent pas aux frontières de l'entreprise.

2.2. Les critères de la performance logistique

Dans la chaîne logistique, les flux physiques, d'informations et monétaires ne s'arrêtent pas aux frontières de la même entreprise, mais ils dépassent ces frontières aussi bien en amont qu'en aval, puisqu'on parle du fournisseur du fournisseur au client du client. Face à cette réalité, le concept de la performance logistique est devenu complexe et à multiples facettes et qui doit être appréhendée de façon transversale et globale sur toute la chaîne logistique.

Selon Lorino (2003) et Bouquin (2004), les indicateurs de performance sont associés à une « action à piloter », où ils se résument à faire « mieux que les autres, plus vite, moins cher, plus écologique », en mettant l'accent sur quatre leviers clés, soient la fiabilité, l'efficacité, la réactivité et le respect de l'environnement.

- La fiabilité logistique est « la capacité de répondre à la demande du client selon un niveau de service fixé » (Jouenne, 2011). Les indicateurs susceptibles de mesurer la fiabilité logistique sont le taux de service fournisseurs, le taux de service client, taux de fiabilité des prévisions, le taux de service transport, le taux de réclamations, le taux d'absentéisme du personnel, etc.
- L'efficacité logistique est le rapport entre efficacité et coût. Il vise à atteindre un objectif avec le minimum de moyens engagés. Les indicateurs susceptibles de mesurer cette efficacité logistique sont coût de possession de stock, coût total d'achat, coût de fabrication, coût de transport, etc.
- La réactivité logistique est la capacité de s'adapter rapidement aux fluctuations de la demande. Les indicateurs susceptibles de mesurer cette réactivité logistique : rotation des stocks, time-to-market, vitesse d'écoulement des produits, ratio de tension des flux, cycle order-to-cash, cycle cash-to-cash, temps de cycle, de transit, d'attente, etc.
- Le volet de respect de l'environnement, à travers l'adoption de pratiques "vertes" tels que le transport multimodal, mutualisation des infrastructures et du transport, logistique inverse ainsi que le recyclage des produits. Pour les indicateurs éco-logistiques, le pourcentage de la consommation d'énergie, l'émission de gaz à effet de serre les tonnes de CO₂ émises par les activités logistiques, etc.

Dans le même ordre d'idée, la mesure de la performance logistique d'une entreprise, est un élément essentiel, qui fournit aux décideurs d'entreprises en question plus de visibilité autour :

- des informations relatives aux coûts des opérations et des produits qui circulent tout au long de la chaîne logistique ;
- des informations nécessaires à l'ensemble des ressources engagées (ressources humaines, financières, technologiques) dans chaque opération d'un processus logistique ;
- des informations relatives aux retours sur investissement réalisé ou dégagés par chaque produit ou chaque opération de ce processus logistique.

Les chercheurs en logistique ont essayé de rassembler les KPI susceptibles de mesurer la performance logistique d'une entreprise. En effet, chaque KPI est appliqué à chaque maillon ou à chaque fonction d'une chaîne logistique, comme le montre le tableau ci-dessous :

Tableau 2 : Exemple d'indicateurs de performance logistique

Fonction dans l'entreprise	Exemple d'indicateur de performance
La fonction Achat et Approvisionnement	Taux d'achat par famille de produits, taux de retards, de litige, etc.
La fonction Production	La capacité de production utilisée, le coût d'arrêt des équipements, la durée moyenne du cycle de production, etc.
La fonction Transport	Taux de remplissage des véhicules, Taux de consommation du carburant, Traçabilité des véhicules, etc.
La fonction Stockage et Gestion des stocks	Taux de rotation des stocks, Taux de détention des stocks, Taux de rupture des stocks, etc.
La fonction Vente et Distribution	Taux de fiabilité des prévisions de ventes, Taux de satisfaction des clients, etc.
Le service fourni au Client	Taux du service client, Taux de réclamations client, etc.

Source : Nous-même

Pour évaluer le fonctionnement d'une chaîne logistique, trois dimensions sont, à notre sens, essentielles à prendre en compte : la vitesse, la qualité et le coût (Hult et al., 2004). C'est ainsi que la performance logistique peut être mesurée par la fiabilité des livraisons, la réduction des coûts, des délais, la conformité aux spécifications des clients, l'amélioration des processus et le time to market¹.

Les managers des entreprises tentent d'évaluer en permanence leur performance logistique, en utilisant plusieurs indicateurs mis en place par les auteurs du SCM, comme celui de Fassio (2006, p20), qui suppose que la performance logistique est :

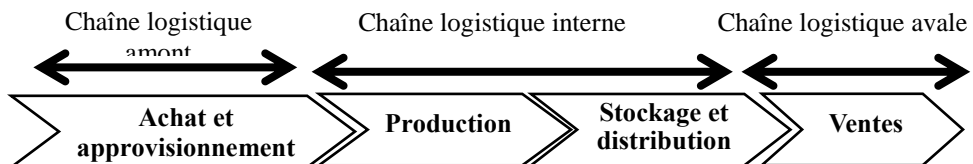
¹ Time to market désigne le délai de mise sur le marché de nouveaux produits.

- Le respect de la date contractuelle de la livraison au client.
- La livraison au lieu désigné par le client
- La livraison de la juste quantité commandée
- Le respect de la qualité produit prescrite
- La conformité du conditionnement sollicité
- Un ordre de préparation conforme à l'ordre prescrit de la consommation
- L'accompagnement concomitant des informations requises par le client ou la profession.

Ce présent article propose une synthèse des indicateurs tirés depuis les travaux de (Gunasekaran et al., 2004 ; Gunasekaran et al., 2001 ; Barut et al., 2002 ; Sahin et Robinson, 2005 ; Wu et Song, 2005 ; De Toni et Nassimbeni, 2001) pour mesurer la performance d'une chaîne logistique (Figure 2).

Comme indiqué précédemment, trois niveaux distingués des indicateurs de la performance de la chaîne logistique (stratégique, tactique et opérationnel), et chaque niveau est rattachés à un macro-processus en différenciant ainsi les indicateurs internes des indicateurs externes. Au niveau stratégique, les indicateurs couvrent les différents processus de la chaîne logistique, ils sont pour la plupart transversaux. En revanche, au niveau tactique et opérationnel, chaque indicateur est associé à un processus.

Figure 2 : Principaux indicateurs de performance d'un supply chain



- **Indicateurs stratégiques** : coût d'achat, profits, délais de la commande etc....

- **Indicateurs tactiques** : délais fournisseurs, délais de production, fiabilité de la livraison fournisseur, précision des prévisions de ventes etc...

- **Indicateurs opérationnels** : taux de rebus fournisseurs, taux d'utilisation des ressources, qualité de la livraison etc...

Source : Bonnefous (2001)

Toutefois, et afin d'arriver à mesurer efficacement la performance logistique des entreprises, il fallait demander quels outils ou quels modèles à mettre en place. C'est dans ce sens que plusieurs modèles de mesure de la

performance logistique ont été élaborés par les auteurs de la SCM. Le paragraphe suivant essaye de mettre en lumière ces différents modèles

3. Les modèles d'évaluation de la performance logistique

Les modèles d'évaluation de la performance sont considérés comme des outils de gestion permettant les changements stratégiques. Une de leurs caractéristiques est de représenter plusieurs points de vue (financiers, stratégie, opération, etc.) concernant l'organisation de la chaîne logistique pour permettre une analyse dans le temps et l'espace (Estampe, 2015). En effet, un modèle d'évaluation de la performance adapté est un modèle en cohérence avec les objectifs globaux de l'entreprise (Berrah, 1997 ; Le Clainche, 2001). Il doit permettre de structurer et de lier ces différents indicateurs entre eux, mais il doit également les mettre en perspective, afin de faciliter l'analyse et le diagnostic de sa situation ou de son contexte.

Dans la littérature scientifique, les modèles d'évaluation de la performance logistique ne sont pas nombreux, l'étude des références bibliographiques, ainsi que l'analyse des pratiques de certaines organismes (SCC², ASLOG³) et personnes (Gilles Paché, Dominique Estampe, Tomas Hult et Angappa Gunasekaran) éminentes dans le domaine de la chaîne logistique, nous a permis d'identifier différents référentiels d'évaluation de la performance logistique. De plus, vu la modernisation, la digitalisation et la mondialisation du concept et des pratiques liés à la chaîne logique, quatre référentiels majeurs méritent d'être cités dans ce présent article dont les suivants :

a- Le modèle WCL (World Class Logistic model)

Le WCL est un outil regroupant les facteurs-clés de succès d'une politique de chaîne logistique en fonction de quatre domaines de compétences : le positionnement stratégique, l'intégration, la réactivité et la mesure de la performance. Ces quatre domaines fournissent un certain nombre d'indicateurs multidimensionnels de performance pour une meilleure coordination inter organisationnelle, entendue comme l'ensemble des liaisons verticales existant entre les différents intervenants de la chaîne globale qui va du fournisseur au client final, en passant par les industries de transformation, le canal de distribution et les prestataires de services logistiques (Paché et Sauvage, 1999). Dans le World Class Logistic model, l'un des quatre domaines de compétences considérés correspond à l'intégration de la chaîne

² Le Supply Chain Council est une organisation sans but lucratif regroupant plus de 1000 membres, qui sont des professionnels provenant de tous les types d'industries (fabricants, distributeurs, détaillants, services etc.

³ ASsociation de la LOGistique fédère plus de 500 entreprises et 4 000 professionnels. Elle traite toutes les questions relatives aux enjeux de la chaîne d'approvisionnement.

logistique. L'ensemble des questions relatives à cet axe permet d'évaluer les moyens mis en place pour synchroniser l'ensemble des entités de la supply chain. Ces questions se subdivisent en différents thèmes comme le montre le tableau 3. Le modèle WCL permet également d'évaluer la performance de la supply chain en étudiant plus particulièrement les indicateurs internes de l'entreprise, la manière dont ces indicateurs sont utilisés le long de la chaîne logistique et en proposant une analyse de type benchmark. En revanche, le modèle ne propose pas de liens entre les résultats de l'axe « intégration » et les résultats de l'axe « mesure de la performance ».

Tableau 3 : Une partie du modèle World Class Logistic

Indicateur	Signification
Unification de la supply chain	Capacité à développer des relations de coopérations avec les autres entreprises à travers la chaîne logistique
Système d'information	Investissements en matériels, logiciels et réseaux ainsi que leur adaptation pour faciliter les processus et les échanges d'informations sur la chaîne logistique.
Partage de l'information	Volonté d'échanger des données essentielles à caractère technique, financier, opérationnel et stratégique.
Compatibilité	Capacité de l'entreprise à échanger des informations dans un format approprié, réactif, et facilement utilisable sur la chaîne logistique
Standardisation	Mise en place de politiques et de procédures communes pour faciliter et améliorer les opérations logistiques
Simplification	Re-engineering des procédures afin d'améliorer l'efficacité
Adhésion des hommes	Acceptation des politiques et des procédures opérationnelles.

Source : Paché et Sauvage (1999)

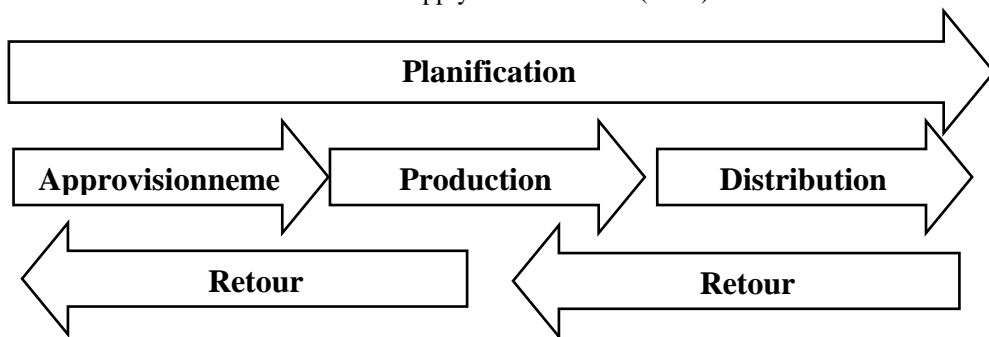
b- Le référentiel SCOR (Supply Chain Operations Reference)

Initialisé en 1996 par le Supply Chain Council (S.C.C), ce modèle présente un guide standard pour les entreprises, qui définit une démarche, des processus, des indicateurs et les meilleures pratiques du moment pour représenter, évaluer et diagnostiquer la chaîne logistique. Ce modèle replace la chaîne logistique interne de l'entreprise au sein de la chaîne logistique étendue avec clients et fournisseurs. Il identifie cinq processus de niveau 1 (voir Figure 3) :

- Processus « Planifier » qui correspond à la mise en adéquation des capacités avec la demande (planification des stocks, priorisation des demandes, ...).
- Processus « Approvisionner » qui regroupe l'ensemble des actions concourant à la mise à disposition des matières premières ou services conformément aux plannings incluant notamment la commande, la réception, le contrôle des matières.

- Processus « Fabriquer » qui contient l'ensemble des actions de transformation du produit.
- Processus « Distribuer » qui correspond à l'ensemble des étapes qui permettent de livrer le produit conformément à la demande (gestion de la commande, stocks, transport...).
- Enfin, Processus « Retour » qui a été intégré au modèle de référence à partir de la version 4.0 (SCC. 2000) et qui ne cesse d'évoluer depuis et qui regroupe les activités de pilotage des flux retours des produits incluant entre autres, les fonctions de planification, de réception et de vérification.

Figure 3 : Niveau 1 modèle SCOR
Source : Supply Chain Council (2005)



Un processus supplémentaire est introduit par le modèle SCOR : il s'agit du processus « Enable ». Il représente les activités supports à la gestion de la chaîne logistique, les différentes tâches et informations utiles pour la réalisation des processus « opérationnels ». Ce processus est scindé en plusieurs sous processus « Enable » planifier, approvisionner, fabriquer, distribuer et retourner. Chacun de ces processus est ensuite décrit sur 3 niveaux supplémentaires. Le niveau 2, les catégories de processus, correspond à une déclinaison des processus de niveau 1 en fonction de la stratégie logistique. Il permet de préciser les processus et de simplifier leur compréhension.

c- Le guide logistique ASLOG

Le guide logistique ASLOG est un référentiel logistique en se basant sur celui mis au point par Volvo dans les années 1990. Ce dernier a été amélioré et constitue à ce jour une base de référence intéressante pour juger de la pertinence d'un système logistique. Le référentiel de la performance logistique de l'ASLOG (ASLOG 2006) est un catalogue de mesures et d'actions de progrès. Le concept de la chaîne logistique a été introduit en 2002, avec la 3ème version, celle-ci étant encore enrichie dans sa version 2005. En effet, Ce référentiel permet de caractériser la situation actuelle de la chaîne

logistique ainsi que l'évaluation de sa performance à travers 200 questions selon dix axes

- Axe 1 : le management, la stratégie, et la planification. Le référentiel préconise un choix de lieu de production en fonction de l'environnement général, des infrastructures, de la réglementation, des possibilités offertes par les collectivités locales, du bassin d'emploi...
- Axe 2 : la conception des produits. Le référentiel encourage la standardisation et la création de modules, la réduction des impacts environnementaux liés à la destruction des emballages,
- Axe 3 : les approvisionnements. Le référentiel recommande de choisir les fournisseurs en fonction de l'éloignement, de la facilité et des coûts de transport ; d'optimiser le transport en partenariat avec d'autres fournisseurs,
- Axe 4 : la production. Le référentiel encourage notamment la polyvalence du personnel et l'organisation de la maintenance préventive afin de limiter les risques de pannes,
- Axe 5 : les livraisons. Le référentiel distingue les livraisons amont et aval mais rien n'est spécifié sur les aspects environnementaux et sociaux,
- Axe 6 : le stockage. Une gestion préventive des moyens de manutention et de stockage, la réduction du nombre de références (types, variétés) et la standardisation des conditionnements sont recherchées,
- Axe 7 : les ventes. La fiabilité des informations notées sur l'étiquetage, l'interrogation des clients sur leur satisfaction, ... sont encouragées,
- Axe 8 : les retours et le SAV. Le référentiel incite à mettre en place des stratégies d'améliorations continues afin de réduire le nombre de retours,
- Axe 9 : les indicateurs de pilotage. Le référentiel approuve la mise en place d'un ensemble d'indicateurs synthétiques comme détaillés, permanents comme temporaires,
- Axe 10 : et le progrès permanent. Le référentiel conseille la certification aux normes ISO environnementales. Ces performances sont mesurées grâce à une échelle de cotation allant de 0 à 3 (0 : en l'absence du minimum nécessaire à l'obtention du niveau 1 ; 1, 2 et 3 ; 3 étant le meilleur niveau).

A partir de ces éléments de caractérisation, les auditeurs de l'ASLOG analysent la situation de l'entreprise au sein de sa chaîne logistique et formulent un certain nombre de recommandations permettant une amélioration à venir.

d- Le référentiel EVALOG

Le référentiel EVALOG est proposé par un Groupement des industriels appelé « Groupement pour l'amélioration des liaisons dans l'industrie automobile » GALIA. Ce modèle a été développé par les constructeurs et les équipementiers de l'automobile. C'est un guide d'évaluation commun aux fournisseurs et aux clients du secteur, mais peut être utilisé dans d'autres industries. Son objectif consiste à identifier les domaines où les entreprises ont à s'améliorer pour fiabiliser leurs flux physiques et logistiques. Il axe son analyse sur six thématiques dont quatre sont de type processus : relation client, relation fournisseur, production et développement du produit et deux sont des axes d'étude concernant la stratégie de l'entreprise et son organisation. Il s'agit d'évaluer de façon binaire (0 pas mise en place, 1 mise en place) une soixantaine de pratiques. La dernière version du référentiel propose quelques recommandations liées à la responsabilité sociale s'inscrivant dans six axes :

- Stratégie et amélioration : le référentiel recommande d'intégrer le processus logistique dans la stratégie de l'entreprise en y incorporant objectifs, analyses et plans d'actions.
- Organisation du travail : le référentiel préconise la maîtrise et l'amélioration des conditions de travail.
- Capacité et planning de production : cet axe permet de comparer les ressources d'une entreprise avec les besoins de ses clients et notamment le lien avec le développement des produits.
- Interfaces clients : Sont évoquées la gestion des emballages, notamment la quantité et le contrôle de celle-ci afin d'éviter les gaspillages ; de même que la politique de transport qui doit participer à la sauvegarde de l'environnement.
- Maîtrise des produits/processus : sont invoqués dans cet axe, la gestion de la traçabilité, la réduction des produits en fin de vie et la gestion des produits défectueux/obsolètes.
- Interface fournisseurs : dans ce processus les problématiques d'emballage sont abordés, le modèle recommande « des emballages appropriés garantissant [...] le respect de l'environnement » et les problématiques de transport qui doivent être « basées sur les problèmes d'environnement ».

Estampe et al. (2013) ont analysé les différences entre ces modèles et ont proposé une grille pour aider le manager à choisir le modèle le plus approprié à ses besoins pour évaluer sa performance. Ces différents modèles cherchent à évaluer la performance de la chaîne logistique d'une organisation et non pas la performance de l'ensemble de la SC des différents maillons de cette chaîne. Toutefois, Gunasekaran et al. (2004) et Hult et al. (2004)

proposent des listes d'indicateurs utiles pour évaluer la performance de la chaîne logistique dont l'objectif est de proposer aux acteurs de l'entreprise des « bonnes pratiques » auxquelles se référer. Mais ces travaux autour des indicateurs de performance peuvent également aller jusqu'à l'évaluation de performance.

Pour évaluer le fonctionnement d'une S.C, trois dimensions sont, à notre sens, essentielles à prendre en compte : le délai, la qualité et le coût (Hult et al., 2004). Ainsi que, la performance logistique est mesurée par la fiabilité des livraisons, la réduction des coûts, des délais, la conformité aux spécifications des clients, l'amélioration des processus et le time to market (autrement dit le délai de mise sur le marché de nouveaux produits).

Conclusion

D'où provient la performance logistique ? C'est la question à laquelle cet article tente de répondre. En effet, la performance est un concept complexe et multidimensionnel qui intègre différentes dimensions pour la définir et différents indicateurs de mesure car elle reste une affaire de perception et tous les acteurs n'ont pas la même perception de la performance. Elle est, par ailleurs, relative à la vision de l'entreprise, sa stratégie et ses objectifs. C'est dans ce sens que la performance d'une entreprise peut se mesurer sous différents angles et ne se limite pas uniquement à sa dimension financière. Ainsi pour l'évaluer, il est nécessaire d'effectuer des mesures au niveau de toutes ses dimensions et s'appuyer sur ses facteurs déterminants pour l'améliorer.

Par ailleurs, la logistique compte de nos jours parmi les leviers déterminants du devenir des organisations car sa performance influence significativement la performance globale des entreprises et leurs compétitivités. Pour s'en servir judicieusement pour cette fin, il est primordial de pouvoir la cerner dans ses différents aspects et s'en approprier notamment les sources génératrices de la performance logistique.

Pour conclure, après une large revue de la littérature sur la performance logistique et ses indicateurs de mesure, la fiabilité des livraisons, la réduction des coûts, des délais, la conformité aux spécifications des clients, l'amélioration des processus et le time to market sont les principaux éléments à prendre en considération pour arriver à une logistique performante, ils peuvent être regroupé en trois facteurs notamment le délai, la qualité et le coût.

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The Impact of a Health-run on Remittances and Financial Inclusion

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Abstract

The study examines the impact of health runs or crises on financial remittances and inclusion. Data were collected through a survey questionnaire administered to a sample of 60 respondents made up of financial services employees and users of financial services, irrespective of their age and years of trade experience. Results show that remittances and financial inclusion levels should be affected adversely due to the coronavirus (COVID-19) health run. The magnitude of the negative effect of a health crisis on financial remittances and inclusion as measured by the correlation matrix is strong, but comparatively the same for the assessed variables. Our findings reveal that a severe global health crisis would force an exponential decline in remittances and financial inclusion. Findings further reveal that there exists no relationship between financial remittances and financial inclusion under a health crisis. The study here recommends measures policymakers can use to boost financial flows and inclusion during a period of a severe global health crisis.

Keywords : Financial Inclusion, Financial Institutions, Financial Sector, Health-run, Remittances, Users of Financial Services

1. Introduction

The effects of either health or financial crisis on businesses, economic sectors, and the financial system might be broad to handle here, but the specific effect of a global run-on health on financial flows and inclusion needs to be given the distinct attention it deserves. This is worthy of consideration, especially at a time like this when there are mounting concerns of how risk-exposed all economic sectors are as a result of the Coronavirus (COVID-19) pandemic. Not limiting to that, crisis-prone areas are likely to have stringent financial and monetary policies to overcome the adverse effects. This statement agrees with the study of Bech, Gambacorta, and Kharroubi (2012), indicating that monetary policy is less effective in a financial crisis; while Antohi and Cojocaru (2015) posit that each country or state confronts itself with different situations in the health issue. If this could be experienced during a financial crisis, then, it is likely to be experienced during a global health crisis. This implies that a more burden on stricter financial and monetary policies is required during a global health crisis. These policies in a way could impact financial flows and inclusion within the local and the international banking systems. Further, a health crisis causes shocks to the economy and equally slows down household and business activities in the affected areas. This could further have ripple effects on remittances and financial inclusion at the level of commercial banks and banking firms. In case remittances and financial inclusion are affected by a health crisis and of what impact could it? In case of any effect commercial banks, monetary authorities, and policymakers need to overcome the impact by making appropriate policies and the financial industry resilient to withstand business and economic shocks emanating from a run-on health. Remittances in this study include both inbound and outbound fund transfers. Inbound remittances include local fund transfer of the same currency, in the same country and monetary zone. On the other hand, outbound remittances include international fund transfers requiring the exchange of a local currency with a foreign currency in a different country and monetary zone. On its part, financial inclusion goes beyond having bank branches to getting households and businesses to open accounts with commercial banks and other financial institutions. Ficawoyi, Gyan and Hem (2020) investigated the relationship between remittances and financial development and found a significant positive long-run relationship. Attached to financial development is financial inclusion, financial institutions (with commercial banks being central in them), households and businesses (Johnson, 2020), and all these are affected by economic and environmental shocks. Health crises in a way represent a form of environmental shock that can affect both remittances and financial inclusion. The attention of this study is on commercial banks, financial services employees, and business owners or workers as users of financial services, since they form the pool of respondents

to the study's questionnaire. This study, therefore, examines the impact of a run-on health on financial remittances and inclusion at the level of commercial banks.

1.1 Structure of the Study

The study whose main objective is to assess the implications of a health run on remittances and financial inclusion is structured as follows: the introduction is immediately followed by a review of existing and relevant literature on the Coronavirus outbreak and remittance as well as financial inclusion concepts. The third section plays host to the methodology that was employed to carry out this study. The results are discussed in the fourth section, while the conclusion and recommendation are contained in the fifth and last section of the study.

2. Literature Review

This section covers details on the health crisis in particular the Coronavirus (COVID – 19) outbreak and the concept of remittance and financial inclusion.

2.1. Health Crisis and the Coronavirus (COVID-19) Outbreak

Health is defined by The World Health Organisation (WHO) as the state of physical, mental, and psychological well being of a person. A health crisis such as the ongoing COVID-19 which the WHO classified as a global pandemic in March 2020 has touched not just the physical and the psychological wellbeing of individuals, but also businesses and economies of nations of the world. There exists a long history of health crises documented in health economics textbooks and research articles for readers' consumption. In this study, our interest is on the link between health run and financial flows and inclusion assessment. The advent of the COVID-19 pandemic has changed how individuals, businesses, and economies live, operate, and function daily. Just these shifts in behavioural patterns of economic sectors could further lead to serious changes not just in the economy, but also in financial and banking need factors such as financial remittances and inclusion of household and business units in the banking sector during periods of a health crisis.

The COVID-19 pandemic and related adverse confidence effects are having severe negative impacts on global economic activity and pose an imminent threat to financial stability, emerging market and developing economies (EMDEs) are facing a sharp sudden stop in capital inflows, with the attendant high risk of currency crises, remarked Harjes et al (n.d.) in their work titled Monetary and Financial Policy Responses for Emerging Market and Developing Economies that offers an overview of appropriate central bank

policy responses to the severe economic and financial impact of the Covid-19 pandemic. They further affirm that the COVID-19 outbreak is a health shock that is exogenous to the economy and the financial system. According to them, countries will need to deal with domestic disruptions, increased health spending, and other wide-ranging aspects of the shock. These actions will only expose the validity of a health crisis.

2.2. Remittances and Financial Inclusion

Financial and banking services go beyond remittances and financial inclusion to include the safe keeping of values, processing payments, offering investment advice and loans to clients. It is an open and affirmed fact that not all economic sectors can process banking transactions if there are no bank accounts accessible (Nso, 2019). Thus, financial inclusion is paramount with or without a health crisis. On the other hand, while there exist non-banking account means of having remittances processed, prudential and compliant banking requirements encourage banking institutions and financial houses to process payments with bank accounts accessed to minimise transaction, operations, and business risks and costs. Consequently, during a global crisis such as the COVID-19 pandemic where banks, households, businesses, and economic sectors are exposed to all sorts of risks and costs, the level of remittances is likely to be impacted.

Remittance represents the financial flows from and within the banking institutions. Remittance represents a vital economic lifeline for both struggling and non-struggling households and businesses. These remittances improve living standards in countless ways and help to make vulnerable communities resilient to shocks like economic downturns, natural and man-made disasters (Thompson, 2014). Remittances serve as social insurance against political, economic, and health crises and a kind of livelihood diversification plan to all beneficiaries.

Financial inclusion is the availability and equal opportunity to access financial services in the banking sector. Nashipu et al (2020) agree that financial inclusion is important in reducing inequality of opportunities among households. In a similar study, Demirguc-Kunt et al (2008) affirms the wide acceptance of financial inclusion as a pro-growth tool and its important role in reducing poverty globally. Financial inclusion comprises affordable access to financial services, availability and sharing of financial information, availability of banking offices and branches and access to loans. The end and inclusive aspect of financial inclusion is that the potential user of financial services acquired and consumed the services offered by banks and financial institutions, of which remittances are important services offered by them. Thus, a person is financially inclusive when he or she consumes the services offered by a financial services provider, firm, company, or bank.

As observed in the aforementioned deliberations, it is imperative to assess the possible association between remittance and financial inclusion under the condition of a prevalent global health crisis. This is important because, under normal economic, environmental, business and health conditions, one would at least expect remittances to be driven by financial inclusion.

3. Methodology for the Study

This section explains the research design, sampling technique, the framework for the study, the research tools and the data analysis methods used for the study in order to come out with the study results.

3.1. Research Design

The study employed both qualitative and quantitative research approaches. In the qualitative aspect, questionnaires were used to collect the much-needed primary data to complement the quantitative data to test the hypotheses inferentially. The quantitative research technique was used in analysing the research data collected on the variables under examination. A quantitative research technique is being used to assess the objective of the study.

3.2. Sampling Technique

Three sampling techniques were employed to collect data for this study. They include: stratified, purposive, and random sampling techniques. A stratified sampling technique was used to first classify respondents into two major classes. The two major classes are the financial sector employees (commercial banks employees) irrespective of sex, age, and working experience, and users of financial services such as business people, owners and/or workers; made up of both females and males, irrespective of age and years of business experience.

Secondly, purposive sampling was conveniently applied on each stratum to ensure that the final respondents have a basic understanding of the variables under assessment. This helped to ensure objectivity in the opinions of the final respondents. The variables under assessment included: run on health (health crisis), financial remittances, and financial inclusion.

Then, finally, a random sampling technique was applied to select the final respondents arbitrarily to respond to the study's questionnaires. This further helped to minimise and avoid bias in the opinions of the respondents.

Employing these sampling techniques was not easy to go by, as the attention of all the respondents in the strata were in high demand and potential respondents whose attention could not be assured were left out of the final sample that provided their responses to the questions. However, the techniques are worthy of consideration as they ensured that only the knowledgeable,

convenient and most willing respondents submitted their responses for examination in the study. This means that the final data obtained from the respondents could be viewed as reliable and worthy of trust to meet and satisfy the objective of the study.

Based on Field (2013), Hosmer, Lemeshow, and Sturdivant (2013), and Leblanc and Fitzgerald (2000), the sample size of 60 respondents suffices for the study and it satisfies the recommended basic requirement for such a study. Field (2013) states that larger samples are needed for linear regression because maximum coefficients with a minimum of 50 cases per predictor are recommended. On their part, Hosmer, Lemeshow, and Sturdivant (2013) suggest a minimum sample of 10 observations per independent variable in the model, but caution that 20 observations per variable should be sought if possible. In contrast, Leblanc and Fitzgerald (2000) suggest a minimum of 30 observations per independent variable.

3.3. Research Framework Used for the Study

The study identified three (3) key variables for examining the impact of a health crisis on remittances and financial inclusion. The variables under study included: Run-on-Health, Remittances, and Financial Inclusion. Health-run produced two outcomes; a Yes or a No. This dichotomous character of the data collected legitimated the health-run variable to be best considered as the dependent variable under the binary logistic regression technique. Applying the same technique for evaluation; Remittance and Financial Inclusion not being measured by a nominal scale, best suited the independent variables to set up a binary logistic regression equation framework for the data analysis process.

This means that a connecting relationship between health-run, remittances, and financial inclusion could be expressed using the direct and indirect effect model.

The direct effect model is defined by:

$$\text{AHR} = f(\text{RT}, \text{FI}) \quad (1)$$

Where;

AHR is A Run on Health, RT is Remittances and FI is Financial Inclusion. The above equation (1) shows the direct connecting relationships between a Run on Health, Remittances and Financial Inclusion.

The indirect effect model is defined by:

$$\text{AHR} = f(\text{RT}, (\text{FI})) \quad (2)$$

This equation (2) shows that remittances are not only directly affected by run-on health, but also by financial inclusion.

Typically, the binomial logistic regression research equation is given by;

$$\log(p/1-p) = b_0 + b_1 \cdot x_1 + b_2 \cdot x_2$$

where p is the probability of being in honours composition, expressed in terms of the independent variables. The b_s are the values for the logistic regression equation for predicting the dependent variable from the independent variables. They are in log-odds units. Similar to OLS regression as shown in the prediction equation.

By substituting the variables under study in the typical binomial logistic equation, the direct effect econometric model is expressed as:

$$ARH = b_0 + b_1 \times RT + b_2 \times FI \quad (3)$$

and the indirect effect econometric model is expressed as:

$$ARH = b_0 + b_1 \times RT(b_2 \times FI) \quad (4)$$

$$ARH = RT(FI) \quad (5)$$

This indirect effect econometric model could best be assessed using a correlation coefficient technique arranged in a matrix with ARH (A Run on Health) as the constant.

3.4. Research Technique Tool Used for the Study

The study made use of binary logistics techniques in analysing the research data between the dependent variable and the two independent variables for the examination of the direct effect. In addition, a correlation matrix technique was used to evaluate the indirect effect within the variables in the study.

Logistic regression is used to determine the impact of multiple independent variables presented simultaneously to predict the membership of one or the other of the two dependent variable categories. The binary logistic regression also provides the relationships and strengths among the variables. Logistic regression does not assume a linear relationship between the dependent and independent variables. Meanwhile, correlation coefficients range from -1 to 1; with -1 indicating a perfectly negative linear correlation between two variables, 0 indicating no linear correlation between two variables, and 1 indicating a perfect positive linear correlation between two variables.

3.5. Data Analysis

The research data were coded and data entry recorded in IBM SPSS 24 for data analysis Burns & Burns (2008). The analysed outputs were obtained and presented for interpretation.

George and Mallery (2003) classify Cronbach's alpha reliability coefficient as; $> .9$ excellent, $> .8$ good, $> .7$ acceptable, $> .6$ questionable, $> .5$ poor and $< .5$ unacceptable. In general, Cronbach's alpha reliability coefficient normally ranges between 0 and 1, and the closer the coefficient is to 1.0, the greater the internal consistency of the items (variables) in the scale. Hurland (1999) and Cronbach (1951) recommend construct reliability score of at least

0.7 to ensure that items in a construct are reliable and are internally consistent without error in measurement and evaluation.

For the test of validity, a bivariate Pearson correlation generates a score ranging between -1 and 1 and a 2-tailed test is used to generate a p-value which is compared to know if it is less than the critical p-value of 0.05 for a correlation score that is significant. Carmines and Zeller (1979) state that convergent validity is the degree of agreement between two or more indicators of the same construct. Convergent validity measures the extent to which a set of items on a questionnaire reflect the theoretical unobserved construct they are designed to measure. Convergent validity occurs if all the assessed factors loadings are greater than 0.05.

Skewness and kurtosis were used to test the distribution normality. Byrne (2013) recommends that normally distributed data if skewness for the various items ranges between -2 to 2, while kurtosis score ranges between -7 and 7. On the same subject, Bentler (1990) suggests a more stringent criterion of 1.96 for both skewness and kurtosis.

In logistic regression, hypotheses are of interest: the null hypothesis, which is when all the coefficients in the regression equation take the value zero, and the alternate hypothesis, which is when the model currently under consideration is accurate and differs significantly from the null or zero, i.e. gives significantly better than the chance or random prediction level of the null hypothesis (UCLA - Institute for Digital Research and Education Statistical Consulting, 2021). Logistic regression does not assume a linear relationship between the dependent and independent variables. On the other hand, to assess the indirect effect within the variables, a correlation technique was used. Correlation coefficients range from -1 to 1; with -1 indicating a perfectly negative linear correlation between two variables, 0 indicating no linear correlation between two variables, and 1 indicating a perfect positive linear correlation between two variables.

4. Results

The study results consist of the descriptive and inferential aspects of the study.

4.1. Descriptive Results

i) Respondents' Background

The survey sample consisted of 60 respondents. The profile of the respondents included people with knowledge on what a health crisis is and banking services. They were selected from a group of financial services employees (banks employees) and financial services users such as business operators and family members as shown in table 1 below. Our choice of respondents helped to minimise bias and ensure the reliability of the data collected.

Table 1: Respondents' Background

Respondents' Background	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Financial Sector employee	30	50.0	50.0	50.0
User of Financial Services	30	50.0	50.0	100.0
Total	60	100.0	100.0	

ii) Prevalence of a Health Crisis

Of the 60 respondents who submitted their responses to the question **'Does the outbreak of the coronavirus (COVID-19) disease cause a (run-on) health crisis?'** 71.7% of them believed that the outbreak of the coronavirus (COVID -19) disease has caused a run-on health to be termed a health crisis as shown in table 2 that follows.

Table 2: Prevalence of a Health Crisis

Prevalence of a health Crisis	Frequency	Percentage	Valid Percentage	Cumulative Percentage
Yes	43	71.7	71.7	71.7
No	17	28.3	28.3	100.0
Total	60	100.0	100.0	

iii) Reliability Test

The measuring reliability test in table 3 below shows that the data collected for the variable Run-on Health is statistically reliable. This is important in that it reaffirms that the 71.7% of the respondents who indicated that the current run-on health is sufficient to be termed a health crisis is statistically reliable to prompt the continuation of the study. Though the negative Cronbach's Alpha for the other variables do violate the reliability model assumption. It is still good to proceed with the study to test its hypotheses. The negative value is a result of the presence of a negative average covariance among items (variables).

Table 3: Cronbach's Alpha Test for measuring Reliability

Variables	Cronbach's Alpha
Run-on Health	.967
Remittances	-2.474
Financial Inclusion	-2.896

iv) Bivariate test for Validity

Based on the results of the bivariate test for the validity of variables under examination shown on table 4 below, it is evident that all the variables are distributive, convergent, and constructively valid. This means that the method of measurement (binary logistics) matches the construct equation under examination.

Table 4: Bivariate Test for Validity of Variables under examination

Variables under examination		RunonHealth	Remittances	Financial Inclusion
Run-on Health	Pearson Correlation	1	-.859**	-.853**
	Sig. (2-tailed)		.000	.000
	N	60	60	60
Remittances	Pearson Correlation	-.859**	1	.939**
	Sig. (2-tailed)	.000		.000
	N	60	60	60
Financial Inclusion	Pearson Correlation	-.853**	.939**	1
	Sig. (2-tailed)	.000	.000	
	N	60	60	60

** . Correlation is significant at the 0.01 level (2-tailed).

v) Test for Distribution Normality

Based on the normality test in table 5 below, results show that all the variables in the model equation are normally distributed.

Table 5: Test for Distribution Normality

Variables	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
Run-on Health	.986	.309	-1.063	.608
Remittances	-1.005	.309	.287	.608
Financial Inclusion	-.744	.309	-.465	.608
FSUFS	.000	.309	-2.070	.608
Valid N (listwise)				

4.2. Inferential Results

4.2.1 The Direct Effect Results

The direct effect econometric model expressed as $ARH = b_0 + b_1xRT + b_2xFI$ was assessed using a binary logistic and the results of the analysis are shown in tables 6 and 10.

With the Wald chi-square to test the appropriateness of the experienced run-on health to qualify it as a health crisis or not. In case of no crisis (the null hypothesis), the constant will be equal to 0. This hypothesis is rejected because the p-value .001 is smaller than the critical p-value of .05. It is concluded that the constant is not 0. Hence, the 71.7% of respondents who affirmed the current run-on health to be termed a health crisis are just. Although this finding

is not usually interesting to researchers, in this study, it is important to qualify that the run-on health is appropriately termed a health crisis and this is the case with the Coronavirus (COVID-19) disease which has been termed a global health crisis or pandemic by The World Health Organisation (WHO).

Table 6: Test for Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 0 Constant	-.928	.286	10.492	1	.001	.395

The overall Model coefficients are statistically significant as shown on table 7 with p-values of .000 less than the critical p-value of .05.

Table 7: Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step 1 Step	67.030	2	.000
Block	67.030	2	.000
Model	67.030	2	.000

According to the Cox & Snell R Square and Nagelkerke R Square on table 8 with both results being greater than 0.5 critical value, the model is statistically significant (or good) for a binary logistic analysis to examine the variables under study.

Table 8: Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	4.499 ^a	.673	.966

a. Estimation terminated at iteration number 20 because maximum iterations have been reached. Final solution cannot be found.

The Hosmer and Lemeshow test on table 9 shows that the binary logistic model deployed for this study passed the goodness of fit test. This means that the constructed model is suitable for the study to apply binary logistic analysis.

Table 9: Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	.000	5	1.000

On the results of the direct effect, reading from table 10 on the variables in the Equation, the logistics regression equation is given as:

$$\text{Log}(p/1-p) = 108.092 - 19.275 * \text{Remittances} - 16.389 * \text{FinancialInclusion} \quad (6)$$

But in the full model analysis output shown in the appendix section, $p = 98.3\%$ It means;

$$\text{Log}(p/1-p) = \log (0.983/1-0.983) = \log (0.983/0.017) = \log 57.8235$$

Thus, the logistics equation becomes;

$$\text{Log } 57.8235 = 108.092 - 19.275*\text{Remittances} - 16.389*\text{FinancialInclusion} \quad (7)$$

$$\text{But } \log 57.8235 = \text{RunonHealth}$$

Thus,

The impact of a run-on health (iRunonHealth) on remittances and financial inclusion is given by the equation;

$$i\text{RunonHealth} = 108.092 - 19.275*\text{Remittances} - 16.389*\text{FinancialInclusion} \quad (8)$$

The negative sign (-) in the coefficients of Remittances and Financial Inclusion, it indicates that a run-on health (health crisis) negatively impacts financial remittances and financial inclusion at the level of banks and financial institutions. This means that a prolonged health crisis will reduce financial flows and financial inclusion; thus, keeping remittances and financial inclusion levels low in periods of health crisis. On the other hand, an end or reduction or improvement in a health crisis would rejuvenate financial remittances and financial inclusion at the level of banks. This action would gradually cause remittances and financial inclusion to rise back to their original levels before the crisis began, assuming all other factors are constant. But the coefficients of the independent variables (remittance and financial inclusion) are not statistically significant with respective Wald chi-square of .000 and .000, and corresponding significance p-value of .996 and .996, with both being greater than the critical p-value of 0.05. This means that those coefficients (-19.275 and -16.389) are as good as 0 (zero) in interpreting the results. In essence, the equation $i\text{RunonHealth} = 108.092 - 19.275*\text{Remittances} - 16.389*\text{FinancialInclusion}$ is not statistically significant and does not certainly exist in reality, but only a theoretical construct of a possible relationship between the impact of a health crisis on financial remittances and financial inclusion at the level of financial institutions.

The variables' (remittances and financial inclusion) odd ratios are statistically significant at a 95% confidence interval (C.I). Though the independent variables' odd ratios are statistically significant, their exponential scores are 0.000 and 0.000, respectively. This implies that considering all other factors are held constant, an increase or decrease in the level of remittances and financial inclusion by one unit would not signify a weakening or severity in the health crisis. Thus, policymakers should be driven to manage to avert or put an end to a health crisis based on the effects of a health crisis on humans being lifestyle of; hindrance on peaceful living together, social cohesion, physical, mental, economic, social welfare, and psychological wellbeing and to promote a stable environment and economy. Of course, in a

stable and healthy environment, businesses are sure to flourish, and this could mean a lot to financial flows and inclusion, but cautiously speaking, business-driven motives (measured in terms of remittances and financial inclusion) to overhaul a crisis look challenging. This is because a crisis by nature is uncertain, and in an uncertain market, people would be trying to take situational advantage. In such a situation, only the smart wins, and anyone can outsmart the king winner because market discipline and ethical deals monitoring, control, and reporting are challenging. This is confirmed by the value of the constant term which ironically refers to the run-on health variable with an exponential score of 8.783E+046, indicating that severe run-on health will spark uncertainty in the levels of remittances and financial inclusion; thus, affecting them exponentially negatively. The full output of the logistic regression analysis is shown in the appendix section.

Table 10: Variables in the Equation of the Direct Effect Results

	B	S.E.	Wald	d f	Sig.	Exp(B)	95% C.I. for	
							EXP(B)	
							Lower	Upper
Step 1 ^a	Remittances	-19.275	3613.735	.000	1	.996	.000	.
	FinancialInclusion	-16.389	3620.974	.000	1	.996	.000	.
	Constant	108.092	15347.138	.000	1	.994	8.783E+046	.

a. Variable(s) entered on step 1: Remittances, FinancialInclusion.

4.2.2. The Indirect Effect Results

The indirect effect between the independent variables was assessed using a correlation coefficient technique and the result obtained is displayed in a correlation matrix in table 11. Correlation scores run from -1 to 1 through 0, with -1 indicating a perfectly negative linear correlation between two variables, 0 indicates no linear correlation between two variables and 1 indicates a perfect positive linear correlation between two variables. Table 11 shows the correlation between variables in the equation; ARH = RT(FI); with ARH (a run-on health as the constant term). The results show that;

- i. Remittances are negatively affected by a run-on health with a correlation coefficient score of -.706 between remittances and the constant term.
- ii. Financial inclusion is negatively affected by a run-on health with a correlation coefficient score of -.708 between remittances and the constant term.
- iii. The magnitude of the impact of health run-on remittance (-.706) and on financial inclusion (-.708) is strong and relatively almost the same for remittances and financial inclusion.

- iv. Remittances and Financial inclusion are not linearly correlated with each other during a run-on health. This is evident by the correlation coefficient score of .000 between the two variables. Thus, the hypothesis that under a health-run, the level of remittance is dependent on the level of financial inclusion is rejected.

Table 11: Correlation Matrix Showing the Indirect Effect Results

		Constant	Remittances	FinancialInclusion
Step 1	Constant	1.000	-.706	-.708
	Remittances	-.706	1.000	.000
	FinancialInclusion	-.708	.000	1.000

5. Discussion of Results

The 71.7% of respondents with affirmation on the run-on health to be viewed as a health crisis exceeded the probability of obtaining the chi-square statistics (67.030%) which is significant in the omnibus tests of model coefficients. This further reaffirms the prevalence of a health crisis. And since the crisis was first reported in China before spreading to other parts of the world, it is obvious that the WHO could be right to have termed the crisis a global health crisis or pandemic, since the health crisis has exceeded territorial boundaries and spread within many nations.

Considering that the magnitude of the impact of the health crisis could be strong on remittances and financial inclusion, coupled with the fact that during a health crisis, remittance volume does not depend on financial inclusion, financial and monetary policymakers would need to relax and cautiously apply appropriate measures that would smoothen financial flows and financial inclusion to stabilise the banking system during the period of health, environmental and economic shocks. The general tendency is that during global uncertainty and shocks, businesses would try to be conservative in their spending, thus reducing the possibility of boosting financial remittances. On the other hand, with no spending-driven motives, coupled with market uncertainty, businesses would have justified reasons to be financially exclusive. Meanwhile, attributing a rise or a fall in the level of remittances and financial inclusion to a health crisis is subjective.

In this scenario, the monetary and financial policy could help reduce the effect. A prudential relaxation can serve as a useful balance to a monetary policy response. It can enhance the ability of monetary policy to support economic activity in a manner that is consistent within its mandate, by removing regulatory constraints that may otherwise impede financial transmission and inclusion. In countries that need to tighten monetary policy (e.g., to limit the inflationary effects of an exchange rate depreciation), a

simultaneous relaxation of prudential policy can help reduce potential stresses from the domestic tightening of capital flows.

In a resurgence crisis, temporary use of Capital Flow Management Measures (CFMMs) can help prevent a free fall of the exchange rate and provide conscious space while necessary policy adjustments are employed (Harjes et al, n.d.). Mitigating exchange rate burdens and giving central banks more scope to ease or tighten less policy can enhance monetary policy effectiveness which is ineffective during a crisis. Where capital inflows are restricted, their careful relaxation can mitigate net outflow obligations requiring liberalization approval to be ascertained. CFMMs cannot substitute for or avoid warranted adjustment. CFMMs on outflows should generally be broad-based to be effective, and they may require restrictions on some remittance types. According to Nso (2018), the use of technology to perform electronic payments, operations and transactions can help bypass restrictions. Restrictions should be transparently implanted, implemented, and lifted once crisis conditions improve. In handling restrictions, preferential treatment and guidelines could be given to those that do not discriminate on financial remittance placements and financial inclusiveness. A soft requirement would be to close discriminatory restrictions to promote ethically disciplined market environments and provide equal opportunities for all participants in the market.

Conclusion

The non-interdependence between remittances and financial inclusion during a health crisis suggests that financial authorities and policymakers might have to by-pass tough challenges to influence the level of remittances. Implementing an aggressive financial inclusion policy during a global health pandemic and a conservative and relaxed monetary policy that stabilises remittances at the level of the banking systems would help reduce the magnitude of the impact of a health crisis on businesses. Through proactive and passive actions, any potential impact of a health crisis on remittances and financial inclusion is greatly reduced and progressively ended. This study is limited in that it should have made use of real secondary data on remittance numbers, volumes, and financial inclusion numbers collected from banks or financial institutions during the period of the pandemic.

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**Appendix: Output of Logistic Regression
 Logistic Regression
 Case Processing Summary**

Unweighted Cases ^a		N	Percent
Included in Analysis		60	100.0
Selected Cases	Missing Cases	0	.0
	Total	60	100.0
Unselected Cases		0	.0
Total		60	100.0

a. If weight is in effect, see the classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Yes	0
No	1

**Block 0: Beginning Block
 Classification Table^{a,b}**

Observed			Predicted		
			RunonHealth		Percentage Correct
			Yes	No	
Step 0	RunonHealth	Yes	43	0	100.0
		No	17	0	.0
Overall Percentage					71.7

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.928	.286	10.492	1	.001	.395

Variables not in the Equation

		Score	df	Sig.
Remittances		44.248	1	.000

Step 0	Variable	FinancialInclusion	43.650	1	.000
		Overall Statistics	45.358	2	.000

**Block 1: Method = Enter
 Omnibus Tests of Model Coefficients**

		Chi-square	df	Sig.
Step 1	Step	67.030	2	.000
	Block	67.030	2	.000
	Model	67.030	2	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	4.499 ^a	.673	.966

a. Estimation terminated at iteration number 20 because maximum iterations has been reached. Final solution cannot be found.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	.000	5	1.000

Contingency Table for Hosmer and Lemeshow Test

		RunonHealth = Yes		RunonHealth = No		Total
		Observed	Expected	Observed	Expected	
Step 1	1	8	8.000	0	.000	8
	2	2	2.000	0	.000	2
	3	26	26.000	0	.000	26
	4	6	6.000	0	.000	6
	5	1	1.000	6	6.000	7
	6	0	.000	3	3.000	3
	7	0	.000	8	8.000	8

Classification Table^a

Observed			Predicted		
			RunonHealth		Percentage Correct
			Yes	No	
Step 1	RunonHealth	Yes	42	1	97.7
		No	0	17	100.0
Overall Percentage					98.3

a. The cut value is .500

Table 12: Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
							Lower	Upper
Step 1 ^a	Remittances	-19.275	3613.735	.000	1	.996	.000	.
	FinancialInclusion	-16.389	3620.974	.000	1	.996	.000	.
	Constant	108.092	15347.138	.000	1	.994	8.783E+046	

a. Variable(s) entered on step 1: Remittances, FinancialInclusion.

Correlation Matrix

	Constant	Remittances	FinancialInclusion
Step 1	Constant	1.000	-.706
	Remittances	-.706	1.000
	FinancialInclusion	-.708	.000

End.

Analyse du Contexte Politique et Socio-Economiques et des Differences Qu'il Peut Apporter au Marketing Politique en Tant Que Concept Theorique : Maroc - Legislatives 2016

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Résumé

En dépit de l'attention qu'a reçue le marketing politique et des progrès conceptuels et empiriques qui ont été accomplis, les chercheurs reconnaissent souvent les différences et les difficultés de conceptualisation et d'opérationnalisation de ce construit. L'action politique est un événement contextuel et est le résultat de nombreuses influences. À travers des recherches documentaires et des entretiens semi-directifs avec des observateurs-experts (journalistes et académiciens) en matière de la chose politique, cette contribution a essayé de voir si le marketing politique présente des caractéristiques similaires dans des contextes politique et socio-économique différents. Nous soutenons l'idée d'une prise en considération plus explicite des facteurs contextuels dans la dynamique des actions marketing des partis politiques au Maroc. La présente contribution est le résultat d'une étude de contextualisation de notre travail de recherche sur le marketing politique et la performance électorale. Un contexte délimité en l'année législative 2016.

Mots-clés: Contexte, législatives 2016, Marketing Politique, Marketing Stratégique Maroc

Analysis of Political and Socio-Economic Context and the Influence it Can Bring to Political Marketing as a Theoretical Concept: Morocco - Parliamentary Elections 2016

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Abstract

Despite the attention that political marketing has received and the conceptual and empirical advances that have been made, researchers still face difficulties in conceptualizing and operationalizing the concept. Political action is a contextual event and is the result of many influences. Through a documentary research and semi-structured interviews with observers and experts (journalists and academics) in politics and marketing, this paper focuses on ascertaining if political marketing presents similar characteristics in different political and socio-economical contexts. The study also focused on a more explicit consideration of contextual factors in the marketing actions dynamics of political parties in Morocco. This contribution is the output of a contextualization study of our research on political marketing and electoral performance.

Keywords : Context, 2016 legislative elections, Morocco, Political Marketing, Strategic Marketing

Introduction

En dépit de l'attention qu'a reçue le marketing politique et des progrès conceptuels et empiriques qui ont été accomplis, les chercheurs reconnaissent souvent les différences et les difficultés de conceptualisation et d'opérationnalisation de ce construit.

Sur le plan pratique, l'ouverture du champ politique marocain et la montée du digital semblent bouleverser la communication dans le Royaume. Jusqu'aux années 2000, la communication politique était plutôt verticale, de haut en bas, et à sens unique. Cela signifie que la communication était émise, sous forme de communiqués ou de diffusion d'informations, sans tenir compte des spécificités des cibles, que ce soit au niveau de la forme ou du fond.

L'action politique, en tant que processus complexe, ne peut pas s'expliquer sans la prise en compte des interactions entre l'acteur politique et son environnement. L'action politique est un événement contextuel et est le

résultat de nombreuses influences. Ainsi une question importante peut être résumée par la formulation suivante : le marketing politique présente-t-il des caractéristiques similaires dans des contextes politique et socio-économique différents ?

Cette notion de « contexte », étroitement liée au paradigme compréhensif, a reçu beaucoup d'attention en sciences humaines et sociales. Toutefois, l'analyse qualitative et contextuelle des problématiques politiques semble être occultée par le quantitatif confirmatoire qui domine largement la recherche en sciences sociales.

Nous soutenons l'idée d'une prise en considération plus explicite des facteurs contextuels dans la dynamique des actions marketing des partis politiques au Maroc. La présente contribution explique pourquoi et en quoi les questions de contexte peuvent être pertinentes dans une recherche qualitative pour consolider le cadre d'analyse et d'interprétation des résultats.

Dans ce qui suit, nous présentons la démarche et les principaux résultats d'une étude de contextualisation, conduite dans le cadre de notre recherche, sur les pratiques du marketing des partis politiques au Maroc. L'objectif est donc de présenter les différents aspects qui caractérisent la fondation de notre design de recherche par l'intégration des considérations, non seulement épistémologiques, mais aussi contextuels qui justifient notre cadre théorico-conceptuel et nos choix méthodologiques.

1. De l'importance épistémologique du contexte

La diversité des paradigmes épistémologiques est un élément essentiel pour expliquer le caractère fragmenté et peu cumulatif des connaissances scientifiques dans les sciences sociales. Buchanan et Bryman (2007), considèrent que les recherches qualitatives et interprétatives semblent de plus en plus caractérisées par une « inventivité » méthodologique en ce qui concerne les démarches d'investigation empirique, de conceptualisation et de construction théorique.

L'utilisation des méthodes qualitatives assoit sa légitimité de la définition de l'objet de la recherche, en plus de la faculté que se donne le chercheur de laisser émerger ou advenir des significations autres que celles liées directement au focus. Or, les choix conceptuels et méthodologiques ne peuvent pas être présumés par le seul choix épistémologique (Guba & Lincoln, 1994), ou seulement par des considérations techniques et théoriques liées à l'objet de recherche (Buchanan & Bryman, 2007). Ces choix doivent être inscrits dans un système global de recherche où plusieurs facteurs (théorique, épistémologique, organisationnel, historique, éthique et personnel) sont combinés d'une manière cohérente dans la poursuite des objectifs particuliers dans un contexte donné. Dans ce sens, la démarche de contextualisation aide

à révéler l'influence du contexte sur la construction de l'objet de la recherche et sur la méthode d'approche.

Le concept de contextualisation s'inscrit dans le courant théorique de l'approche systémique ; plus précisément dans le prolongement du modèle des interactions en contexte (Bru, 1991 cité par Marcel, 2002). Elle insiste sur la nécessité d'étudier les comportements des acteurs dans le contexte de leur actualisation. Une définition générique du contexte est fournie par (Dey, 2001), qui le définit comme « *toute information susceptible d'être utilisée pour caractériser la situation d'un phénomène* ». Il désigne alors les circonstances accompagnant un phénomène et sa mise en relation avec des éléments constitutifs de son environnement. Plus précisément, le contexte traduit « *l'ensemble des circonstances qui accompagnent un évènement, il devient un élément incontournable des recherches de type qualitatif qui insistent sur le fait que les sujets ne sont pas réduits à des variables, mais sont considérés comme un tout* » (Pourtois & Desmet, 2004).

La contextualisation suppose que le travail du chercheur se situe sur le terrain réel des acteurs (Bronfenbrenner, 1977 cité par Parrini-Alemanno, 2007), qu'elle s'associe une validité de contexte (caractéristiques du contexte social et culturel des acteurs), et une validité phénoménologique (signification de la situation pour les acteurs).

Permettant de cadrer et de pré-objectiver les analyses du chercheur, la contextualisation devient alors un élément, à la fois épistémique et méthodologique, fondamental doté d'une importance particulière dans le paradigme compréhensif et les recherches de type qualitatif (Pourtois & Desmet, 2004).

Le contexte organisationnel renvoie méthodologiquement, à la recherche du cadre interprétatif commun à l'ensemble concerné par la recherche. Le contexte phénoménologique (Parrini-Alemanno, 2007) met la lumière sur la perception qu'ont les acteurs du milieu et de ses éléments. Dans ce sens, la pluralité des facettes du contexte offre une perspective méthodologique de traitement de l'information utile pour la compréhension de la réalité de la situation à étudier (Parrini-Alemanno, 2007). Dès lors, la signification et la contextualisation deviennent deux facettes du même processus témoignant de l'effort permanent des acteurs pour comprendre leur environnement, notamment dans les organisations.

Par la mise en exergue des dynamiques contextuelles en jeu, la démarche de contextualisation permet de (re)construire l'objet de la recherche et sa méthode d'approche et ainsi de favoriser l'émergence et le recadrage d'une situation pertinente pour le problème.

2. Méthode de conduite de la démarche de contextualisation

Les processus sociaux sont fondamentalement dynamiques et ne sont pas directement observables. Nous sommes donc contraints de recourir à de multiples collectes d'informations pour étudier ces processus. L'étude de contextualisation a été alors mise en œuvre à travers des recherches documentaires et des entretiens semi-directifs avec des observateurs-experts (journalistes et académiciens) en matière de la chose politique. Nous avons utilisé un guide d'entretien assez détaillé à travers lequel nous souhaitons cadrer leurs perceptions des leviers des orientations marketing des partis politiques marocains lors des campagnes électorales.

La démarche a été complétée par une analyse documentaire qui a été basée essentiellement sur les rapports publiés par des instances nationales et internationales. Cinq entretiens semi-directifs ont été menés avec différents journalistes et académiciens (cf. Tableau 1).

Il reste à répondre à la question difficile du nombre d'interviewés à retenir. Pour Hlady Rispal (2002), le choix du nombre d'interviewés dépend des concepts de saturation théorique, et de généralité de l'étendue.

La saturation théorique : est le moment à partir duquel l'apprentissage devient minime, Strauss et Corbin (1998) estiment que la saturation théorique est atteinte quand rien de consistant ou de nouveau n'émerge du terrain. Guillemette (2006) explique que le plus important est l'émergent-fit, qui consiste en une cohérence entre le jugement du chercheur et le fait que les données qui émergent du terrain ne font pas vraiment avancer l'analyse.

La généralité de l'étendue : ou la réplique de l'étendue. Yin (1994) explique que le nombre de cas dépend du degré de certitude souhaité par le chercheur. Il s'agit de répliquer le cas jusqu'à ce qu'aucun résultat nouveau n'apparaisse après l'analyse.

De manière générale, le choix du nombre des interviewés dépend des moyens du chercheur ainsi que de l'objet de la recherche, la saturation théorique se combine avec des raisons très pragmatiques de temps et de moyens (Strauss & Corbin, 2004).

Tableau 1. Liste des interviewés

<i>Interview 1</i> <i>OBSERVATEUR</i>	Blogueur / Journaliste	Hôtel Bistrot du Piétri/ Rabat	Face à Face/ Rabat	MP#1
<i>Interview 2</i> <i>OBSERVATEUR</i>	Rédacteur En chef d'un journal Partisan	Au siège du Journal/ Casablanca	Face à Face/ Casablanca	MP#2
<i>Interview 3</i> <i>OBSERVATEUR</i>	Professeur Chercheur (sciences juridique)	Café littéraire / Marrakech	Face à Face / Marrakech	MP#3
<i>Interview 4</i> <i>OBSERVATEUR</i>	<i>Journaliste -Hespress</i>	<i>Marrakech – à la marge du forum des nations unies des services public</i>	<i>Face à Face/ Marrakech</i>	<i>MP#4</i>
<i>Interview 5</i> <i>OBSERVATEUR</i>	Consultant en marketing	Café Starbucks / Casablanca	Face à Face/ Casablanca	MP#5

3. Déroulement de la recherche

C'est la première phase du terrain de la recherche, elle a débuté avec des entretiens d'observateurs du début avril à fin mai 2018. L'objectif de ces entretiens, et en plus de nous éclairer sur le contexte d'application du marketing politique, est de nous orienter sur la manière dont les partis s'organisent, en fonctions de leurs contextes respectifs, et de nous éclairer sur les performances comparées de ces partis.

Après avoir analysé et interprété les entretiens d'observateurs, nous avons arrêté la structure finale des entretiens individuels :

I. Contexte général des partis politiques

1. Pouvez-vous parler de votre vision générale de la scène politique au Maroc ?
 - Quelle est la raison de la baisse des partisans du parti ?
 - En ce qui concerne les partisans qui participent au travail politique, est-ce que les partis politiques possèdent, selon vous, une stratégie pour les attirer ? Y'a-t-il une catégorie spécifique ciblée ? Ou les partis orientent leurs discours à toutes les catégories de la société ?
2. Que pensez-vous des programmes électoraux de 2016 ?
 - Est-ce suffisant ?
 - Est-ce que les procédures suivies par les partis politiques dans la sélection des candidats les aident à choisir des candidats ayant de la popularité auprès des citoyens ?

II. Les moyens des partis politiques

- Les budgets alloués par les partis politiques dans la communication et le marketing politique sont-ils adéquats ?

III. Les élections de 2016

1. Quel est votre commentaire sur les élections de 2016 ?
 - Est-ce que les partis politiques, ont-ils utilisé professionnellement les réseaux sociaux et les sites web dans la campagne de 2016 ?
2. Selon vous, quels sont les obstacles qui empêchent les partis politiques de pratiquer un marketing politique professionnel ? Est-ce le manque de compétence ? le manque de budget ? Est-ce l'héritage conservateur qui empêche d'acquérir des nouvelles technologies ?

Regards d'ordre général

1. Si nous comparons le Maroc avec les pays développés tels que les États-Unis d'Amérique et les pays européens ?
2. Selon vous, quel est le parti politique le plus présent sur les réseaux sociaux ?
3. Selon votre propre expérience, comment définissez-vous le marketing politique ? est-il connecté avec les campagnes électorales ?

4. Le marketing politique au Maroc : des actions diversifiées et un caractère conjoncturel

4.1. Particularité du marketing politique au Maroc

Indissociable des techniques empruntées du marketing des entreprises, le marketing politique se définit comme le processus par lequel les candidats et les idées politiques sont dirigés vers les électeurs afin de satisfaire leurs besoins politiques et ainsi obtenir leur soutien pour le candidat et les idées en question (Shama 1975 cité par Makry 2020)

L'application du marketing traditionnel à la politique était justifiée par un certain nombre de similitudes des similarités de concepts (par exemple, consommateurs, segmentation du marché, mix marketing, image, fidélité à la marque, concept de produit et positionnement) et des similarités d'outils (par exemple, étude de marché, communication et publicité) (Egan, 1999 ; Kotler, 1975).

Les pratiques du marketing politique électoral des partis politiques au Maroc ont commencé à évoluer avec l'adoption du nouveau mode de scrutin basé sur les listes en 2002. En effet, après une ère de scrutin individuel basée sur une relation directe avec les citoyens et marquée par des campagnes de communication directe (porte-à-porte, affiches, journaux, etc.), c'est l'époque de l'usage de moyens sophistiqués de communication politique axés sur la variété des moyens de diffusion massive, principalement traversés par la télévision, l'Internet et la téléphonie mobile.

L'observation des campagnes électorales des différents partis lors des élections législatives 2016 montre que le marketing politique a fait son entrée sur la scène marocaine, pour le moins chez certains partis.

D'une manière générale, les politiciens utilisent divers moyens pour faire adhérer les citoyens à leurs programmes politiques ainsi qu'à leurs actions. Toutefois, le recours aux techniques marketing politique reste un phénomène relativement récent.

La communication politique électorale des partis n'a pas encore atteint le degré de professionnalisation requis. De ce fait, elle est plus proche de la propagande que du marketing politique qui met en avant la primauté de la demande (besoins des électeurs potentiels).

L'introduction des techniques de marketing requiert l'adoption d'une démarche globale de conception, de rationalisation et d'accomplissement de la communication politique moderne.

Toutefois, ces premiers constats doivent être nuancés par la prise en compte de certaines particularités juridico-institutionnelles, culturelle et historiques du contexte marocain qui ne permettent pas encore la réalisation des campagnes électorales marketées dans les conditions idéales définies par la science.

4.2. L'impact limité des pratiques du Marketing politique : le poids des freins socio-culturels

Pour comprendre le caractère conjoncturel de la communication de la plupart des partis, il faut tenir compte du contexte sociopolitique dans lequel elle est déployée. Ainsi, ce contexte est marqué par un bon nombre de facteurs, dont principalement le monopole qu'exerce l'Etat sur les médias officiels marocains, que la grande limitation des moyens financiers des partis politiques marocains, ou alors le faible intérêt que porte l'élite partisane à la professionnalisation de la communication.

La voix de l'électorat n'était pas intégrée en amont. Aujourd'hui, la voix de l'électorat se ressent avec force, et la multiplication des enquêtes du comportement électoral et des intentions de vote témoigne de cette importance.

Les élections ne sont plus la seule forme d'engagement politique chez les jeunes, et on assiste à une quasi-dépolitisation du citoyen aujourd'hui, à cause de l'érosion de la crédibilité des partis politiques et des institutions élues, ce qui donne au citoyen un jugement préalable sur la futilité de la pratique politique.

Deux facteurs principaux peuvent expliquer cette méfiance du citoyen marocain selon notre interviewé **MP#3** :

D'abord, les projets des partis politiques sont très identiques au niveau de la conformité des programmes et des discours, aussi bien dans les rencontres rhétoriques, dans le parlement par le biais des questions verbales, ou même dans les programmes de télévision. Auparavant, chaque parti possédait un langage spécifique qui le distingue des autres partis, et qui reflétait la vision du parti et son orientation politique, mais aujourd'hui le langage est le même et il n'y a plus de projets spéciaux. Le deuxième facteur est de nature quantitative et concerne le nombre des voix à obtenir. Les résultats ne sont plus falsifiés au niveau des urnes, mais les fraudes ont lieu en dehors de ces urnes, en achetant des votes et en faisant d'autres pratiques non démocratiques. **MP#3**.

Toutefois la situation diffère d'un parti à l'autre, on trouvera, à titre d'exemple, que le nombre des partisans du Parti de la Justice et du Développement (PJD) a augmenté, tandis que ceux de l'Union Socialiste des Forces Populaires (USFP) a diminué.

Selon nos observateurs, cette situation peut s'expliquer par le fait que Le PJD a bénéficié de toute cette situation caractérisée par le déclin de la démocratie interne. C'est un parti qui a montré des modèles très distincts dans sa démocratie interne et il était présent dans tous les quartiers, villes et villages du Maroc. Bien qu'il y eût un déclin dans les organisations parallèles, le PJD a étendu les ponts de coopération avec plusieurs de ses alliés, même s'ils apparaissent indépendants ; ce qui l'a encore aidé c'est l'usage d'un discours religieux dans une communauté religieuse conservatrice qui n'a jamais expérimenté le travail politique d'un parti islamique.

Donc au sein de cette ambiance caractérisée par le déclin de l'action politique, le PJD a réussi à réaliser du progrès, au contraire de la majorité des partis politiques marocains.

Bien que la communication politique de la plupart des partis politiques marocains ait connu une sophistication de contenu et de forme, plusieurs problèmes de taille empêchent sa perception positive et son efficacité. Plusieurs facteurs peuvent expliquer ce faible impact du marketing politique au Maroc sur l'électorat, en l'occurrence le mode de scrutin proportionnel, la multitude des partis (plus de 30 partis au total à la veille des élections 2016), le clanisme (surtout dans le monde rural), le manque d'implication politique

et le manque de confiance des électeurs, l'analphabétisme, le manque de compétence des cadres des partis, l'héritage conservateur, etc.

Les partis politiques sont de plus en plus en lutte pour la préservation et la durabilité des sièges de leurs membres. On trouve aussi le problème de l'inefficacité de la communication traditionnelle, et surtout l'absence d'un contenu intéressant.

Étant donné les mécanismes de la loi électorale, il s'avère extrêmement difficile pour tout parti de réaliser une nette majorité au Parlement. De plus, il peut y avoir un important décalage entre le nombre de votes populaires recueillis par les différents partis et leur représentation au sein du Parlement élu. **MP#1**

La pratique marketing politique caractérise, normalement, un environnement démocratique puisqu'il met au centre de son attention les électeurs et non les candidats. Toutefois, les observateurs restent peu optimistes quant à la capacité des partis politiques marocains à mettre en œuvre une véritable politique marketing électorale, et ce pour plusieurs raisons. Notre interviewé précise :

Il faut savoir deux choses, la première c'est que certains partis politiques n'ont toujours pas saisi l'importance de la communication et du marketing politique, et la seconde c'est que certains partis sont conscients de l'importance de la communication et du marketing politique, mais ne l'utilisent pas, et ne cherchent pas le faire. En effet, ils n'ont même pas de pages Facebook officielles. Ceci est dû à plusieurs raisons, dont la plus importante est que ceux qui dirigent et sélectionnent et fixent les budgets n'ont pas encore saisi l'importance de la révolution numérique. **MP#4.**

Pourtant, les observateurs citent encore l'exemple du PJD pour démontrer l'importance des pratiques du marketing politique dans l'amélioration de l'image du parti malgré les failles de gestion gouvernementales.

La règle générale dit que chaque parti qui exerce le pouvoir voit sa base électorale se réduire. Mais cette règle n'a pas été appliquée dans le cas du PJD. Ceci a constitué la première et la plus grande remarque. La deuxième remarque est que, en 2016, il a été constaté que les partis politiques vantent leurs expériences dans les espaces virtuels, ce qui pousse tout observateur à se croire en face d'un véritable pouvoir électoral, mais les résultats ne sont pas aussi importants pour être célébrés. L'expérience de la Fédération de la Gauche Démocratique est le meilleur exemple. Ceux qui ont suivi ce parti sur Facebook et sur Twitter ont cru, en se basant sur les interactions positives et les réactions positives obtenues par le

peuple à leur comportement et à leurs choix, que ce parti serait la deuxième force politique après le PJD, **MP#2**.

D'une manière générale, la pratique du marketing politique au Maroc reste tributaire de son contexte d'application. Le scepticisme des citoyens quant à la gestion de la chose politique au Maroc reste le constat dominant. Toutefois, on assiste à une faible différenciation créée par le PJD, et qui est majoritairement due à son idéologie qui trouve bon écho auprès de son environnement.

5. Crise de projets et de vision stratégique des partis politiques

5.1. Déficit de différenciation des programmes électoraux des partis politiques

L'offre politique des partis marocains se trouve influencée par leurs histoires, mais également par leur force de proposition en fonction de leurs stades d'évolution. Ainsi, des partis qui ont cumulé des expériences dans la gestion (gouvernement), ceux qui ont eu des expériences dans l'opposition, ou alors ceux qui ont cumulé des expériences dans le travail de terrain, n'ont pas trouvé de difficulté à cristalliser ce qu'ils pensent être en adéquation avec les attentes des citoyens.

Toutefois, ce qui détermine réellement la capacité d'un parti à proposer des programmes en adéquation avec les attentes de la population est le degré d'adhésion des individus au travail politique, et il semble que nous n'avons pas encore atteint ce haut niveau d'adhésion où les individus peuvent se refléter dans l'offre des programmes politiques.

Les programmes électoraux des partis politiques au Maroc ont été basés sur des statistiques globales obtenues des sources officielles (e.g., Haut-Commissariat au Plan, rapports internationaux, départements ministériels, bilan du gouvernement sortant, etc.), ce qui a eu pour résultat des similitudes importantes des bilans dressés et des objectifs fixés (inspirés des politiques déjà lancées et/ou des initiatives royales) avec quelques différences près de chiffres. En effet, la compréhension effective des besoins de l'électeur dans l'optique d'influencer sa décision de vote exige le recours à des enquêtes spécifiques d'avis et d'opinion publique, ce qui n'est pas à confondre avec les sondages qui sont élaborés par la presse ou certains organismes spécialisés à destination du grand public. Ainsi, le principal pilier du Marketing politique se trouve réduit à une simple aspiration de vente d'hommes politiques.

5.2. Le marketing stratégique : le maillon faible du marketing politique au Maroc

Les partis évoluent généralement, et ce quel que soit le système politique, dans un environnement incertain et complexe. Ainsi, le changement

est une caractéristique commune à tous les partis et toutes les organisations des partis politiques, et c'est une caractéristique qui marque également leur environnement extérieur.

Les attentes de l'électorat dans son ensemble, ou de certaines de ses franges, évoluent. D'autre part, les difficultés économiques, ainsi que les enjeux politiques nationaux et internationaux mettent continuellement les partis politiques face à de nouvelles responsabilités et de nouveaux défis.

Ces changements d'environnement et ces nouveaux enjeux peuvent renforcer ou affaiblir un parti politique, contribuer à la réalisation de ses objectifs, ou alors avoir une incidence négative ou compromettre son développement. Pour réussir dans ce type d'environnement, les partis politiques sont appelés à faire preuve de concentration, de détermination et disposer de capacités institutionnelles d'adaptation. Il est crucial pour un parti politique d'avoir une vision commune de sa nature, de ses objectifs et des actions à mettre en œuvre pour les atteindre.

Pour ce faire, la planification stratégique devient une démarche fondamentale pour permettre aux partis politiques de forger une vision commune et partagée, ou alors pour édifier un projet communautaire cohérent. La planification stratégique permet ainsi aux partis politiques de prendre suffisamment de recul par rapport à leurs activités et préoccupations quotidiennes, et de réfléchir à des questions plus fondamentales et à long terme. Elle leur permet également de définir des objectifs réalistes visant à rétablir, maintenir ou à accroître leur force institutionnelle. L'instauration d'un processus de planification stratégique par les partis politiques est susceptible de stimuler les débats internes et de favoriser l'émergence d'idées, tout en unissant les membres et adhérents autour d'objectifs communs. Ceci permet, par ailleurs, de définir le positionnement politique, de formuler des stratégies d'avenir et de définir des repères de progression du parti.

L'une des caractéristiques marquantes de la vie politique au Maroc, comme dans nombreux autres pays, c'est l'existence d'une tension constante entre la nécessité de répondre à l'électorat dans l'immédiat, et la formulation d'objectifs et de stratégies à long terme.

Comme réaction à ce contexte, les partis politiques marocains sont le plus souvent contraints de concentrer leurs efforts sur des crises socio-économiques d'actualité, à court terme, au détriment du développement de véritables stratégies à moyen et long terme, et de l'organisation interne nécessaire à ces stratégies. Ceci se traduit par une diminution de la confiance accordée par le public aux partis politiques en tant qu'acteurs de représentation et de gouvernance, surtout dans le cas des démocraties émergentes.

Dans le contexte marocain, les pratiques de ciblage des partis politiques marocains ne semblent pas aussi faciles à identifier. Nous retrouvons ainsi des partis politiques qui ciblent des catégories spécifiques,

comme le cas du PJD en l'occurrence. En effet, le religieux pèse toujours sur le discours politique du PJD avec une forte capacité de dissimulation en fonction des contextes.

Le parti avance l'argument du discours démocratique qui croit dans l'état civil, mais dès qu'il y ait intensification dans la concurrence électorale, le parti refait référence au texte coranique et la Sunna du Prophète, et on recommence à parler de la nature religieuse du pays, alors que le reste des partis politiques n'ont pas encore atteint un tel niveau **MP#3**.

Le PJD semble bien savoir exploiter le côté émotionnel et spirituel, aussi bien de ses adhérents que de sa cible, en mettant en avant le discours de « *se considérer tous comme des frères dans la religion, rassemblés autour de Dieu et s'aiment en Dieu* ». Ce discours trouve une forte résonance dans la communauté, car elle est psychiquement préparée pour accepter un tel discours.

6. Politique de communication et définition du produit « candidat » des partis marocains

6.1. Politique de communication

Au Maroc, il est presque évident que la communication politique a totalement changé de dimension. Après avoir été quasi-confidentielle, balbutiante et monopolisée par certaines institutions, la communication politique devient une pratique réclamée par l'ensemble des acteurs politiques. Les partis politiques ont pris peu à peu conscience des riches possibilités techniques et des multiples avantages en termes de valorisation de l'image publique, ainsi qu'en termes de construction d'un discours politique efficace que les médias offraient. Ils s'en sont donc saisis pour les intégrer aux diverses stratégies de communication déjà mises en place par les politiciens, leurs conseillers en communication et leurs équipes de campagne.

Les partis et candidats ont utilisé une variété de moyens pour communiquer avec les citoyens. Si les partis ont largement profité de l'ouverture médiatique et de la libéralisation de l'espace audiovisuel, l'usage des canaux de communication interactifs par les candidats continue à primer sur l'usage des autres nouveaux moyens de communication.

L'outil qui a été le plus utilisé dans les élections est le discours oral. En fait, le contexte général de rejet de la lecture fait que l'oral ait grandement affecté l'électeur que l'écrit. D'autre part, le constat est que ceux qui lisent les programmes électoraux ne sont pas forcément des gens qui votent.

Le niveau d'instruction réduit chez une frange importante de l'électorat (entre autres l'analphabétisme) conduit à une incompréhension des programmes et donc au vote axé plutôt sur la personne ou sur le logo du parti. Nous sommes alors plus proches du modèle propagandiste que du modèle du marketing politique.

Notre interviewé souligne que les citoyens qui ont un certain niveau d'études et qui sont capables de lire les programmes électoraux des partis enregistrent des taux de participation très faibles dans les élections, et donc n'influencent pas les résultats finaux de celles-ci :

Ce sont des gens qui ont bien compris la politique et le jeu électoral, et ils savent très bien que les grandes décisions économiques et de sécurité dépassent le gouvernement. Ils ne croient pas à la capacité des parlementaires marocains à produire de bons textes juridiques, et savent très bien que le gouvernement est incapable de prendre d'importantes décisions exécutives. Toutefois, la plupart des citoyens sont influencés par le discours oral **MP#5**. Par ailleurs, sur le plan de la stratégie de communication, et à l'exception de quelques grands partis suffisamment médiatisés qui font recours à des spécialistes en la matière, certains observateurs relèvent l'existence de dissemblances flagrantes dans les discours de candidats appartenant au même parti, d'une part, et d'autre part le manque de coordination et de communication interne entre le sommet du parti et les dirigeants locaux.

Au registre de la communication, les partis utilisent des slogans courts en arabe ou en dialecte « Darija » comme axe central de communication. Par ailleurs, et pour ce qui est des canaux utilisés, il devient quand même clair que l'âge des affiches sur les murs comme seul outil de communication semble révolu. On assiste alors à un renforcement d'autres outils et canaux marketing média ou hors média, comme les tournées organisées, la distribution de prospectus électoraux, les meetings, l'usage de la télévision (interventions des représentants dans les journaux télévisés, émissions pour leaders et spots publicitaires), le passage dans les stations radio, le recours à la presse écrite y compris celle indépendante, ou alors l'organisation d'événements publics ou privés, voir même des réceptions ou des « festins » surtout dans le rural. La nouveauté introduite lors des élections 2016 est sans doute l'emploi des technologies d'information et de communication et du marketing direct (réseaux sociaux, informations dynamiques sur les sites, envois de SMS, emailings, forums discussion, programmes téléchargeables, etc.).

Les partis ont été conscients de l'importance de la mise en place d'une infrastructure opérationnelle pour garantir l'efficacité des campagnes électorales pour les élections de 2016. Certains partis organisés ont ainsi fait appel à leurs fonctions internes (cellules / départements / pôles de communication) pour mettre en place des plans de campagne. La composition de ces départements variait d'un parti à un autre. Dans la majorité des cas, des directeurs de campagne ont été désignés pour orchestrer les actions et les réalisations. Outre les directeurs de campagne au niveau national, des comités de coordination ont été désignés et comprenaient des responsables de la logistique, des finances, relations presse, veille ou surveillance, et dans certains cas on pouvait trouver même des conseillers. Presque la totalité des

partis s'est contentée des ressources internes, le recours aux agences s'est fait principalement pour la réalisation ou la production de capsules ou autres contenus destinés aux médias.

Dans des phases préalables aux législatives, certains partis bien organisés dans leurs campagnes ont mis en place des infrastructures nécessaires et ont procédé à une répartition des tâches tout en identifiant des équipes de soutien ; il s'agit notamment des partis PJD et du PPS.

6.2. Le choix des candidats

Certains observateurs considèrent que le PJD est le seul parti qui a fait preuve d'une certaine rigueur dans la nomination de leurs candidats, et ce au niveau national. Toutefois, pour le PJD il y a eu des exceptions organisationnelles à la procédure de nomination puisque le secrétariat général du PJD peut recourir à la nomination sans restriction pour les autres partis, on assiste à un respect des procédures de nomination dans certains arrondissements, tout en sélectionnant les politiciens les plus expérimentés. Il est à noter que le respect de la procédure de nomination est considéré parmi les éléments qui donnent une bonne image au parti, en ce sens que cela démontre que l'on est face à parti démocratique.

7. Enjeux et perspectives du E-Marketing au Maroc

7.1. Les chiffres clés de la révolution numérique au Maroc

Les résultats de l'enquête annuelle sur l'équipement et l'usage des technologies de l'information par les Marocains réalisée par L'Agence Nationale de Réglementation des Télécommunications (ANRT) en 2016 montre que la transformation digitale de la société marocaine s'opère de façon progressive. Cela dit les nouvelles technologies de communication ont pu se trouver une place même dans le rural. Ainsi, la téléphonie mobile s'est généralisée pour la quasi-totalité des ménages dans le milieu rural. Cela confirme la démocratisation de ce service. Ainsi, 90,7% des individus âgés de 12 à 65 ans en sont équipés en milieu rural. Selon la même enquête, 67% des individus âgés de 12 à 65 ans, équipés en téléphone mobile, disposeraient en 2016 d'un smartphone, contre 54,7% une année auparavant. L'adoption de cet outil, fortement utilisé pour accéder à Internet (par 93% des individus qui en sont équipés), montre l'intérêt des utilisateurs. 68,5% des ménages seraient actuellement équipés d'un accès à Internet et 66,5% des ménages équipés le sont avec la technologie mobile.

Selon les données de l'Agence nationale de réglementation des télécommunications (ANRT), le Maroc compterait 18,5 millions d'internautes, passant de 57,1% en 2015 à 58,3% en 2016. Avec une progression impressionnante dans le monde rural (de 42,2% en 2015 à 44,4% en 2016). Le nombre d'internautes, même s'il reste important, montre

l'existence encore d'un potentiel significatif, pouvant impacter positivement la pénétration de l'Internet et des accès, les taux d'utilisation ainsi que les types d'usage sur Internet. Les réseaux sociaux, la presse, l'actualité, les sites de jeux, loisirs et de sport, représentent les contenus favoris des internautes avec des taux pouvant atteindre 80,7%.

7.2. Les réseaux sociaux, principale activité en ligne des Marocains

En ce qui concerne les réseaux sociaux, les Marocains continuent à y enregistrer une présence forte. Concernant le contexte des législatives de 2016, le rapport publié la même année par MEDIANET LABS sur le comportement de l'internaute africain sur le web et sur l'utilisation de Facebook en Afrique précise que 13 millions de Marocains utilisent Facebook, soit 39% de la population, avec une évolution de 20% par rapport à 2015.

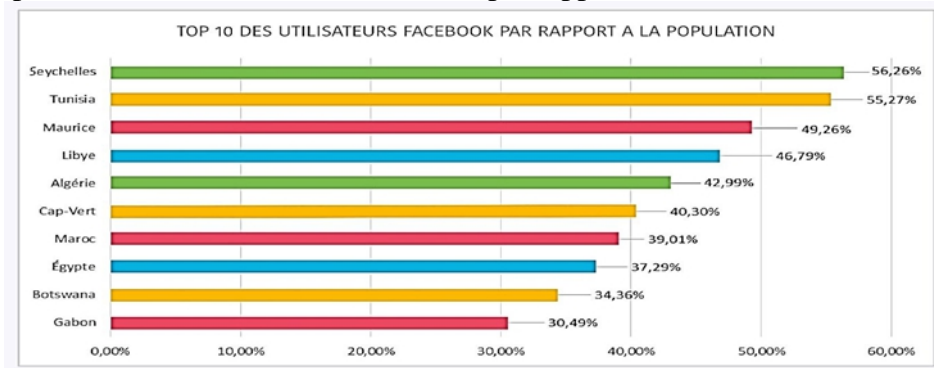


Figure 1. TOP 10 des utilisateurs Facebook par rapport à la population

Le Maroc est l'un des plus gros utilisateurs du Facebook, derrière l'Afrique du Sud, le Nigeria, l'Algérie et l'Égypte. Cependant avec ses 39% d'utilisateurs, le Maroc reste loin derrière ses voisins du point de vue du nombre d'utilisateurs en pourcentage de la population. Ainsi 42,99% des Algériens ont un compte Facebook et en Tunisie plus de la moitié de la population est connectée au réseau.

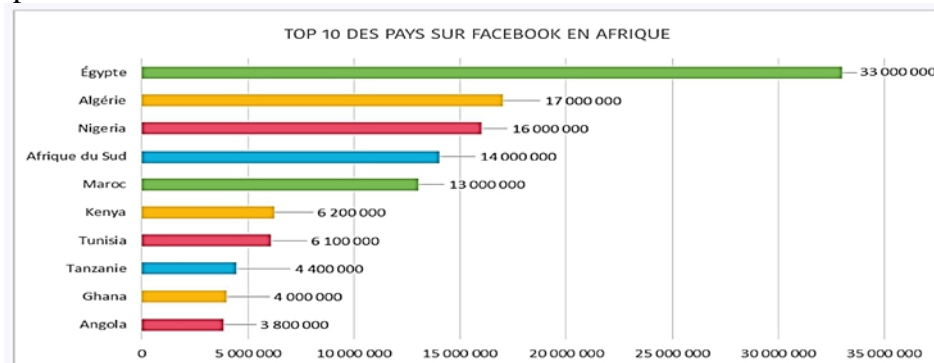


Figure 2. TOP 10 des pays sur Facebook en Afrique

En 2018, le rapport sur la digitalisation au Maroc publié par Hootsuite, montre que le nombre d'utilisateurs d'Internet par les Marocains s'élève à 22.5 millions de citoyens, soit 36% de la population totale.

D'autre part, l'usage des médias sociaux concerne 16 millions de marocains, soit une évolution de plus de 3 millions d'utilisateurs par rapport à l'année 2015. Ceci démontre que les Marocains sont de plus en plus connectés, et sont très actifs sur les médias sociaux. Ces chiffres montrent également que la majorité des classes sociales utilisent les médias sociaux, et que l'information peut être disponible pour la grande majorité des citoyens.

La même étude montre que 96% des Marocains sont aujourd'hui dotés de téléphone mobile, et que 57% ont des smartphones. L'étude montre également que le temps moyen de connexion à Internet par jour est de 2h53minutes, et que le temps passé à utiliser les médias sociaux est de 2h24 minutes. Ceci montre clairement que les Marocains passent le plus clair de leur temps de connexion à utiliser les médias sociaux.

Pour ce qui est des médias sociaux, on remarque que WhatsApp est la plateforme la plus utilisée par les Marocains, avec un taux d'usage de 53%, et qui dépasse Facebook qui vient en deuxième position avec 50%, et YouTube qui vient en troisième position (41%).

7.3. Présence « réseaux sociaux » des partis politiques marocains

Les campagnes de sponsoring en masse des pages Facebook ont provoqué une augmentation importante du nombre d'abonnés aux pages des personnalités politiques. Sur ce volet, deux champions nationaux sont identifiés : le Parti de la Justice et du Développement (PJD) connu pour son « armée digitale » redoutable avec près de 450.000 abonnés et le Parti Authenticité et Modernité (PAM) avec presque 180.000 abonnés.

Le PJD est sans doute le parti le plus présent dans les sites de réseautage social, et il possède une grande capacité de mobilisation à travers ces sites web. Il est aussi l'un des premiers partis politiques qui a su pénétrer les sites de réseautage social et le monde virtuel numérique. Le PJD semble avoir une bonne longueur d'avance sur les autres partis sur le monde virtuel. Le parti est en tête de classement avec plus de 1 million de fans sur Facebook, en plus de 80.000 followers sur Twitter. Le PAM, quant à lui, a avec plus de 500.000 fans sur Facebook, suivi par le PPS avec 358.000 fans. Le reste des partis nationaux sont loin derrière avec quelques dizaines de milliers de fans. Pour ce qui est des partis progressistes et de gauche tels que l'Union Socialiste des Forces Populaires (USFP), ils sous-estimaient le potentiel des sites de réseautage social, et considéraient les utilisateurs de ces sites web comme étant moins conscients et plus influençables, voir même la remise en cause de la véracité des profils des utilisateurs de ces sites web.

La particularité de la société, sa diversité et les particularités des régions font que, malgré un taux de pénétration d'Internet de 42,78% fin mars 2016, et qui est à 63% en janvier 2018, l'essentiel de la campagne électorale se réalisait sur le terrain réel. D'une manière générale, les partis politiques marocains restent très attachés aux outils traditionnels et classiques, à savoir l'interaction directe, les rencontres dans les maisons, les souks, les douars, à la force d'animation, de musique populaire, de distribution massive de flyers, etc. Pour ce qui est de la communication politique sur les réseaux sociaux, les partis l'ont déjà expérimentée lors des communales et régionales précédant les législatives, à des échelles différentes. Leur nouveau canal, qualifié de « cheval de bataille » semble être la web tv et la web radio.

Le rival le plus redoutable du PJD sur la scène politique, l'est aussi sur Internet. Le Parti Authenticité et Modernité (PAM) semble être un fort rival. Fort de ses nouveaux services web : PAM Tv et PAM Radio, le parti dit du tracteur, puisqu'il adopte le tracteur comme logo, possède un pôle numérique bien structuré qui confère un caractère institutionnel à sa présence sur la toile.

En 2016, tout comme le PAM, le Parti de l'Istiqlal (PI), le Parti du Progrès et du Socialisme (PPS), le Mouvement Populaire (MP), le Rassemblement National des Indépendants (RNI) et l'Union Socialiste des Forces Populaires (USFP) ont réalisé un développement remarquable en termes de représentativité sur les réseaux sociaux. Néanmoins, ces formations, notamment le PPS, un des pionniers de l'utilisation de Facebook, enregistrent une forte activité durant les échéances électorales, mais avec une chute spectaculaire d'activité hors élections.

Le point commun de ces partis, c'est qu'ils ont tous repensé leurs plateformes web pour donner plus d'attractivité et un meilleur rendement, comme ils ont lancé de nouveaux services d'information et de communication.

Ces percées peuvent être expliquées par une prise de conscience du rôle déterminant que peuvent jouer les réseaux sociaux dans la consolidation de l'e-réputation et de l'influence virtuelle des partis sur un électorat de plus en plus important et qui pourrait peser dans la balance le jour du scrutin.

Les autres partis ne sont pas en reste. Mais si certains sont appelés à compenser leur part de présence dans les médias publics, il est clair que, paradoxalement, les "grandes" formations lui ont damé le pion sur ce front aussi. Certaines formations sont même inaudibles sur les réseaux sociaux, une erreur fatale et incompréhensible, en ce temps où le virtuel est devenu un véritable vivier électoral.

Conclusion

Le marketing politique est un concept théorique universel, la compréhension de sa démarche stratégique et des réalités de sa pratique sur un contexte empirique différent tel que le contexte Maroc n'est pas un simple

exercice de transposition, elle nécessite un effort d'adaptation, compte tenu des différents facteurs propres au contexte en question, les différentes perceptions des acteurs (Makry, 2019), la grande limitation des moyens financiers des partis politiques marocains, le faible intérêt que porte l'élite partisane à la professionnalisation de la communication, la concentration des efforts politique sur des crises socio-économiques d'actualité à court terme, au détriment du développement de véritables stratégies à moyen et long terme, ainsi que la forte évolution de la connectivité des marocains.

L'enjeu de chaque parti politique est d'améliorer sa performance électorale, acquérir une majorité de vote pour pouvoir gouverner. Le Marketing politique se présente comme possibilité pour les décideurs politiques. Dans cette contribution nous avons choisis d'étudier le contexte des élections législatives 2016 pour savoir si le marketing politique présente des caractéristiques similaires dans des contextes politique et socio-économique différents. L'objectif étant de pouvoir contextualiser notre étude empirique principale qui tente de savoir comment l'utilisation des outils Marketing Politique peut améliorer la performance électorale des Partis Politiques Marocains ? en interrogeant cette fois-ci les praticiens et les leaders politiques.

Cette étude de contextualisation, nous a permis d'affiner le cadre théorico-conceptuel de notre étude et d'orienter plus précisément la démarche sur le terrain. Nous avons ainsi pu délimiter la collecte des données par rapport à l'objet étudié et son contexte. Nous avons également retenu des éléments évoqués par ces experts, auxquels nous n'avions pas pensé auparavant.

Les résultats de cette étude de recherche contextualisée feront objet de prochaine publication

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Annexe 1

Rapport annuel de l'ANRT 2016 :

https://www.anrt.ma/sites/default/files/rapportannuel/rapport_annuel2016_anrt_vf_2.pdf

Rapport sur la digitalisation au Maroc Hootsuite 2018 :

<https://fr.slideshare.net/EveryLeader/digital-in-morocco>



ESJ Social Sciences

Accrual Accounting Practice and Financial Performance in Local Governments of Cameroon

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Abstract

This paper focuses on assessing the relationship between accrual accounting practice and financial performance in local governments in Cameroon. Using accountability and efficiency as performance proxies, the study employs a mix of qualitative and quantitative research approaches with a triangulate method of data collection. In a population of 374 councils, 50 councils were sampled and clustered according to their statutory council categories. Both descriptive and inferential statistics were used with a multiple regression analysis on panel data to test the relationship between accrual accounting practice and financial performance within council categories. The findings revealed that about 77% of councils (predominantly rural councils) practicing mild accrual accounting scored a higher financial performance. Meanwhile, 23% of councils (mostly city councils) practicing a moderate and sometimes strong accrual accounting had a lower financial performance. The pooled regression analysis showed a 13 % insignificant but positive correlation between financial performance and accrual accounting practice. These findings were then backed up with inferences drawn from interviews, discussions as well as content study of accounting books. It revealed that councils have the latitude to navigate from mild, moderate, and strong accrual accounting practice as the need arose. Accrual accounting practice should be

sequenced in ways that councils can focus on mild accrual accounting practice, and it should move to a higher level of moderate and full accrual accounting only when they can afford the expertise and infrastructural resources needed to yield a significant performance result.

Keywords: New Public Management (NPM), Accrual accounting, accountability, efficient financial performance

1. Introduction

The importance of decentralizing governance and public service delivery to local community has become a focus in public sector financial management, accountability, and performance discourses in recent times. Local governments, as decentralised entities in Cameroon, were spelt out in the first democratic constitution of 1996 as artificial persons endowed with administrative and financial autonomy to manage the economic, social, hygiene, sports, and cultural activities of municipalities in Cameroon (Akouafane, 2009; Banilon *et al.*, 2012).

Many reasons can be advanced for decentralizing governance and the management of state resources towards the people. A host of Cameroonian scholars like Bekolo (2020), Chia (2018), Tani (2012), and Kofele-Kale (2011) opined that there was general disillusionment with the political regime and its bad system of governance manifested through corruption, nepotism, social injustice, poor public service delivery, and inadequate accountability mechanism that was deemed irksome and suffocating. Problems of accountability and transparency, characteristic of the ultra-centralized Jacobin administrative systems, were inherent in the unitary and republican state of Cameroon.

This consequently galvanized internal pressures from ethnic and regional groups yearning for a greater control and participation in local governance processes that was in the hands of a few privileged elites of the ruling class. Such steam for a more democratic and accountable governance triggered a series of reform agenda championed by external pressures from the IMF/Bretton Wood measures to transform such bureaucratic government to be more citizen-oriented (Shamsul, 2007; Kilelo, 2015). It became mandatory to the traditional hyper-centralized Government of Cameroon as one of the recipients of World Bank neoliberal policies to redefine its decentralization machinery through a series of statutory provisions to speed up reforms in the local government. Amidst a culmination of these donor-driven reforms in guise of New Public Management, measures were taken to speed up the administrative, fiscal, and financial decentralisation processes (TSOWA, 2017; Banlilon, 2012). Among them was the introduction of private-style

financial management and accounting techniques for an accountable and efficient management of financial resources in councils of Cameroon.

Accrual accounting was then introduced in councils in Cameroon in 1998 and modified in 2010 by a decree on a new harmonised Budgetary Nomenclature and Accounting Plan on accrual basis promulgated to accommodate the new resources transferred to councils by the line of ministerial departments. Other structural changes such as the introduction of organisational charts with specific job profiles became eminent with the quest for more professional competences to meet the exigencies of this new financial and accounting technology. The government, in partnership with resident international bodies particularly the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), organised a series of informative and formative seminars for council financial and accounting officials. With the adoption and implementation of all the NPM financial reform laws, are councils more accountable and efficient as envisaged?

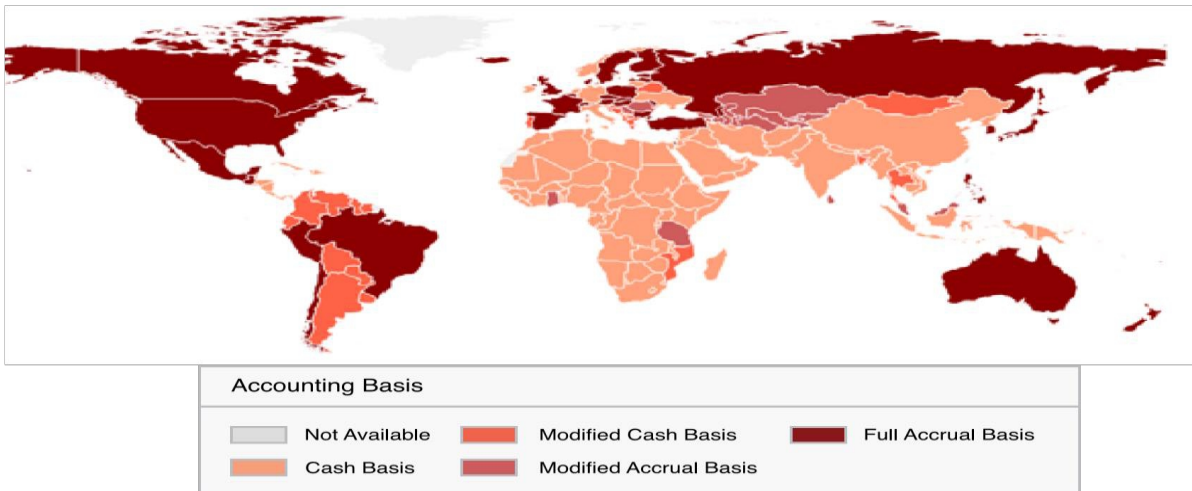
2. The Problem Statement

Following the audit bench report of the supreme court of Cameroon, not up to 25 percent of councils are able to produce financial reports on accrual basis since its official implementation in 2006. In fact the production rate of the management account of councils between 2014 and 2016 declined from 23.52 % to 10.96%. Municipal authorities were consequently often convicted for financial malpractices, irregularities, and discrepancies in figures observed in the presentation of the few financial statements that were supposed to be produced on accrual basis (Audit Bench of Cameroon, 2016). When policy and decision making in councils is based on such poor quality in financial reporting, the state of financial performance becomes doubtful. This is evidenced by the fact that after over two decades of financial reforms, local governments in Cameroon are still entangled with the problem of managing human, material, and financial resources (Bekolo, 2020; Cheka, 2007). Despite the statutory transfer of financial resources and competences to municipalities, there was a general cry by citizenry that such resources hardly trickled down to their benefit (Banlilon, 2012). With these backdrops, one may interrogate why there is low output and poor financial reporting outcomes of accrual accounting in councils in Cameroon.

Accounting professionals have acknowledged that there are basically two basis of accounting, the cash base and accrual-based system (IPSAS, 2014; Deloitte, 2020). Others like GASB (2006) and Chan (2008) displayed a broader spectrum of the application of these accounting basis that range from cash and modified cash based to mild, modified, and full accrual basis of accounting for financial reporting. While an entity may use any of the accounting basis as entry point for its transaction analysis and accounting, the

accounting basis practiced in the entire government beginning with the local government sector in Cameroon seem to be a combination that has not yet been adequately captured by accounting researchers as there is little or no empirical consensus on this.

In PwC (2015) world survey, for instance, modified accrual was found to be the basis of accounting practiced in the government of Cameroon. Meanwhile in IFAC reported by Cavanagh *et al.* (2016) on mapping the spread of accrual accounting in the public sector in the world, the government of Cameroon was presented as one of the 57% of those still operating under pure cash-based system. In same vain, IFAC *et al.* (2018) world financial accountability index report on accrual basis has no data for the Government of Cameroon, while OECD & IMF data from public opinion holds that the Cameroon public sector is on cash basis as illustrated in the map reported by Canavagh *et al.* (2016) as shown below.



Source: OECD and IMF staff estimates, based on public information, including Blöndal and Moretti (2016) and Eurostat (2014).

Figure 1. World Accounting Basis by country

The data in Figure 1 above, which is based on public information, shows that only two governments in Africa including Ghana had adopted accrual accounting by 2016. The rest except for one were either on cash or modified cash-based system. The data showing cash-based system for that of Cameroon in particular and CEMAC governments as a whole is misleading, giving that accrual accounting was adopted in the CEMAC Directive (2011) for all its Central African member states through the implementation of the traditional code-based accounting system with an accounting chart and budget nomenclature on accrual basis for government entities. However, that of the entire public administrative entities was adopted in 2008 while that of local government in 1998, and this was revised in 2010.

It should be noted that there are equivalent national and international convention of accounting standards that are adopted by governments of the world over other than IPSAS (IFAC *et al.*, 2018; PwC, 2015). The adoption of accrual for financial accounting at the Local Government level in Cameroon in 1998 was reiterated with the reinforcement of financial decentralisation in article 88 of Financial Regime of Councils (2009) modified by the General Decentralisation Code (2019). It was stated in all these financial reform laws that councils should base their accounting analysis on the recognition of all rights and obligation recorded in double entry accounting on the year in which such transactions are generated. At international level, the CEMAC Directive on the Accounting Plan of the State (2011) article 3, just like the Financial Regime of the state of Cameroon of 2007 modified in 2018 article 75, all have accrual basis of accounting enshrined as the *modus operandi* for the Whole of Government Accounting (WGA) on accrual basis. These pronouncement on accrual in the accounting legislation of governmental entities in Cameroon matches with the IPSAS definition of accrual accounting where all transactions are recognised once they materialise no matter the date of their cash payment or collection (IPSAS, 2014).

Even with the multiple accounting legislation instituting accrual accounting in the Whole of Government uniform accounting in the public sector of Cameroon, Mukah (2016) holds that there is still a need to study the factors determining the adoption of IPSAS accrual accounting in Cameroon. Thus, this is given that the existing public sector cash-based and fund accounting system is considered inadequate. There are therefore multiple opinions on the type of accounting basis practiced in the public sector, specifically the Local Government of Cameroon, as depicted by Mukah (2016) to be fund and cash accounting, Canavagh *et al.* (2016) cash accounting, and PwC (2015) modified accrual accounting.

The Cameroon Audit Bench Reports on the irregularities and poor rates in financial reporting, as well as the diversity in understanding the accounting basis practiced for financial reporting in councils are all indicative of the fact that financial accountability and performance in councils of Cameroon is still a cause for concern. What then is the level of the practice of accrual accounting in Cameroon? Has accrual accounting practices affected accountability and financial performance as envisaged by the NPM financial reforms with councils in Cameroon?

The objective of our study is therefore to;

- i. Determine the degree of the practice of accrual accounting for financial accountability in councils (RO1);
- ii. Assess the effect of the practice of accrual accounting on council's financial performance (RO2).

3. Conceptual and Theoretical Literature

IFAC *et al.* (2018) consider the accrual basis of accounting as a technique where the full characteristics of transactions are recognised and recorded in the economic period to which they relate. The accrual basis of accounting recognises the function of time and provides a more accurate historical record of financial transactions, as it keeps tracks and accrues values of all economic and financial transactions, regardless of whether money has transpired. The values of all assets and their accumulated depreciation, values of debts, loans and their accrued interest, salaries owed and pension liability, are computed and accounted for.

Although accrual accounting has been used in the private sector for a long time, studies have shown that it is not possible to simply adopt private sector accruals to the public sector in bulk (Christiaens *et al.*, 2010; Wynne, 2007). Entities therefore use different entry points for accrual, as classified by Governmental Accounting Standard Board, GASB (2006), differentiating accounting systems under full accrual, modified accrual, full cash modified cash or a combination of cash and accrual bases of financial reporting and disclosures. Meanwhile to qualify for the degree of application of accrual accounting, Chan (2008) distinguishes the elastic nature of the accrual accounting concept under mild accrual, moderate accrual, and strong accrual accounting. Cash and full accrual systems of accounting represent the two end points on this spectrum of possible financial reporting basis, and a combination of numerous variations that can be put into practice. Countries that have adopted accrual accounting have therefore shown different adaptation and degrees of implementation (Pina & Torre, 2010; Sabrina *et al.*, 2015).

Accrual accounting is esteemed by accounting professionals as the basic foundation for a modern finance function as it plays a proactive role in providing key information for strategic and operational decisions as well as accountability (GASB, 2006; IFAC *et al.*, 2018). PwC (2015) therefore deems it mandatory for all Governments to update and adopt sound accounting and reporting rules as part of “democratic accountability and intergenerational fairness” (p.7), in order to contribute to better service performance and sustainable public finance. Given that there is no single perspective to capture the accountability concept, Onurorsh (2012) noted that accountability can be segmented into four categories: political accountability, managerial accountability, social accountability, and financial accountability. In this context, financial accountability entails an obligation to report on the intended and actual use of resources by those to whom such resources are entrusted.

In Opanyi (2016), the adoption of cash-based IPSAS in Kenya had a positive impact on the quality of financial reporting as compared to the old accounting standard, but it had no significant effect on accountability and

transparency. Consequently, the move to IPSAS accrual accounting, though challenging, was deemed mandatory for the provision of a better quality of financial information, enhanced decision, transparency, and accountability.

Deaconu *et al.* (2011) demonstrated the usefulness of accrual accounting over cash-based accounting, with the exploration of performance proxies such as fixed assets, liabilities, revenues, and operating cost through a quantitative approach based on content analysis of financial statements. It was proven that the Romanian public accounting system increasingly improved on the quality of its public management system over time.

Based on the doctrinal components of NPM that emphasizes the transposition of private style management into the public sector, many studies have raised concern on the adoption of accrual accounting as an appropriate financial reporting and management technique to enhance accountability, decision making, and efficient performance in the public sector (Wartkins *et al.*, 2007; Wynne, 2007; Hyndman & Connolly, 2011; Ritonga, 2018).

Wynne (2007), for instance, while not categorically against the use of accrual accounting in the public sector opines that accrual accounting should not be considered in isolation, but as part of the overall NPM reform process. The study observes that many countries have misconstrued pressure from the IMF, the World Bank, the OECD, and the IFAC to change to accrual accounting, though it is not a tried and tested approach but rather a technical change made for political reasons. Accrual accounting is considered neither as a priority nor an end in itself, but as a means of shifting the emphasis of the budgeting system away from cash inputs towards outputs and outcomes. Rather than focusing on the adoption of accrual accounting like a one-size-fit all, public sector organisations should be concerned with how accounting and financial management can best improve the management of public services.

The NPM, the institutional and agency theories are relevant in understanding the rationale for the adoption and practice of accrual accounting and the functional behaviours of financial and accounting officials in their contractual relationship to render account through the production of financial reports to local government stakeholders. By this contractual relationship based on the principal agency theory, council managers (accountant and vote holders) as agents are obliged to render account to their principals on the resources under their responsibility. This theory raises the problem of the possibility of the agents (financial and accounting officers) to manipulate the reports on financial information for their own self-interest, with the risk of lack of probity in accountability, especially when they are not adequately monitored and rewarded. Such practices are referred to as decoupling in accounting, where accounting is manipulated to make up semblance of reality, for the gallery or ceremonial purpose, in order to cover up personal gains. Such self-aggrandizement and legitimate seeking couched in cosmetic accounting

has been preponderant in developing countries (Awosom, 2018; Adhikari et al., 2011; How & Alawattage, 2012).

4. Area of Study and Methodological Approach

The study examines accounting in councils otherwise referred to as municipal or local governments in Cameroon within the context of New Public Management reforms development. The period of study is five years, 2012 to 2017, of the statutory implementation and practice of accrual accounting in councils. Out of a total of 374 councils, 50 councils and their financial statements were sampled and clustered according to their statutory categories as city councils, sub divisional councils, and municipal councils as defined by the law on the orientation of Decentralisation in 2004.

Research Design

Using accountability and efficiency as the performance proxies, the study employs a mix of qualitative and quantitative research with a triangulate method to collect both primary and secondary data.

Data Collection

Primary data was collected through Likert scale questionnaires (see Appendix 1 & 2), administered to accounting officers, and filled based on details of their accounting books of original entries. This helped to assess the content coverage and timeliness of the use of accrual accounts in these books of original entry and unpublished financial statements. In addition, it enabled the ranking of councils practicing accrual accounting under strong, moderate, and mild practice of accrual accounting to discharge financial accountability as in research objective one (RO1).

Secondary data was collected through content analysis on end of year selected financial statements (The budget summary statement and operating statement) to establish the council financial ratios as defined by the law on the Financial regime for councils. Earlier works on public sector performance measures, such as Bukenya (2014), used revenue collection and operating expenditure ratios on budgeted and actual values of the budget statement to determine the levels of financial performance in city divisions of the Kenyan local government. However, our study found the statutory provision of staff cost ratio, operating ratios, and investment ratios as suitable variables to measure financial performance of local governments in Cameroon. This then constituted the variables for the second research objective (RO2) of this study. Structured interviews and open-ended discussions were done to know the situation of competent human resources, outsourcing for expertise, and the use of ICT as complementary variables to back up findings on the practice of accrual accounting in councils in Cameroon.

Data Analysis

Descriptive Statistics: This was used to measure the level (degree) of the practice of accrual accounting as in RO1. Two factors were considered to classify the practice of accrual accounting; the *content coverage* on the recognition of accounts for transaction analysis, and the *timely* recognition of accounts as well. The criteria for assessing the different degrees of the practice of accrual accounting for financial accountability were derived from Chan (2008) and Sabrina et al. (2018) classification of accrual accounting applications as follow.

Strong accrual (SA) recognises all financial and non-financial transactions promptly as they occur during the accounting period. Such transactions are identified as assets and liabilities (A & L), revenues and expenses (R & Exp), debtors and creditors (Db & Cr), depreciation and provisions (Dep & Pr).

Moderate Accrual (MOA) recognises financial transactions as timely as they occur during the accounting period such as assets and liabilities (A & L), revenues and expenses (R & Exp), and debtors and creditors (Db & Cr).

Mild Accrual (MiA) or Modified Cash (MC) recognises all transactions on the cash base during the accounting period and sets up unpaid assets and liabilities, revenue and expenses, debtors and creditors at the end of the accounting period. Thus, MoA is established only at end of the accounting period.

With the above classification, measures of central tendency such as mean, median, and standard deviations were done to assess the level of the practice of accrual accounting for financial accountability as in RO1. Percentage scores on the degree of practice of accrual accounting by each category of councils (city, sub divisional and municipal council) as well as their financial performance ratios were presented in contingency tables, followed by a histogram or bar chart to rank the scores.

Inferential Statistics

To test the relationship between the practice of accrual accounting and financial ratios as a proxy to financial performance as in RO2, a diagnostic was first done with the Pearson Product Movement Correlation (PPMC) test before proceeding to a Multiple Regression Analysis (MRA) in a panel data with all the variables in our study.

Given that PPMC, according to Chee Jennifer (2013), is the most commonly used test of association that measures the strength, direction and probability of the linear association between two intervals or variables, we found it suitable to test the normality of the variables in our study. The two independent variables being the two levels of the practice of accrual accounting (mild and moderate accrual) respectively were applied on two

dependent variables (investment and staff cost ratios as proxies to financial performance).

Econometric Modelling to Examine the Levels of the Practice of Accrual Accounting on Efficiency as Proxy to Financial Performance in Councils

- *Strong accrual accounting practice (SA)= 3*
- *Moderate accrual accounting practice (AACMo) = 2*
- *Mild accrual accounting practice 1 (AACMi)*
- *No accrual accounting practice 0*

Since none of the councils were found to be significantly on strong accrual basis, we consider the two cases coded as 2 for moderate and 1 for mild accrual accounting practice as separate variables to measure the degree of accrual accounting practice in councils in Cameroon.

To measure efficiency as a proxy to financial performance in councils for RO2, inspiration was drawn from Vavrek (2018) selected criterion method to evaluate efficiency which includes financial indicators such as cost minimisation analysis, cost-benefit analysis, as well as investment rating methods. While others like Bukenya (2014) consider revenue collection and expenditure performance as measures of financial performance, this study employs the staff cost, investment ratio, and operating ratios as the statutory financial ratios spelt in article 39 of the Financial Regime of 2018 for council in Cameroon, where Staff cost (employment ratio) $\leq 35\%$ of operating budget, investment ratio $\geq 40\%$ of total budget, and operating ratio $\leq 60\%$ of total budget. Financial performance is considered to be efficient if it takes the following values: 3 if all the ratios are respected, 2 if only two of the ratios are respected, 1 if only one of them is fulfilled, and 0 if none of the efficiency ratios are obtained.

Model Specification for the Relationship between Financial Efficiency as Proxy to Performance and Accrual Accounting Practice

A multiple regression test was administered to assess the relationship between the practice of accrual accounting and financial performance for each category of councils.

$$FE = f(ACAP, Cdum).....(1)$$

Here,

FE is the single indicator for financial efficiency as performance proxy for the dependent variable.

ACAP is the accrual accounting practice that makes the independent variable. *Cdum* represents dummy variables for councils in terms of their category, namely City councils, Sub-divisional and municipal councils respectively.

5. Presentation of Results

5.1. Results of Descriptive Statistics on the Degree of the Practice of Accrual Accounting as a Performance Proxy to Discharge Accountability in Councils in Cameroon (ROI)

The descriptive statistical presentation is done in two folds. Firstly, it involves an assessment of percentage scores on the degree of practice of accrual by each category of councils presented in contingency tables, followed by a histogram or bar chart to rank the scores of the degree on the practice of accrual accounting.

Table 1. Percentage scores on the practice of accrual accounting by all the 3 categories of councils

<i>Category of councils</i>	City council (mega urban communities)		S.D. council (semi-urban communities)		Municipal Council (Semi urban & rural)		Totals	
	No.	%	No.	%	No.	%	No.	%
Strong Accrual	0	0%	0	0%	0	0%	0	0%
Moderate Accrual	2	5%	2	5%	5	12%	9	23%
Mild Accrual	2	5%	9	23%	20	50%	31	77%
Total respondent councils	4	10%	11	28%	25	62%	40	100%

Source: Students survey 2018.

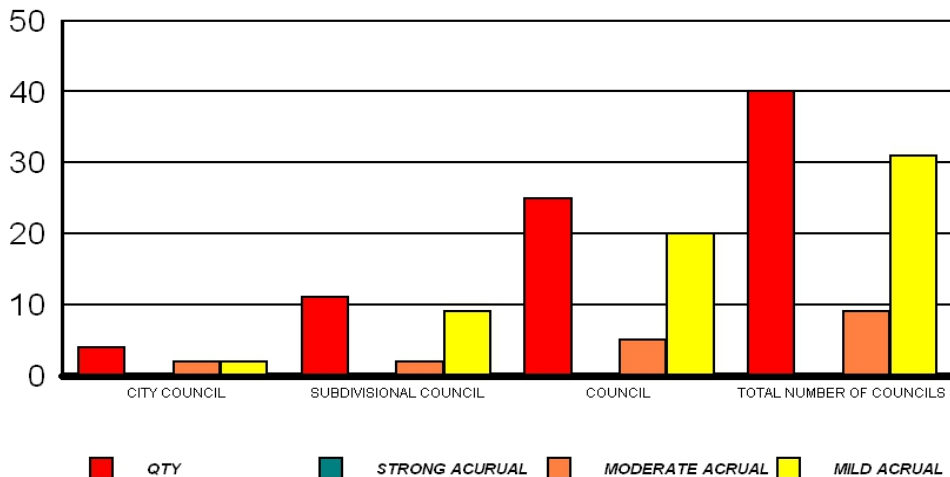


Figure 2. The degree of practice of accrual accounting by all the 3 council categories
 Source: Computing using Microsoft Excel

Table 1 and the histogram revealed that 40 out of 50 councils adequately responded to the questionnaires. No council practiced strong accrual (with zero) as councils could not account for the full value of their assets and liabilities. Also, they presented a comprehensive balance sheet as prescribed by the council and public sector accounting legislation in Cameroon.

Nine councils, about 23% are under moderate accrual accounting practice, can account for some of their assets and liabilities such as debtors and creditors, salary owed, and interest on loans during the year. However, they are unable to timely account for the loss of value (depreciation) of assets, pension, and social benefits during the financial year.

With 31 councils, about 77% under mild accrual accounting practice which is close to modified cash accounting, it was observed that they work mostly on budget and cash accounting, recording the collection and disbursement of funds, and then preparing their financial statements on accrual basis at end of the accounting period. This means they cannot timely account for their debtors, creditors, depreciation, and pension expenses during the financial year. The 23% of council under moderate accrual practice are therefore more accountable than 77% under mild accrual accounting as they portray a better quality of financial information in terms of content coverage and timeliness in the recognition and reporting of financial transactions.

Table 2. Financial performance ratio for all the 3 categories of councils

Council category	City council (mega urban communities)	S.D. council (semi-urban communities)	Council (semi urban/rural)	Total average.
Investment Ratio	34.14%	37.7%	43.5%	40.9%
Operating Ratio	65.9%	62.33%	56.54%	59.1%
Staff cost ratio	32.2%	44.5%	34.5%	36.98%

Source: Researcher’s survey 2018.

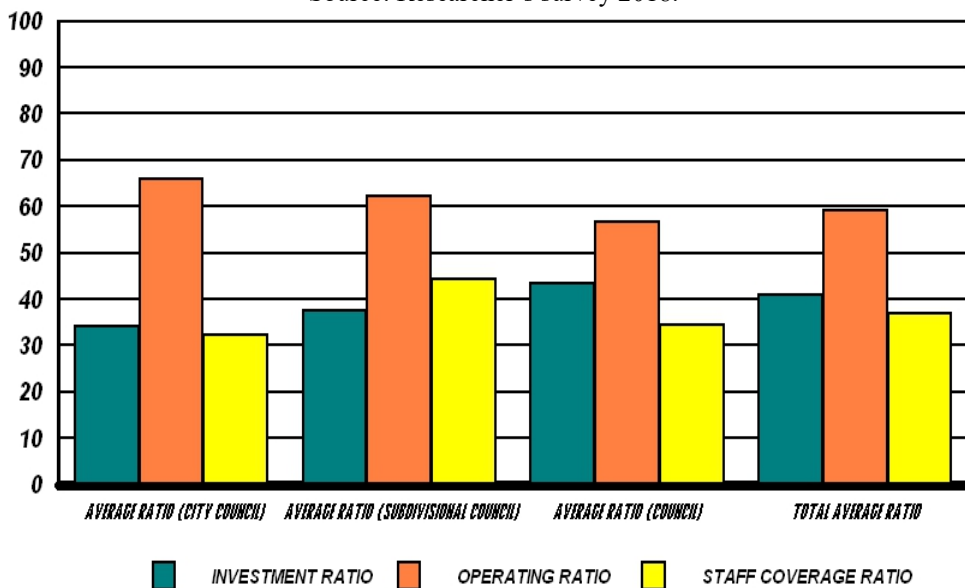


Figure 3. Ranking financial performance ratio by all 3 categories of councils

Source: Computing using Excel.

From the table and chart above, the city councils have the highest operating ratio (65.9), the last in investment ratio (34%), and the lowest in staff cost ratio (32.2%). Sub-divisional councils have the highest staff cost ratio (44.5%), the second in operating ratio (62.2%) as well as investment ratio (59.1%). Municipal Councils have the highest in investment ratios (43.9%), lowest operating ratio and second in staff cost ratio (34.5%).

The general trend therefore shows that municipal councils (predominantly in rural communities) have the best financial performance followed by sub-divisional councils (of semi-urban communities). In addition, the worst in financial performance is the city council (of mega cities and urban areas) with lowest in investment and staff cost coverage.

5.2. Results on the Level of Accrual Accounting Practice and Financial Performance by Councils in Cameroon (RO2)

With the understanding that accountability and efficiency are inextricable linked concepts in the measurement of performance (Harrison et al., 2012; Watkins et al., 2007; IFAC et al., 2018; PwC, 2015), this section seeks to evaluate this assertion by examining the effect of the different levels of the practice of accrual accounting on financial performance in councils in Cameroon using measures of central tendency.

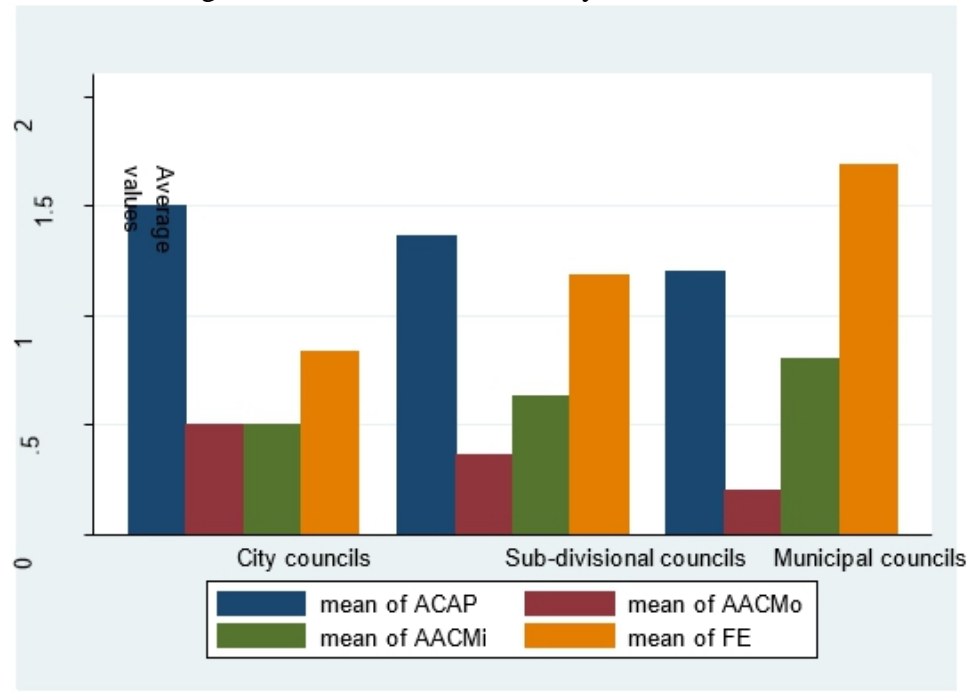


Figure 4. Level of application of accrual accounting and financial performance ratio
 Source: Researcher’s field survey, 2018

The histogram in Figure 4 above indicates that the distribution is evenly skewed, signifying a symmetric normal probability distribution. The mean level of the practice of accrual accounting is therefore the same as the median since the histogram is symmetric.

The mean level of the practice of accrual accounting (ACAP) by the City councils is 1.5 units, 0.5 units for moderate accrual (AACMo), mild (AACMi) 0.5 with a mean level of financial efficiency (FE) as performance proxy being 0.75 unit. Sub-divisional councils has 1.3 as mean level of the practice of accrual accounting, 0.36 for moderate (AACMo), 0.63 for mild (AACMi), and 1.3 units for financial efficiency (FE) respectively. Meanwhile, municipal councils accrual accounting practice stands at 1.2 units, moderate (AACMo) 0.2, mild (AACMi) 0.8, and financial efficiency (FE) 1.7 units respectively.

From the statistics, we notice none of the councils under study practice strong accrual accounting. Consequently, there is a higher rate of mild accrual accounting practice by sub divisional council and municipal council that also score a higher level of financial performance than the few under moderate accrual accounting predominantly of city councils. It therefore means that financial performance is at its best with mild accrual accounting practice predominantly by sub divisional councils and municipal councils at semi urban and rural areas.

5.3. Result of Inferential Statistics on the Effect of the Practice of Accrual Accounting on Financial Performance by Councils in Cameroon (RO2)

The results obtained from the descriptive statistics showed that only two levels of accrual accounting was predominantly practiced in councils in Cameroon, i.e., mild and moderate accrual accounting practices. These two levels were therefore retained for the test of their relationship with financial performance using PPMC and analyzed with a MRA on a panel data for the selected research variables.

5.3.1. Results of the Pearson Product Movement Correlation Test

A diagnostic test was preliminarily done using the Pearson Movement Correlation Test (PMCT) to assert the relationship between the variables of this study: the levels of accrual accounting practice for the independent variable, and financial ratios as proxies to financial performance for the dependent variable. The results obtained are displayed as follow;

Table 3. Results of the Pearson Product Movement Correlation (PPMC) Test.

Test of Relationship	Value	
	Mild Accrual (Mi)	Moderate Accrual (MO)
Pearson chi2(39)	40.0000	34.0000
Probability value (Pr)	0.026	0.426
Fisher's exact test	0.000	0.230
Cramér's V	1.000	0.0161

Source: Researcher's field survey, 2018

Table 3 above, based on the relationship between accrual accounting and performance, shows that the Pearson chi2 at 39 degrees of freedom is 40.0000 for mild and 34.0000 for moderate accrual accounting practice. The Probability value (Pr) for Mi is 0.026 and Mo is .426; the Fisher's Exact test value is 0.000 for Mi and 0.230 Mo respectively. All these values are less than 5% level of significance. Looking at the Cramer's V, Moderate accrual accounting practice is at 0.0161 which is less than the 0.25 standard value. The general trend shows that there is a positive relationship between accrual accounting and performance in councils. In spite of this high strength of positive relationship, the correlation between the independent variable (practice of accrual accounting) and dependent variable (financial performance) remains insignificant as shown by their Pr. Value and Fisher's exact test values, which is less than 5% level of significance. There may be need to justify this positive but insignificant relationship as stated in Glewwe (2016) and Opanyi (2016). Hence, in this case, this same result is reflected in the multiple regression analysis done for the development of research objective two (RO2), to know the effect of the practice of accrual accounting on financial performance in councils in Cameroon.

5.3.2. Result of the Pooled Regression Analysis

Table 4. Pooled regression analysis on the effect of accrual accounting practice on financial performance in councils

Source	SS	df	MS
Model	4.69551242	3	1.56517081
Residual	31.63946	39	0.878873889
Total	36.3349724	39	0.93166596

Number of observation = 40
 $F(3, 36) = 1.78$
 $Prob > F = 0.1682$
 $R\text{-Squared} = 0.1292$
 $Adj\ R\text{-squared} = 0.0567$

FE	Coef	Std Err	T	P<(t)	95% Conf. Interval	
ACAP	0.6212249	0.3412877	1.82	0.77	-0.0709386	1.313388
Subd_Council_dum	0.4866064	0.5493469	0.89	0.382	-0.6275207	1.600734
Municipal_Council_dum	0.8548675	0.5151275	1.66	0.166	-0.1898596	1.899595
_Cons	-0.276707	0.6941126	-0.04	0.968	-1.435396	1.3800055

Source: Researcher's field survey, 2018

Table 4 looks at the relationship between accrual accounting practice (ACAP) and financial efficiency (FE) as a proxy to financial performance in 40 councils. The table shows that accrual accounting practice (ACAP) coefficient for financial efficiency is 0.6212249. This means a unit increase in accrual accounting practice will lead an increase in council financial management performance by 0.62 units. The probability value 0.077 is greater than 0.05 or 5% level of significance. This implies that accrual accounting has a slightly insignificant effect on financial performance of the councils in the study area. Looking at the R-Squared value of 0.1292 or approximately 13%, which is the coefficient of determination of the goodness of fit, shows that accrual accounting practice accounts for only 13% improvement in the financial management performance of the councils in question. The factors not included in this analysis, or the stochastic term, accounts for 87% of the councils' performance. This may be due to the absence of other complimentary factors needed to reinforce the full practice of strong accrual accounting in ways that can significantly impact their financial performance in councils in Cameroon.

However, details on content analysis of financial statements and inferences drawn from interviews with council vote holders and accounting officials show that some councils in the city and urban areas sporadically attempted the practice of strong accrual accounting to enable them participate in the city's stock market. The reinforcement of other variables such as ICT and outsourcing for expertise was often required to have full accrual accounting done by councils. It therefore means that accrual accounting alone cannot significantly impact the financial performance of councils without the integration of other known financial data as complementary variables to enhance the practice of accrual accounting.

Glewwe (2016), for instance, advanced on a number of potential reasons for an insignificant result among which was the need to integrate other complementary variables to improve on educational outcomes in developing countries. In the context of accrual accounting practice, ECA (2003) proposes that the use of ICT, professionalism in human resources management, capacity building or outsources for accounting expertise are the exigent collaborative elements for any incremental approach in accrual accounting technology to enhance accountability and efficiency in the NPM reforms agenda.

In fact, Ouada (2004), FEE (2016), and PwC (2015) all contend that a successful implementation of accrual accounting needs a collaborative set of factors such as good communication across work units to get quick information, as well as an acceptable, convenient, and suitable ICT package as mandatory for a successful implementation of accrual accounting that can enhance reforms and performance in the public sector. This may therefore be some of the stochastic elements that needed to be explored to fill the 87% performance gaps that can yield a significant positive relationship between our research variables.

6. Discussion of Results

6.1. Multiple Levels of the Practice of Accrual Accounting for Accountability

The accounting legislation for councils in Cameroon defines accrual accounting as a *modus operandi* for councils without specifying the different basis or levels as entry point for accrual accounting application, which is the spectrum of existing accounting basis explored. While Mukah (2016) holds fund and cash accounting for the public sector of Cameroon, IFAC et al. (2016) cash accounting and PwC (2015) modified accounting, our study demonstrates a multiple level of accrual accounting practiced in councils since the introduction of accrual accounting in the public sector in Cameroon began with the local governments in 1998. While about 77% predominantly of municipal councils and sub-divisional councils are operating under mild accrual (close to modified cash) basis, 23% of mostly City councils operate under moderate accrual accounting during the year and sporadically on strong accrual accounting that was not consistent during the span of our study. With the sporadic practice of strong accrual accounting by some councils due to challenges in instituting the other complementary variables such as the use of ICT, sourcing for expertise and collaboration among work units within the frames of the decentralisation machinery, no council significantly operate on full accrual accounting basis to attain the efficient performance and accountability envisaged by the NPM financial reforms of councils in Cameroon.

Content analysis of accounting records and discussions with council officials revealed that councils had the latitude to navigate from modified cash accounting during the financial year and mild accrual accounting at year end, and sometimes on strong (full) accrual basis as the financial reporting need arises. With such multiple levels on the practice of accrual accounting in the Cameroon public sector and the Local Government in particular, public accountants risk having the latitude to navigate from one level of accrual application to the other. With this they are able to manipulate with the recognition and reporting of transactions in ways that may make financial information look better or worse according to their whims and caprices. This legislative void of not specifying the level(s) of application of accrual by councils (based on their size or resources) may lead to creative and manipulative accounting solutions by finance and accounting officials (as reporting agents) at their own convenience. For instance, they can decide not to report on the net values of assets. Also, they can delay with the values of debtors and creditors to manipulate with huge sums that could have been accrued (to their advantage) and thereafter report on it only on a later date, at the end of the year or not report at all. An example is the case of pension and capitalisation of assets couched under mild accrual accounting practice. In fact, this explains why pensioners in Cameroon queue up in desperation at municipal treasuries, with tons of old documents to justify their pension allowances which could have been duly computed on accrual basis at the time their services were rendered during each financial year.

Heterogeneous level of accrual accounting application may lead to inconsistency and ambiguities arising from the multiple levels of financial disclosure and the discharge of accountability between councils, and from one accounting period to another (i.e., over space and time). This may render accounting information inconsistent, difficult to understand, uncontrollable, and unreliable. Such failures of accrual accounting reforms to achieve enhanced accountability has been recorded to counter the ungrounded claim that accrual accounting renders accounting more accountable (Carnegie, 2005; Broadbent et al., 2008), especially with the public sector that has myriad of challenges in capturing the activities of multiple stakeholders that are financial and non-financial in nature.

6.2. Ambiguity and Contradictions in the Discharge of Accountability with a Hybrid of Financial Performance Relationship with Accrual Accounting Practice

From the analysis and findings on the degree of application of accrual accounting and financial performance in councils in Figure 4, city councils portray the best accrual accounting practice at 1.5 units at moderate accrual accounting practice though having the lowest in financial performance of 0.5

units. Meanwhile, at mild accrual practice, it scores 01 unit with a mean level of performance that slightly improves to 01 unit. While city councils at moderate accrual accounting score the lowest financial performance, they have a better financial performance at mild accrual accounting that is assumed to have less accountability coverage and quality of financial reporting (Ritonga, 2018) than at moderate accrual accounting.

It is generally claimed that the move towards a higher quality of accrual financial reporting by governments demonstrates the desire to achieve greater accountability that will guarantee better public service performance and efficient public financial management (Paulson, 2006; Van der Hoek, 2005; Bukenya, 2014; PwC, 2015). Premised on this claim, it becomes ambiguous that city councils having a better quality of financial information in terms of timeliness and higher coverage in financial reporting, at moderate accrual with 1.5 units, paradoxically display the worst in financial performance with 75 units compared to the two categories of councils.

The summary of the results in Table 3 also show that about 77% of councils practicing mild accrual accounting can guarantee financial efficiency than 23% of councils under moderate accrual accounting. Our findings therefore contradict the claim that the higher (stronger) the level of accrual, the better the quality of financial reporting and accountability, as more information can be reported in a more timely manner for an enhanced performance in the public sector (Chan, 2008; Bukenya, 2014; Sabrina et al., 2015; Ritonga, 2018). There is therefore no corroboration between the higher quality of accrual accounting, improved accountability, and efficient financial performance as in the case of the 23% of councils predominantly of city councils that show a poor financial performance at moderate accrual accounting practice. Hence, it is assumed to have a better quality of accounting due to its timely and broader coverage in financial reporting and accountability.

It is also ambiguous that management performance is at its best at mild accrual accounting where the quality of financial disclosure is low (Ritonga, 2018). This is so assumed given that mild accrual accounting does not have a broad coverage of financial information; it is claimed to be limited in the timely disclosure of financial information for prompt decision making to enhance performance and accountability in councils.

The pooled regression result of the relationship between the practice of accrual accounting and financial performance shows a positive but insignificant relationship. The positive financial performance of 77% of councils practicing mild accrual accounting should be encouraged along with the reinforcement of other reform measures such as the use of ICT, outsourcing for expertise in accounting, and enhancing human resource management and communication across the work units. Councils should not

therefore move to moderate accrual accounting that scores a lower performance except they have the necessary human material and financial resources to complement such full accounting practice on accrual basis.

Conclusion

It has been demonstrated in our study that there are multiple levels of accrual accounting practice by councils officials in Cameroon in their endeavour to meet up with the one-size fits all accrual accounting prescriptions by the council accounting legislation in Cameroon. Councils practicing mild accrual accounting (close to cash accounting) have a relatively better performance result. Unlike in Bukenya (2014) where city division with a higher quality of accounting marked a better financial performance, City councils in Cameroon, having a sound operating budget with a better quality of financial reporting, had a poor financial performance. Therefore, it would be necessary for local government policy makers in Cameroon to sequence the level of implementation of accrual accounting based on the resources and size of the council. This will enable councils to begin with mild accrual that seem to yield better performance results, then move to moderate accrual after having gained some expertise with time. The preoccupation about performance in the public sector in terms of accountability and efficiency remains a dream yet to come true despite the implementation experience of about twenty years in councils in Cameroon. The underpinning result of this research confirms the assertion that performance measurement in the public sector is characterized by ambiguities, contradictions, uncertainties and never fixed (Lee, 2008; Model, 2009; Harrison, 2012). The assessment of performance gets more and more complex with financial accounting theory that necessitates the application of both financial and non-financial parameters, especially within the context of New Public Management Financial (NPMF) reforms (Boukaert, 2004; Elio Borgonovio, 2018). The use and integration of other non-financial parameters such as ICT, professionalism and collaboration within work units, and outsourcing for expertise in the application of accrual accounting may significantly yield a better performance result.

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Appendix 1. Likert scale questionnaire on the timely recognition of accrual accounting transactions. / Saisie à temps les opérations de la comptabilité des droits constatés

When do you record the following transactions in your councils? <i>Quand est-ce que vous constatez et enregistrez les opérations suivants</i>		1 Every time it occurs / <i>Chaque fois dès la réalisation de l'opération</i>	2 End of every month / <i>Fin de chaque mois</i>	3 End of every quarter / <i>Fin de chaque trimestre</i>	4 End of every semester / <i>Fin de chaque semestre</i>	5 End of Year / <i>Fin de l'année fiscale</i>
1	150. Loans (<i>Emprunt LMT</i>)					
2	220. Real Estate. (<i>Construction</i>)					
3	30 Stock/Inventory account / <i>Compte de stock</i>					
4	38. Recorded claim / <i>Droit constatés</i>					
5	40. Debtors / <i>débiteurs ordinaires</i>					
6	41. Creditors / <i>créditeurs ordinaires</i>					
7	42. Salary / <i>salaires</i>					
8	62. Pension / <i>Pension</i>					
9	74. Interest & Dividends received / <i>Intérêt reçus</i>					
10	64. Interest paid / <i>Intérêts payés</i>					
11	68. Depreciation expenses / <i>Amortissement</i>					

Appendix 2. Timely disclosure of information on accrual accounting documents & financial statements. *Périodicité de la présentation des comptes*

	When do your prepare the following accounting documents and financial statements in your councils? <i>Quand est-ce que vous préparez les livres comptables et état de synthèse suivants.</i>	Every time transaction occurs <i>Chaque fois réalisation d'opération.</i>	End of every month <i>Fin de chaque mois.</i>	End of every quarter <i>Fin de chaque trimestre</i>	End of every semester <i>Fin de chaque semestre</i>	End of Year <i>Fin de l'année fiscale</i>
1	The account entry forms./ <i>Fiche d'imputation comptable</i>					
2	The Journals/ <i>le journal</i>					
3	The ledger accounts./ <i>Le grand livre</i>					
4	The Trial Balance / <i>La Balance Générale des Comptes</i>					
5	The Balance Sheet / <i>Le Bilan</i>					
6	The Statement of operating result / <i>(TSCG)</i>					
7	Situation of outstanding revenue / <i>Restes à recouvrer</i>					
8	Situation of outstanding payment / <i>Restes à payer</i>					
9	Statement of Budget revenue execution / <i>Etat des Recettes Budgétaires</i>					
10	Statement of Budget expense execution / <i>Etat des Dépenses Budgétaires</i>					



Cost Leadership Strategy: A New Game Strategy for Competitive Advantage in Milk Processing Firms in Kenya

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Abstract

Competitive advantage refers to the benefits that firms accrue from unique combination of possessions to outperform competitors. To build competitive advantage as a gateway to superior performance, firms pursue various beneficial strategic orientations. This study sought to establish whether cost leadership strategy gave rise to competitive advantage in milk processing firms in Kenya. The authors utilized the indicators of economies of scale, economies of scope and operational efficiency to operationalize cost leadership strategy while competitive advantage was operationalized through capabilities and knowledge. A census of all the milk processing firms was conducted with 148 respondents participating in the study. Data was collected using semi-structured self-administered questionnaires and subsequently analyzed using descriptive and inferential statistics. The study concluded that cost leadership strategy was a source of competitive advantage for the milk processors. It therefore recommends pursuit of cost leadership strategy as a competitive tool. It further recommends building of relevant capabilities and protection of tacit knowledge by firms as foundational blocks for competitive advantage.

Keywords: Cost Leadership Strategy, Competitive Advantage, Milk Processing Firms, RBV, Kenya

1. Introduction

Milk processing firms have enormous nutritional and economic roles to both individuals and national economies. The firms produce essential commodities and significantly contribute to the well-being of populations globally (Spicka, 2015; Mwangi, Kabare & Wanja, 2018; Kimiti, Muathe & Murigi, 2020). Consequently, understanding the firms' competitiveness is crucial. However, the processors face enormous cost related performance challenges world over. In their study on dairy processing firms in the European Union, Gardebreek, Turi and Wijnands (2010) indicated that milk processors faced various cost challenges leading to poor performance due to low efficiency and small scale of operations.

Spicka (2015) on the other hand observed strong competition among corporate milk processors in Central Europe and noted that poor performance among the processors was attributed to low operational efficiency hence high costs. In Africa, a report by International Dairy Federation (2010) indicated that milk processors' performance was negatively affected by high costs of accessing credit. Ugandan Dairy Development Authority report (2013) observed that 98% of milk processing plants in the country operated below available capacities hence high business costs which had led to generally dismal performance in the industry. In Kenya, Chege and Bula (2015) noted collapse of some milk processors due to similar performance challenges. Low profit margins and declining milk uptake also characterize the Kenyan milk industry (Bebe, Rademaker, Lee, Kilelu & Tonui, 2017; Chege & Oloko, 2017; Kimiti *et al.*, 2020).

Such situations necessitate firms to implement specific approaches to boost their performance levels (Barney, Ketchen & Wright, 2011). The approaches adopted describe the strategic orientations that firms take to focus their operational efforts towards stated objectives (Elif & Şengül, 2015). Strategies have been argued to be the most important possessions by firms (Kariuki, Awino & Ogutu, 2011; Ndung'u, Otieno & Rotich, 2016; Echwa & Murigi, 2019). Competitive advantage on the other hand describes the gains theorized to originate from unique combination of critical firm possessions. In reflecting on this, Lechner and Gudmundsson (2014) posited that a relationship exists between strategy, competitive advantage and superior firm performance. Cost leadership strategy is one of the strategies that has been widely studied and found to contribute to competitive advantage (Ismail, Rose, Uli & Abdullah, 2012; Gorondutse & Gawuna, 2017). Atikiya (2017) posited that cost leadership strategy generates competitiveness by allowing firms to create uniquely defensible positions.

Consequently, this study argued that cost leadership strategy could be the new game strategy for competitive advantage in milk processing firms in Kenya. The strategy addresses cost as a major performance challenge that

firms face. While acknowledging previous research that suggests that cost leadership could indeed result in competitive advantage, this study notes that difference in context makes the findings ungeneralizable to the milk industry in Kenya.

To measure competitive advantage, the study adopted capabilities and knowledge as recommended in various studies (Kinyua, Muathe & Kilika, 2015; Njoroge, Ongeti, Kinuu & Kasomi, 2016; Salim, Rahman & Abd Wahab, 2019). Cost leadership strategy on the other hand was operationalized using economies of scale, economies of scope and operational efficiency as adopted from Atikiya, Mukulu, Kihoro and Waiganjo (2015) and Kimiti *et al.* (2020).

The rest of the study is organized as follows. There is a section on review of theoretical and empirical literature, then a section on research methodology followed by a section on findings and discussions and finally a conclusions and recommendations section that also presents the study's limitations and future research.

2.0 Review of Literature

2.1 Theoretical Review

2.1.1 Resource Based View

Resource Based View (RBV) has its origins in the seminal works of Penrose (1959). The scholar posited that the level of firm performance was related to its resource possession. RBV value in choice of strategic orientation by firms lies in the proposition that superior performance results from differences in doing things (Armstrong & Baron, 2004). Consequently, for a firm to attain competitive advantage in industry, it must employ its strategy in ways distinct from the competitors. Moreover, firms can only attain above average performance if they understand how internal resources, competitive advantage and performance relate (Rose, Abdullah & Ismad, 2010). Here, resources represent the means by which strategy is formulated and implemented to build competitive advantage.

Creation of competitive advantage through implementation of cost leadership strategy also relies on the human resources that a firm possesses, their knowledge and their ability to grow the knowledge (Ormanidhi & Stringa, 2008). Further sustainability of competitive advantage gained requires that firms constantly adjust to the state of competition. Consequently, the higher the degree of awareness a firm has about its competitive environment, the better placed it is to focus its strategic orientation towards achieving competitive edge over competitors. Thus, it is the resource possession defined by both quantity and quality that gives firms distinct identity and hence unique position in industry.

2.1.2 Dynamic Capability Theory

The dynamic capability theory is an introduction of Stalk, Evans and Shulman (1992) with significant input from Teece and Pisano (1994). It advocates for building and constant renewal of resources and capabilities by firms to create competitive advantage (Harreld, O'Reilly & Tushman, 2007; Muithya & Muathe, 2020). These renewals are critical to the attainment of superior firm performance. Monsur and Yoshi (2012) noted that dynamic capabilities theory also logically extends Porter's generic competitive strategy.

It recognizes that the business environment is highly dynamic hence competitive advantage is characteristically transient. The theory recommends that firms regularly re-align with the competitive environment to sustain competitive advantage gained. The theory therefore calls for possession of relevant capabilities to constantly renew firm strategy in line with environmental dynamism (Teece, Pisano & Shuen, 1997; Muithya & Muathe, 2020). Capabilities represent abilities that enable firms to build competitive advantage and as a consequence transform strategy from theory into practice (Barney, 2001).

2.2 Empirical Review

Scholars have examined different strategic orientations and how they relate to competitive advantage and eventually firm performance (Muathe, 2002). Salavou and Halikias (2009) observed that it is not the strategies that firms pursue that directly lead to superior performance but the resultant competitive advantage that arises from such strategies. Monsur and Yoshi (2012) examined how vertical integration strategy, competitive advantage and firm performance interacted among apparel firms in Bangladesh. Vertical integration strategy was found to positively and significantly influence competitive advantage which subsequently significantly affected performance.

Talaja, Miocevic, Pavicic and Alfirevic (2017) sought to establish the relationship between market orientation, competitive advantage and performance of medium and large-sized firms in Croatia. It was concluded that market orientation led to competitive advantage that positively influenced performance. Sihite (2018) on the other hand assessed the role of diversification strategy in creating competitive advantage by Indonesian firms. The study concluded that diversification was positively correlated with competitive advantage and there was resultant improvement in performance. Wanjiru, Muathe and Kinyua-Njuguna (2019) examined whether corporate strategies gave rise to competitive advantage hence improving performance of manufacturing firms in Nairobi County. The authors concluded that the

strategies led to competitive advantage that fortified firm strategic orientation relationships with performance.

Theoretically and empirically, the reviewed literature suggests that strategies are a crucial source of competitive advantage that in turn is key to superior firm performance. However, none of the reviewed empirical studies linked strategy and competitive advantage in the context of milk processing firms in Kenya. Further, while the studies give evidence on the role of strategy in firm competitiveness, they failed to address cost as a critical area where firms seek advantage in. This study therefore sought to bridge the existing gaps with the objective of establishing whether cost leadership strategy gave rise to competitive advantage in milk processing firms in Kenya. Consequently, the study hypothesized that:

H₀₁ Cost leadership strategy significantly contributes to competitive advantage in milk processing firms in Kenya.

3.0 Research Methodology

The study was both descriptive and explanatory which facilitated integration of the positive characteristics of both designs as well as allowed triangulation of the results to boost validity (Creswell & Creswell, 2017; Wanjiru *et al.*, 2019). Descriptive component as argued by Muathe, (2010) and Muathe, Wawire and Ofafa (2013) was used to describe the phenomenon while the explanatory component was used to establish the cause-effect relationship between the two variables. The study's population consisted of all the 29 milk processors registered with Kenya Dairy Board (KDB) as at June 2019, 24 of which were small while 5 were large. 10 respondents were drawn from each large firm and 6 from each small firm hence a sample size of 194. The respondents were the manager and deputy of functional areas that either made decisions about costs, implemented cost reduction measures or managed cost performance in the firms. These were executive, operations, production, finance and marketing which were all in existence in the large firms while the small firms had at least three of the functional areas of interest. Data was collected using self-administered semi-structured questionnaires which were distributed by hand and by email. 148 usable questionnaires were obtained nationally. The data was subsequently analyzed using descriptive and inferential statistics. To test the study hypothesis H₀₁, cost leadership strategy was regressed against competitive advantage using the following empirical model:

$$M = \beta_0 + \beta_1 CLS +$$

ε.....Model 1

Where; M = Competitive advantage
 CLS = Cost leadership strategy
 β_i = Beta Coefficient

ε = Error term

4.0 Findings and Discussions

4.1 Descriptive Statistics

Sample mean and sample standard deviation were utilized to summarize measures on the characteristics of the sample. Tables 1 and 2 present the results of descriptive analysis for cost leadership strategy and competitive advantage respectively.

Table 1: Descriptive Statistics of Cost Leadership Strategy

Variable	Mean	Standard Deviation
Economies of Scale	3.97	0.94
Economies of Scope	3.75	0.99
Operational Efficiency	4.33	0.74
Average	4.02	0.89

Source: Survey Data (2020)

Results in Table 1 show that the most widely adopted driver of cost leadership strategy was operational efficiency with a mean of 4.33 and standard deviation of 0.74 followed by economies of scale with a mean of 3.97 and standard deviation of 0.94 while the least adopted driver was economies of scope with a mean of 3.75 and standard deviation of 0.99.

Table 2: Descriptive Statistics of Competitive Advantage

Variable	Mean	Standard Deviation
Capabilities	4.38	0.68
Knowledge	4.06	0.78
Average	4.22	0.73

Source: Survey Data (2020)

Results in Table 2 show that competitive advantage among milk processing firms was prevalently based on capabilities which had a mean of 4.38 and standard deviation of 0.68. Knowledge on the other hand had a mean of 4.06 and standard deviation of 0.78.

4.2 Inferential Statistics

Table 3 presents the results of regression analysis of cost leadership strategy on competitive advantage.

Table 3: Cost Leadership Strategy Predicting Competitive Advantage

	R	R Square	Adjusted R Square	Std. Error of the Estimate			
	.597a	0.356	0.352	0.38169			
	Sum of Squares	Df	Mean Square	F	Sig.		
Regression	11.759	1	11.759	80.717	.000 ^b		
Residual	21.270	146	.146				
Total	33.029	147					
	β	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
(Constant)	1.693	0.292		5.799	0.000	1.116	2.27
CLS	0.65	0.072	0.597	8.984	0.000	0.507	0.792

a. Dependent Variable: Competitive Advantage

b. Predictors: (Constant), CLS

Source: Survey Data (2020)

The results in Table 3 show an adjusted R-square of 0.352 which signifies that cost leadership strategy accounted for 35.2% of the variation in competitive advantage. The results for ANOVA (F-statistics = 80.717 (p=0.000) confirmed that cost leadership strategy significantly predicted competitive advantage since the model was significant. The results from regression analysis show that cost leadership strategy composite had a β coefficient of 0.65, p-value =0.000 meaning that cost leadership strategy had a positive and significant effect on competitive advantage in milk processing firms in Kenya. Additionally, the results illustrate that an increase in cost leadership strategy by one unit would result in an increase in competitive advantage by 0.65 units. From these findings, the study failed to reject H_{01} and concluded that cost leadership strategy significantly contributed to competitive advantage in milk processing firms in Kenya.

These findings are supported by postulates of the RBV that unique employment of strategy by firms contributes to being competitive in the industry. The importance of knowledge in creating a competitive edge has also been underscored by the findings as emphasized by RBV (Ormanidhi & Stringa, 2008). Arguments by dynamic capability theory that firms need to constantly build and renew capabilities to create competitive advantage are also evident from these findings. The findings also corroborate Ismail *et al.* (2012) argument that operating at lower costs in comparison with competitors results in competitive advantage. The study findings further support conclusions by Monsur and Yoshi (2012), Talaja *et al.* (2017), Sihite (2018) and Wanjiru *et al.* (2019) which indicated that the strategies pursued by firms are an important source of competitive advantage.

5.0 Conclusions and Recommendations

5.1 Conclusion

The study sought to establish whether cost leadership strategy contributed to competitive advantage among milk processing firms in Kenya. This was important because the strategy addresses cost which has been shown to negatively affect performance of many firms. The study concluded that milk processors gained competitive advantage through implementation of cost leadership strategy. It was further concluded that cost leadership strategy significantly predicted competitive advantage and that the effect was positive. Advantages from cost leadership strategy arose from increasing the scale of operations, venturing into related business areas and improving operational processes through efficiency.

5.2 Policy and Practical Recommendations

Arising from the findings, the study recommends that milk processing pursue cost leadership strategy as a tool to gain competitive advantage in the milk industry. It further recommends that the firms build relevant capabilities to transform strategy from a merely theoretical statement into a practical tool for achieving superior performance. In addition, the firms must seek to protect tacit knowledge gained from operational experience through robust human resource management policies for workers' retention. Capabilities and tacit knowledge have been recognized as crucial foundational blocks for competitive advantage.

5.3 Limitations and Future Research

The study only considered firms registered with KDB as of June 2019. Inclusion of small home-based milk processors not registered with KDB is recommended in future studies to establish whether they pursue cost leadership strategy and if this results in competitive advantage. Cost leadership strategy was found to account for 35.2% of the variation in competitive advantage. Future studies should consider other factors besides cost leadership strategy that explain the remaining 64.8% of the variation in competitive advantage.

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La política monetaria en presencia de las finanzas islámicas: un estudio exploratorio

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Resumen

En los últimos años se ha producido un verdadero desarrollo de la industria financiera islámica, abriendo nuevas oportunidades de financiación para los inversores. Para beneficiarse de sus productos, varios países se han embarcado en el experimento financiero islámico. Al contar ya con una infraestructura bancaria y monetaria convencional, la implantación de instituciones islámicas puede resultar difícil, ya que se supone que deben cumplir con la sharia al tiempo que operan junto a sus homólogos convencionales. Sin embargo, cuando los dos sistemas financieros coexisten, la práctica de la política monetaria es un verdadero desafío que da lugar a muchas reflexiones. De hecho, la prohibición de ciertas prácticas, como el uso de tipos de interés, por parte de las finanzas islámicas crea una necesidad real de diseñar instrumentos que se adecuen a los preceptos de la Sharia.

Palabras-clave : Política monetaria- Instrumentos- Finanzas islámicas- Finanzas convencionales

Monetary policy in the presence of Islamic finance: An exploratory study

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Abstract

In recent years, the Islamic financial industry has developed significantly, opening up new financing opportunities for investors. To benefit from its products, several countries have embarked on the Islamic financial experiment. Already having a conventional banking and monetary infrastructure, the implementation of Islamic institutions can be difficult, as they are supposed to be Sharia-compliant while operating side by side with their conventional counterparts. However, when the two financial systems coexist, the practice of monetary policy is a challenging and thought-provoking one. Indeed, the prohibition of certain practices, such as the use of interest rates, by Islamic finance creates a real need to design instruments that are appropriate to Shariah precepts.

Keywords: Monetary Policy, Instruments, Islamic Finance, Conventional Finance

Introduction

La crisis financiera puso en entredicho los principios de las finanzas convencionales, una crisis que comenzó a mediados de 2007 y que provocó una considerable inestabilidad económica en Estados Unidos y posteriormente en el resto del mundo. Fuertemente, la crisis de las hipotecas de alto riesgo se debe principalmente a la subestimación de los riesgos, la alta especulación, la falta de una regulación adecuada, así como las demás transacciones financieras que siguieron, como la titulización y la emisión de obligaciones con garantías de préstamos para obtener enormes beneficios a través de los derivados financieros.

La principal observación establecida desde la aparición de esta crisis es que sus principales causas radican en las tensiones del sistema financiero internacional, cuestionadas durante siglos; el sistema de intereses está ciertamente en el origen de las crisis bancarias, monetarias, financieras y económicas que conducen a la inestabilidad a todos los niveles, en particular

a la inestabilidad financiera, que justifica el sobreendeudamiento de los hogares y las fuertes deudas públicas.

Así, el actual entorno financiero global fomenta cada vez más la discusión y el debate sobre métodos alternativos de financiación islámica. En un momento en que la crisis financiera ha dejado al descubierto los límites del sistema financiero convencional, su homólogo islámico se está imponiendo en el entorno de las decisiones financieras.

Las diferencias entre el modelo convencional y el modelo islámico representan diferencias fundamentales.

De hecho, la prohibición de intereses constituye la principal diferencia entre las finanzas convencionales y las finanzas islámicas. De esta manera, los países que han optado por un sistema conforme a la Sharia, han rediseñado sus sistemas bancarios para que sean adaptados a las transacciones financieras sin intereses. Estas medidas se han aplicado en países que han optado por un sistema dual en el que los bancos islámicos coexisten con los bancos convencionales, y en países que han islamizado sus sistemas bancarios como Irán y Pakistán. (Khan & Mirakhor, 1989).

Además, y debido a las peculiaridades del sistema convencional que no son las mismas que las del sistema islámico. La valoración, las funciones y el papel del dinero son diferentes en este modelo financiero.

En consecuencia, existe una gran diferencia entre la percepción del dinero por parte del sistema financiero islámico y por el modelo convencional. En el sistema convencional, el dinero se asimila a un bien que se puede vender, comprar/alquilar y especular libremente. Tiene un valor temporal que se concreta en los intereses.

Sin embargo, cuando se trata del sistema financiero islámico, este punto de vista no es aceptado debido a sus fundamentos y cómo funciona. Así, la utilidad y la finalidad del dinero requieren un aspecto especial. Según los expertos en finanzas islámicas, el dinero es una unidad de cuenta y un medio de intercambio, porque el dinero como tal no debería cumplir ninguna función, razón por la cual el acaparamiento está prohibido. (Ayub, 2007 ; Ahmad & Hassan, 2006).

Dicho esto, la política monetaria en presencia de bancos islámicos debería representar un verdadero desafío para los países con sistemas financieros duales. De hecho, el problema que se plantea es que los bancos centrales utilizan instrumentos monetarios muy peculiares, que pueden no estar en consonancia con los principios del modelo islámico. Lo que incita a

reflexionar en otros sustitutos. Sin embargo, los bancos islámicos están presentes en dos tipos de sistemas financieros :

- Los sistemas financieros duales, en los que los bancos islámicos, coexisten con los bancos convencionales, como los países del Consejo de Cooperación del Golfo (CCG)
- Y sistemas financieros totalmente islamizados como Pakistán, Sudán e Irán.

En consecuencia, a través de este artículo, intentaremos responder a las preguntas siguientes :

- **¿Cuáles son los instrumentos de política monetaria que pueden sustituir a los instrumentos habituales en un sistema financiero totalmente islamizado ?**
- **¿Y con qué instrumentos debería operar la política monetaria en un sistema financiero en el que coexisten los dos tipos de bancos?**

Para ello, este artículo se presentará en dos partes principales. La primera parte estará dedicada a los instrumentos de la política monetaria en el sistema financiero islámico propuestos por la literatura, por un lado, y a los canales de transmisión de la política monetaria en presencia de los bancos islámicos, por otro lado. La segunda parte estará dedicada a un estudio exploratorio para identificar los diferentes instrumentos de la política monetaria en el caso de un sistema financiero dual (los países del CCG) y en el caso de un sistema financiero islamizado (Irán).

1. La política monetaria y el sistema financiero islámico:

La política monetaria tiene una gran importancia porque contribuye a mantener la estabilidad del sistema financiero. Por lo tanto, la pregunta que plantearemos a este nivel, es examinar cómo funciona la política monetaria en un sistema sin de intereses. Es evidente que los instrumentos basados en la tasa de interés no serían adecuados para los sistemas financieros islámicos, y habría que encontrar instrumentos que se ajustaran a los principios de la Shariah.

1.1. Los instrumentos de la política monetaria en un sistema financiero islámico: revisión de la literatura

Según Zangeneh y Salam (1993), el banco central puede utilizar muchas de las herramientas disponibles en un contexto bancario convencional.

Sin embargo, algunos requieren modificaciones que pueden resultar costosas. Consideran que sería más eficaz mantener las mismas herramientas.

Sin embargo, algunos instrumentos, como la tasa de descuento que utilizan los bancos para controlar el volumen de crédito en una economía, son inaceptables en la banca islámica.

Esta es la perspectiva del estudio desarrollado por Khan y Mirakhor (1989), lo que ha tenido como objetivo desarrollar un modelo macroeconómico para ilustrar el funcionamiento de la política monetaria en un sistema financiero islámico. Este estudio concluye que a pesar de la adopción de instrumentos monetarios distintos a los aplicados por el sistema convencional, el impacto de la política monetaria sobre las variables económicas del sistema financiero islámico no cambiaría significativamente. (Khan & Mirakhor 1989).

En consecuencia, Khan y Mirakhor continuaron sus trabajos en esta dirección y en 1994 admitieron que la política monetaria del sistema financiero islámico puede coexistir con el sistema financiero convencional. Por ello, las autoridades monetarias pueden utilizar todos los instrumentos convencionales, excepto la tasa de interés, y cualquier otro instrumento que implique la tasa de interés. Pueden utilizar las operaciones de mercado abierto, en las que se negocian participaciones de capital propio en lugar de bonos, así como el crédito, las reservas obligatorias y los coeficientes de participación en los beneficios, aunque los estudiosos musulmanes siguen teniendo opiniones encontradas sobre estas herramientas.

Este es el caso del consejo pakistaní que, durante su misión sobre la eliminación de las prácticas usureras en el sistema bancario, consideró que la función del banco central sería la misma, por lo que la mayoría de los instrumentos no se verían afectados, a excepción del tipo de descuento que no sirve para la actividad bancaria islámica. Se sustituiría por ratios de participación en los beneficios. (Ziauddin & al, 1983).

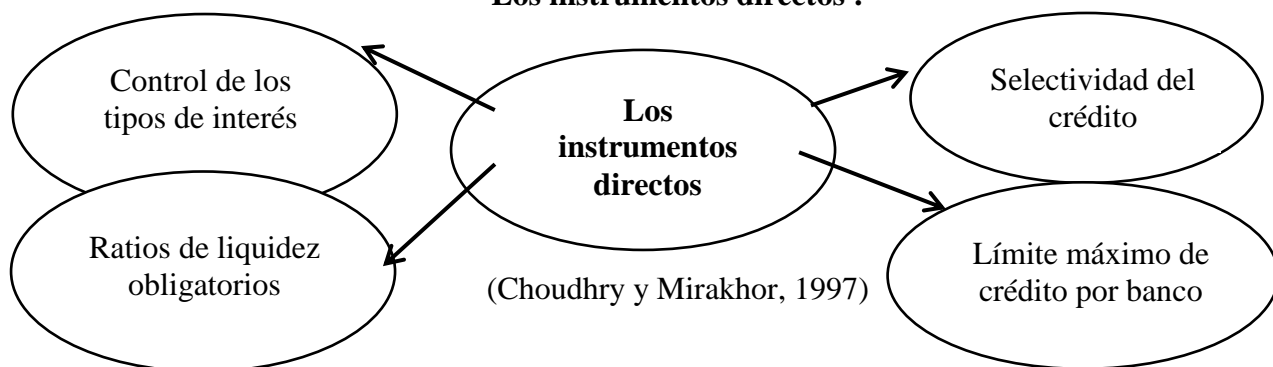
Este punto de vista es totalmente rechazado por Chapra (1997), quien considera que para aplicar una política monetaria islámica, no sólo hay que abandonar la tasa de interés, sino también las operaciones de mercado abierto.

En su análisis, Choudhry y Mirakhor (1997) proporcionaron una explicación más detallada de los instrumentos monetarios directos y indirectos, al tiempo que distinguen entre los instrumentos que pueden ser aplicados por la política monetaria islámica y los que deberían excluirse.

De hecho, reconocen que la mayoría de los instrumentos directos de la política monetaria convencional pueden ser utilizados por la política monetaria islámica, ya que no todos se basan en las tasas de interés y, por lo tanto, se ajustan a la Shariah. A diferencia de los instrumentos indirectos, que

tienen un interés fijo y, por lo tanto, están excluidos del concepto monetario islámico.

Los instrumentos directos :



Dado que la tasa de interés no debería ser parte de los instrumentos de la política monetaria islámica, el banco central iraní la reemplazó con la tasa de beneficio bancaria controlada. De hecho, los bancos islámicos operan con contratos de rendimiento fijo y contratos participativos como el Musharakah, por lo que el banco invierte los depósitos de los depositantes en proyectos y les asigna su parte en forma de beneficios. Sin embargo, estos proyectos suelen ser a largo plazo y, por lo tanto, el banco proporciona a los depositantes beneficios anuales o mensuales y, después de dos años o más, cuando el banco puede calcular sus beneficios exactos, les da la cantidad exacta. De esta forma, el banco central controla indirectamente los depósitos bancarios. Cuando opta por una política monetaria expansiva, reduce la tasa de beneficio del sistema bancario y disuade a los depositantes de colocar su dinero en depósitos bancarios. Este control asegura que el banco central tenga un seguimiento cuidadoso de los depósitos bancarios. (Kiaee, 2007)

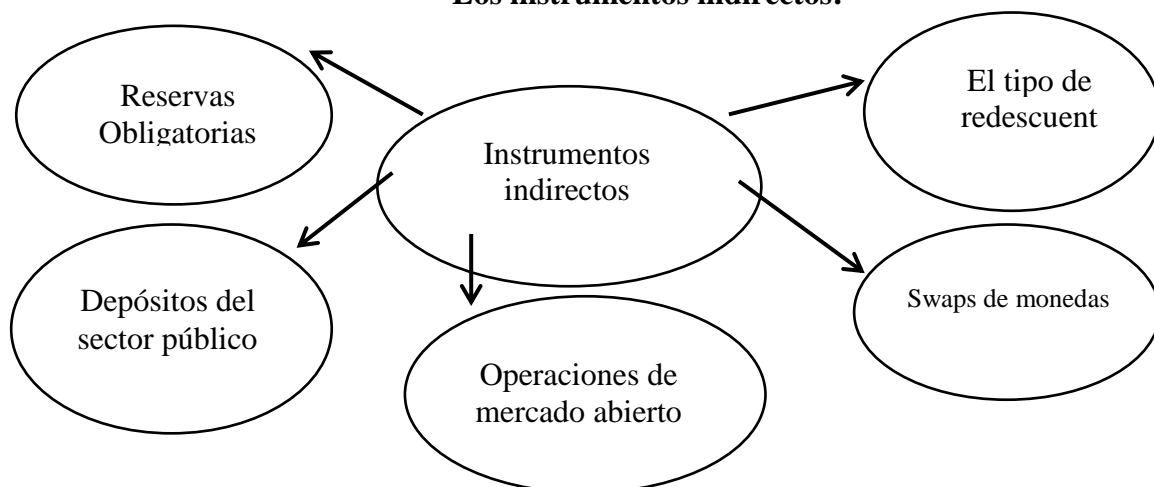
En efecto, los instrumentos directos son inherentes a los activos bancarios. Controlan eficazmente la asignación y distribución del crédito bancario de acuerdo con las directrices del banco central.

Esta panoplia de instrumentos se recomienda específicamente para los sistemas financieros que acaban de iniciar la actividad financiera islámica junto con el sistema convencional. Se caracterizan por su fiabilidad en el control de los agregados crediticios. De hecho, han demostrado un excelente rendimiento en caso de crisis financiera, especialmente en países con sistemas financieros menos desarrollados. Su principal cualidad es que son fáciles de aplicar y evaluar.

Sin embargo, tienen ciertas limitaciones relacionadas principalmente con sus contribuciones a la contención del progreso que el sector privado puede hacer en el sector bancario, especialmente cuando el sistema bancario está dominado por los bancos estatales. En los países desarrollados, la experiencia de los instrumentos directos demuestra que su eficacia se

desvanece con el tiempo debido a que se eluden de muchas maneras. De hecho, los bancos pueden ser responsables del debilitamiento de los instrumentos de control directo al fomentar nuevas técnicas de financiación que no están sujetas a las herramientas de control aplicadas y desvían fondos hacia actividades artificialmente rentables creadas por los propios controles. Por ello, el rendimiento de los instrumentos directos puede ser a menudo engañoso.

Los instrumentos indirectos:



(Choudhry y Mirakhor, 1997)

La razón principal de la existencia de los instrumentos indirectos es llenar las lagunas de los instrumentos directos, que con el tiempo pierden sus eficacias. Así, los instrumentos indirectos tienen la capacidad de controlar las fluctuaciones de liquidez a corto plazo en consonancia con los objetivos de la política monetaria. Las reservas obligatorias y los depósitos tienen un impacto directo en los saldos de reserva de los bancos con el banco central. Por otro lado, los swaps de divisas pueden iniciar un cambio en la composición de los activos denominados en moneda extranjera y en moneda nacional. También pueden influir en los saldos de reserva de los bancos con el banco central a través del mecanismo de compra y venta de divisas.

En cuanto a las operaciones de mercado abierto, proporcionan un control monetario más eficaz que el que ofrecen los instrumentos indirectos, porque se caracterizan por una notable flexibilidad y son capaces de modificar las condiciones monetarias incluso cuando determinados agregados monetarios pierden importancia económica. A pesar de sus contribuciones al desarrollo de los mercados financieros, se consideran instrumentos bastante complejos y con una gran ambigüedad sobre sus impactos en los agregados monetarios.

Además, si las exigencias de reservas no se distribuyen de manera equitativa entre los bancos, no pueden absorber el exceso de liquidez. Por lo tanto, se produce una expansión excesiva del crédito si los depósitos a la vista están sujetos a requisitos de reserva del 100% , ya que los requisitos de reserva para los depósitos de inversión serían escasos o nulos.

Las limitaciones de los depósitos del sector público están relacionadas principalmente con la falta de transparencia, que tiene un impacto negativo en el desarrollo de los mercados financieros. Por lo tanto, los instrumentos indirectos presentan muchas limitaciones en comparación con los sistemas financieros islámicos. (Choudhry y Mirakhor, 1997)

Por ello, varios investigadores han propuesto instrumentos adecuados a los principios de las finanzas islámicas como sustitutos. En particular, Choudhry y Mirakhor (1997) proponen una alternativa real a estos instrumentos, en forma de títulos públicos basados en la participación en los beneficios con tasas de rendimiento basadas en el superávit presupuestario. Estos tipos se ajustan a la sharia. Actúan como técnicas indirectas de control monetario y se asimilan a las operaciones de mercado abierto.

Más recientemente, Bidabad (2019) reconoce la inutilidad de los instrumentos monetarios del sistema bancario convencional en la política monetaria del sistema islámico, ya que el instrumento más influyente de la política monetaria, las operaciones de mercado abierto, no están permitidas. Por ello, propone un sustituto de las operaciones de mercado abierto sin intereses, que son los "Bonos Swap de Rastin", que respetan el derecho del prestamista a tomar prestada una cantidad igual a su préstamo del prestatario. En caso contrario, adopta la forma de una deuda igual a un préstamo futuro o de un préstamo igual a una deuda futura. De acuerdo con la Shariah, no se fija ningún tipo de interés a nivel de este bono, sin embargo su precio se determina en función del precio de mercado sin que el rendimiento del bono esté fijado o predeterminado. Este instrumento se está tramitando en Irán, pero aún no se ha puesto en marcha, por lo que sus implicaciones prácticas aún no se evalúan (Bidabad 2019)

Rifki Ismal (2011) parte del principio de que el sistema financiero islámico necesita instrumentos específicos a su naturaleza, así, su estudio es el primero en proponer instrumentos específicos para el modelo islámico de acuerdo con la Sharia, estos instrumentos responden a necesidades específicas a saber :

- El certificado Wakalah wa Ijarah :con el objetivo principal de resolver el problema de liquidez mediante el uso de fondos no utilizados en lugar de inyectar nueva liquidez. La contracción monetaria a nivel de esta herramienta, corresponde al principal del certificado, y la

expansión del dinero representa la compra del activo, el pago de los rendimientos y el reembolso del principal.

- El certificado de Wakalah wa Ijarah Muntahia Bitamlik :Es similar al anterior. Con el objetivo de lograr un mayor impacto expansivo, el pago regular a los depositantes incluye el pago de los rendimientos y el reembolso del principal. Si el gobierno es el arrendatario de dicho activo, la transferencia de propiedad que genera es beneficiosa para la transacción monetaria.
- El certificado Musharakah Mutanaqisah wa Ijarah :Tiene como objetivo la absorción de liquidez porque los titulares de los certificados no reciben sus ingresos regularmente del banco central. El gobierno tendrá la ventaja de convertirse en el inquilino del proyecto. Así, la contracción monetaria en este instrumento está representada por la cuota de los inversores en un proyecto y la expansión monetaria está representada por los gastos necesarios para la ejecución de un proyecto.
- El certificado islámico de titulización wa Ijarah :Es similar al anterior. Hay un impacto expansivo real cuando el banco central libera sus ingresos regulares de Ijarah a los depositantes para recuperar los activos. Para controlar mejor el impacto del exceso de liquidez a corto plazo, el banco central debería gestionar con precisión el tiempo entre la contracción y la expansión de este instrumento. (Ismal, 2011)

1.2. Los canales de transmisión de la política monetaria:

➤ *El canal del tipo de interés:*

Es el actor fundamental en la transmisión de la política monetaria en la corriente keynesiana. Bajo el supuesto de la rigidez de los precios, este canal se caracteriza por la importancia que otorga a la tasa de interés real en lugar de la nominal, como la que influye en la actividad económica. Cuando el banco central ejerce cambios en el tipo de interés nominal a corto plazo, el tipo de interés real a corto y largo plazo cambia sistemáticamente. Este proceso se explica por la rigidez de los precios, de modo que una política monetaria encaminada a reducir la tasa de interés nominal a corto plazo también baja la tasa de interés real de corto plazo. (Mishkin, 1996)

Sin embargo, los bancos centrales no son los únicos que controlan la creación de dinero o los tipos de interés. De hecho, los bancos convencionales también son capaces de crear dinero mediante la creación de deuda.

En la actualidad, la mayoría de los bancos islámicos se encuentran en países con sistemas financieros duales, que operan uno junto al otro a los bancos convencionales en mercados monetarios muy sofisticados. En consecuencia, los bancos islámicos operan en sistemas financieros en los que los tipos de interés son dominantes, lo que repercute en los costes de

financiación y el rendimiento de las cuentas de inversión de los bancos islámicos. Por esta razón, algunos bancos islámicos utilizan los tipos de interés para fijar las condiciones de los contratos Murabahah e Ijara.

Sin embargo, a pesar de este enfoque, parece que los bancos islámicos pueden verse influidos por las variaciones de los tipos de interés, por lo que la transmisión de la política monetaria a través de los tipos de interés será menos eficaz, especialmente en presencia de grandes bancos islámicos. (Khatat, 2016)

➤ ***El canal del tipo de cambio :***

Con el crecimiento de la internacionalización económica, el tipo de cambio se ha convertido en uno de los principales actores en la transmisión de la política monetaria. Además, este canal interactúa con la transmisión de los tipos de interés. Así, la disminución de los tipos de interés conduce a una depreciación de los depósitos nacionales frente a los depósitos en moneda extranjera, lo que resulta en la depreciación de la moneda nacional. Por lo tanto, el tipo de cambio desempeña un papel crucial en la forma en que la política monetaria afecta a la economía nacional. (Mishkin, 1996)

De hecho, los bancos islámicos hoy operan en países que aplican un tipo de cambio fijo o un régimen de objetivos monetarios, como los países del Consejo de Cooperación del Golfo, Jordania y Brunei, mientras que Bangladesh y Yemen permiten una flexibilidad limitada del tipo de cambio. Además, los países con bancos islámicos y tipos de cambio flexibles se caracterizan por una inflación más estable y un crecimiento menos estable que los países con tipos de cambio más flexibles. (Khatat, 2016)

➤ ***El canal de crédito:***

La tasa de interés y el tipo de cambio no son los únicos canales a través de los cuales la política monetaria impacta la actividad económica, el canal del crédito es también una herramienta determinante en la transmisión de la política monetaria. La teoría distingue entre dos tipos de canales de crédito, el primero es el canal de crédito bancario que se basa en el multiplicador de crédito y que pierde su eficacia con la liberalización financiera, cuando los bancos acceden fácilmente a los recursos financieros externos. (Khatat, 2016)

El segundo se refiere al canal del balance, que se refiere a la situación financiera de los posibles prestatarios. (Creel y Levasseur, 2006).

Para los países con sistemas financieros duales, los saldos de reservas pueden desempeñar un papel fundamental en la conducción de la política monetaria. En consecuencia, el canal de crédito o financiación de los bancos islámicos depende del grado en que el banco central sea capaz de proporcionar liquidez a los bancos islámicos y de la capacidad de estos últimos para reorientar su oferta de crédito / financiación en respuesta a las variaciones de sus saldos de reserva en el banco central. Sin embargo, este canal se vuelve ineficaz cuando los bancos islámicos o convencionales tienen un exceso de

liquidez o cuando la oferta y demanda de crédito están limitadas. (Khatat, 2016)

2. Instrumentos de política monetaria: un estudio exploratorio

➤ Metodología :

Para analizar mejor los instrumentos de la política monetaria, realizamos un estudio exploratorio a través del análisis de los bancos centrales de los países del CCG y de Irán, con el fin de extraer las herramientas con las que los bancos centrales dirigen la política monetaria en los dos casos de forma diferenciada. El siguiente cuadro (**Cuadro 1**) presenta los diferentes países incluidos en el estudio, así como la naturaleza de sus sistemas financieros:

Cuadro 1 : La lista de países del estudio exploratorio y la naturaleza de sus sistemas financieros

País	Naturaleza del sistema financiero
Irán	Islamizado
Bahrain	Dual
Arabia Saudí	Dual
Kuwait	Dual
Qatar	Dual
Omán	Dual
Emiratos Árabes Unidos	Dual

2.1. El caso de Irán : Principales Resultados

En 1984 se aprobó y entró en vigor la ley que prohíbe las prácticas usurarias en Irán. A diferencia de la experiencia pakistaní, que se puso en práctica de forma transitoria, Irán optó por la conversión de todo el sistema financiero.

La supresión del tipo de interés está en el centro de esta ley, por lo que la estructura de los balances bancarios ha sufrido cambios. En consecuencia, las dos cuentas que se han permitido son las cuentas de ahorro sin intereses y los depósitos de inversión a plazo con tipos de beneficio predefinidos. (Coville, 1994)

En consecuencia, los instrumentos directos e indirectos de la política monetaria se han adaptado para cumplir con la sharia. Son los siguientes:

Cuadro 2: Instrumentos directos del Banco Central de Irán

Instrumentos	Operación
Tipo de beneficio bancario	Tras la aplicación de la ley de bancos sin interés y la introducción de los contratos de rentabilidad fija y los contratos participativos, los dispositivos que permiten determinar la tasa de ganancia y la tasa de rentabilidad de los establecimientos bancarios son determinados por el Consejo de Dinero y crédito. Además, el banco central iraní puede intervenir en la determinación de estas tasas tanto para proyectos de inversión o de asociación como para otras facilidades otorgadas por los bancos.
Techo de crédito	De acuerdo con el artículo 14 de la ley monetaria y bancaria iraní, el Banco Central de Irán interviene para identificar a los bancos el perímetro de uso de los fondos y determinar el límite de préstamos y créditos para cada sector de actividad.

Cuadro 3: Instrumentos indirectos del Banco Central de Irán

Instrumentos	Operación
Coefficiente de reservas obligatorias	Los bancos están obligados a depositar una parte de sus pasivos en forma de depósito en el Banco Central de Irán. Según el artículo 14 de la Ley Monetaria y Bancaria iraní, el banco central está autorizado a determinar este ratio entre el 10 y el 30% en función de la composición de los pasivos de los bancos y del sector de actividad.
Documentos de participación del banco central	Tras la implementación de la ley bancaria sin intereses, se hizo necesario adaptar los instrumentos monetarios a los preceptos de la sharia. Las operaciones de mercado abierto han sido reemplazadas por el uso de títulos de participación y sociedades de inversión. Con este instrumento, el banco central iraní puede ajustar el dinero en sentido amplio (M2) a través de la base monetaria y así puede controlar la tasa de inflación.
Abrir una cuenta de depósito especial en el banco central	Debido a la supresión de los intereses en su actividad bancaria, Irán utiliza la apertura de una cuenta especial de depósito en el banco central como uno de los instrumentos indirectos de su política monetaria. Este instrumento ayuda a controlar la liquidez absorbiendo el exceso de recursos de los bancos. Por lo tanto, el banco central paga beneficios a estos depósitos según normas específicas.

(El Banco Central de Irán)

Como hemos detallado en la revisión de la literatura, aparte del tipo de interés, los instrumentos directos convencionales pueden utilizarse en el sistema financiero islámico, ya que no todos se basan en el tipo de interés. A diferencia de los instrumentos monetarios indirectos, que en su mayoría se basan en los tipos de interés, los sistemas financieros islámicos deberían sustituirlos por herramientas conformes a la sharia. Este es el caso de Irán, como se indica en las tablas anteriores (**Cuadro 2 y 3**).

2.2. Caso de un sistema financiero dual: coexistencia de la banca islámica y convencional

En los sistemas financieros duales, la relación entre el banco islámico y el banco central es muy importante. De hecho, este último es el proveedor de liquidez para los bancos islámicos en caso de necesidad. Además, la confianza del público se basa principalmente en esta relación, porque mientras el banco central mantenga este tipo de intervención con el banco islámico, tranquiliza a los clientes principalmente en tiempos de crisis. (Mira, 2011).

El análisis de los bancos centrales de los países del CCG revela los siguientes resultados. De hecho, (**el cuadro 4**) ofrece respuestas a las siguientes preguntas:

- Cuando los bancos islámicos y los bancos convencionales coexisten en un sistema financiero, ¿existen instrumentos monetarios adecuados según los preceptos de la sharia? En caso afirmativo, ¿cuáles?
- ¿Y cuáles son los otros instrumentos con los que los bancos centrales acompañan la política monetaria?

Cuadro 4 : Los resultados del estudio exploratorio por países

País	¿Existen instrumentos monetarios islámicos?	¿Cuáles?	Instrumentos convencionales de política monetaria
Bahrain	Sí	<ul style="list-style-type: none"> - Wakalah conforme a la sharia - Sukuk-al-ijara - Sukuk-al-Salam 	<ul style="list-style-type: none"> - Operaciones de mercado abierto - Las exigencias de reservas - Tipo de cambio fijo
Arabia Saudí	Sí	<ul style="list-style-type: none"> - Sukuks 	<ul style="list-style-type: none"> - La proporción dereserva de dinero en efectivo (CRR) - Repos - Swaps de divisas - Colocación de fondos públicos
Kuwait	Sí	<ul style="list-style-type: none"> - Operaciones de Tawarruk 	<ul style="list-style-type: none"> - Tipo de cambio fijo - Subasta de depósitos - Límites máximos de los préstamos bancarios
Qatar	Sí	<ul style="list-style-type: none"> - Sukuks 	<ul style="list-style-type: none"> - Operaciones de mercado abierto - Coeficiente de reservas exigido - La ventana de descuento - Mercado monetario de Qatar - Operaciones de recompra de débito público-Repo
Emiratos Árabes Unidos	Sí	<ul style="list-style-type: none"> - Línea Murabaha colateralizada - Certificados de depósito islámicos 	<ul style="list-style-type: none"> - As exigencias de reservas minimas - Los certificados de depósito - Repo y amortización anticipada del certificado de depósito - Swaps de divisas - Mecanismo de crédito
Omán	No	<ul style="list-style-type: none"> - 	<ul style="list-style-type: none"> - La vinculación de la moneda - Requisitos de reserva - Repo/ Operaciones de repo inversa - Descuento/ redescuento de efectos comerciales - Certificados de depósito - Descuento de Letras del Tesoro - Swaps de divisas - Préstamo directo

De hecho, es evidente que los países del CCG han realizado algunos esfuerzos notables para emitir instrumentos financieros conformes con la sharia para satisfacer las necesidades de liquidez e inversión de los bancos y para hacer frente a la segmentación entre los mercados bancarios convencionales e islámicos.

De esta tabla, podemos ver que los países en los que los bancos convencionales operan junto a los bancos islámicos han puesto en marcha instrumentos monetarios para apoyar la actividad de los bancos islámicos, con la excepción de Omán, que todavía no ha puesto en marcha ningún instrumento monetario islámico.

Para los países que han optado por operar a través de un sistema financiero dual, la elección de los instrumentos monetarios islámicos sigue siendo limitada, principalmente los Sukuks y las operaciones Tawarruq. Sin embargo, los EAU parecen tener una seria ambición hacia el desarrollo de instrumentos monetarios islámicos a través de una ingeniería financiera innovadora.

Conclusión

Para cumplir con los objetivos de estabilidad monetaria y financiera, se supone que el sistema financiero islámico, al igual que su homólogo convencional, está sujeto a las mismas condiciones en materia de política monetaria. Para ello, el banco central utiliza varios instrumentos monetarios para regular la cantidad de dinero en circulación.

Sin embargo, cuando los dos sistemas financieros coexisten, la práctica de la política monetaria constituye un reto que invita a la reflexión. De hecho, la prohibición de ciertas prácticas, como el uso de tipos de interés, por parte de las finanzas islámicas crea una necesidad real de diseñar instrumentos adecuados a los preceptos de la Sharia.

Así pues, la coexistencia de los bancos islámicos con los bancos convencionales requiere el desarrollo de instrumentos monetarios conformes a la sharia para mejorar la eficacia de las operaciones monetarias. Un fuerte compromiso de los bancos convencionales en este sentido igualaría las condiciones.

Los sistemas financieros duales suelen caracterizarse por el desarrollo del sector bancario convencional más que el islámico. Esto dificulta el funcionamiento de la política monetaria cuando los dos sistemas se encuentran en diferentes niveles de desarrollo.

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Effect of Green Manufacturing on Operational Performance of Manufacturing Firms in Mombasa County, Kenya

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Abstract

This paper focuses on investigating the effect of green manufacturing on operational performance of manufacturing firms. The study adopted cross-sectional survey design and data was collected across all the 61 manufacturing firms listed by KAM in 2019 through questionnaires. The study used Regression Model technique to analyze the quantitative data and validate the developed research model. Green manufacturing was found to have a positive effect on operational performance. Green product design and development, GSCM, and efficient processes had significant effect in enhancing operational performance while end-of-life product management was found to have insignificant relationship with operational performance.

Keywords: Green Manufacturing, Operational Management, Green Supply Chain Management, Efficient Processes, Green Product and Process Design, End-of-Life Product Management

Introduction

Due to globalization, firms have shifted to competing within supply chains by reducing cost of production, increasing flexibility, continuous quality improvement, and improvement on delivery (Famiyeh, Adaku, Gyampha, Darko & Teye, 2018). Customers are changing their behavior by integrating environmental considerations into their lifestyles. As a result,

purchasing decisions are made based on how well these products satisfy their needs and the effect they have on the natural environment. Industries are striving to enhance competitiveness within the supply chain by meeting the needs of their customers effectively (Rundh, 2013). The cost of energy is going up due to the world experiencing energy crises more frequently than ever (Li & Zhang, 2018), which has led to the necessity to reduce fuel consumption and use of renewable energy. Consumption of natural resources such as fuel, minerals, water, and food is on the rise every day with their availability shrinking. Therefore, it is paramount to conserve and manage resources (Bhattacharya, 2011) in order to enhance sustainability. Pollution levels are increasing every year with industrialization which leads to global warming and climatic change that negatively impacts the quality of life. There is a need for manufacturing firms to engage in sustainability in manufacturing by engaging in practices that use less natural resources and more renewable resources with little or no pollution (Zhang, 2018).

Kenya is an agricultural-based economy that is currently faced with teething problems in industrialization. Climatic change has also adversely affected the country's economy due to the increased frequency of droughts and famine, which has led to the straining of resources such as energy, water, and raw materials (UNICEF, 2017). As a way of curbing the effects of over-reliance on agriculture, the country has set up a grand plan towards achieving industrialization by 2030. Manufacturing sector in Kenya has constantly contributed 11% to GDP for the last decade, which is an indication that it has remained flat (GoK, 2018). Kenya is an emerging economy that is striving to move away from agriculture-based economy to an industrial and middle-income economy. Thus, the manufacturing sector is required to grow its share in GDP contribution to achieve this objective (GoK, 2020).

According to KAM (2019), manufacturing industries carry out processing and value addition. Examples of manufacturing industries include building, mining and construction; chemical and allied; energy, electrical and electronics; leather and footwear; metal and allied; automotive; paper and board; pharmaceutical and medical equipment; plastics and rubber; textile and apparel; timber, wood and furniture; agriculture and fresh produce. An estimate of 9% of the total population of Kenya is in the coastal region and is growing at the rate of 2.9% per annum, which is relatively faster than the national growth of 2.7% per annum (GoK, 2019). This leads to an increase in the demand of products, and manufacturers are setting up industries in Mombasa to meet the demand. Natural resources are strained and industries face challenges of energy waste minimization, waste management, and compliance to regulations and policies. The ecosystem in the environment receives watershed discharge into the ocean which has an impact on biodiversity, productivity, and system functioning (NEMA, 2018).

Manufacturing firms are under intense pressure to improve productivity and, at the same time, enhance environmental sustainability (Ahmad, 2015). Adopting green energy, green process, waste management, and minimization and reduction of pollution enables the manufacturing enterprises to enhance performance objectives such as reducing cost, corporate image, and reduced discharge of hazardous substances to the environment. Green manufacturing practices help to optimize resources, improve reliability, and reduce pollution (Famiyeh et al., 2018). They also ensure waste reduction which translates to better consumption of resources through the use of fewer raw materials and maximizing energy efficiently. This has an effect in cost reduction and quality improvement (Sivapirakasam, Mathew & Surianayana, 2011).

Eshikumo (2017), Orji and Wei (2017), Fore and Mbohwa (2014), and Shrivastava and Shrivastava (2016) carried out studies on green manufacturing and operational performance on a single manufacturing firm. The studies acknowledged that there is a need to expand research to cater for a number of industries since the results may not be generalizable to all the industries. The initial capital required to purchase manufacturing equipment and machines is high, and most firms in developing countries are unable to upgrade the archaic methods used in production (Fore & Mbohwa, 2014). Thus, the concern is reflected in the shift to green manufacturing and its ability to commensurate gains in the cost reduction.

Research Objectives

The broad objective of the study was to determine the effect of green manufacturing on operational performance of manufacturing firms. The specific objectives of the study were:

- i. To establish the effect of green product and process design on operational performance of manufacturing firms.
- ii. To examine the effect of efficient processes on operational performance of manufacturing firms.
- iii. To establish the effect of GSCM on operational performance of manufacturing firms.
- iv. To find out the effect of end-of-life product management on operational performance of manufacturing firms.

Hypothesis

The hypothesis of the study was:

H_0 : Green manufacturing has no significant effect on operational performance of manufacturing firms in Mombasa County, Kenya.

H_1 : Green manufacturing has significant effect on operational performance of manufacturing firms in Mombasa County, Kenya

Literature Review

Theoretical Foundations

The study was anchored on Ecological Modernization Theory, Informational Theory, and Natural Resource Based View. Ecological Modernization Theory explains how pressures exerted by external institutions force manufacturing firms to adopt green manufacturing. The theory encompasses the evolving politics of pollution that refer to dynamism of regulations and their impact on environmental innovations. The theory also posits that manufacturers can gain operational performance improvements through innovations and enhancing their competitive advantage (Murphy & Poist, 2003). Furthermore, manufacturers are adopting production systems that minimize the negative impacts of operations on the environment and natural resources (Kazancoglu et al., 2018; Bai & Sarkis, 2018; Laosirihongthong & Tan, 2013). Manufacturers are also striving to comply with regulations and policies set by governments and environmental institutions on carbon emission limits through the use of 6R strategy which involves redesign, reduce, remanufacture, recycle, reuse, and recover (Toptal, Ozlu & Konur, 2014; Vachon & Klassen, 2007; Ouardighi, Sim & Kim, 2016). The formulation of international environmental regulations such as RoHS, WEEE, and ISO 14000 series coupled with increased environmental awareness of consumers have a significant impact on manufacturing firms and global trade (Chen, 2011; Terlaak, 2007).

Information theory explains how manufacturing firms should continuously and effectively communicate with their customers to enhance competitive advantage. Greater interactions through congruence, closeness, and collaboration between the manufacturers and other external institutions enhance sharing of information which reduces information asymmetry (Erlandsson & Tillman, 2009). According to Sarkis (2012), firms may want to communicate their environmental performance to external stakeholders. However, this may be challenging due to inadequate information on the materials flowing through their supply chains. Implementation of ISO 14001 certification by manufacturers is a signal to the market that the firm is operating within recognized environmental management practice (González et al., 2008). Poorly performing units may adopt ISO 14001 certification which is a signal to the market that they are improving operations. Nevertheless, this may not be the case (Terlaak, 2007).

Natural Resource Based View (NRBV) theory articulates the interconnections among firm resources, capabilities, and competitive advantage. The firm should look for opportunities to gain competitive advantage from within rather than from the external environment. Tapping into resources that are valuable, scarce, inimitable, and non-substitutable maintains the competitive advantage of a firm (Alberto & Sharma, 2003; Shi,

Koh, Baldwin & Gucchiella, 2012). NRBV focuses on two dimensions: the first dimension involves environmental pollution prevention. In this dimension, the firm designs, produces, and markets products that minimize negative effects to the environment throughout the product life cycle (Vachon & Klassen, 2007). The second dimension involves sustainable manufacturing, whereby the firm adopts strategies that minimize waste, utilize energy efficiently, and maximize clean technologies (Hart & Gowell, 2011; Alberto & Sharma, 2003). A firm's development in its resources and capabilities is demonstrated through improvements in quality and speed, reduction in cost, and increased flexibility. Therefore, building on these operational capabilities through green manufacturing supports the aspects of value, scarcity, distinctiveness, and non-substitutability which are features of NRBV that enhance the competitive advantage of the firm (Menguc & Ozanne, 2005; Shi et al., 2012).

Green Manufacturing

Green Manufacturing is a 'new' manufacturing model that puts into consideration environmental sustainability and resource optimization throughout the product life cycle (Deif, 2011). The model aims at maximizing resource efficiency and minimizing negative impacts to the environment while reaping maximum economic and social benefits. Green manufacturing puts emphasis on abating the environmental effect by reducing, reusing, recycling, and remanufacturing which leads to source reduction, optimization of resource consumption, and enhancing use intensity (Fore & Mbohwa, 2014; Shang, 2010). Green manufacturing dimensions also include green design and development, GSCM, investment recovery, and efficient processes (Shrivastava & Shrivastava, 2017; Neto et al., 2009; Rehman & Shrivastava, 2013). Green manufacturing involves recycling, waste reduction management, regulatory compliance, environmental protection, and pollution management (Rehman & Shrivastava 2013; Orji & Wei, 2016). According to Eltayeb (2019), green manufacturing has four dimensions: sustainable product design, sustainable process, sustainable supply chain management, and sustainable end-of-life management.

Green product design is enhanced through the use of design for the environment, which helps manufacturers to design products that meet specific environmental goals (Johansson & Lindhqvist, 2005). At the design stage, the designer views the manufacturing through a closed loop that starts at design stage to product recovery management (Deif, 2011). All materials and energy requirements through the product life are considered. Green product design aims at reducing or eliminating hazardous material, minimizing waste in the product through the use of less material, designing products with recycling or re-use capabilities, and designing products for re-manufacturability and

appropriate shapes and volume for minimal space consumption during storage and transportation (Khor & Udin, 2013). Product sequencing is designed in a way to minimize motion which saves energy, cost, and time (Zhu & Shang, 2008). Equipment and machine parameter controls are efficiently designed to minimize wastage through reworks and energy wastage. Raw materials considered for manufacturing of products by the designers should enhance sustainability by being less hazardous to the environment, minimize wastage of resources such as energy, and utilize green processes (Orji & Wei, 2016).

Efficient processes are those processes that use green energy which minimizes wastage of resources with no rejects or rework required on products. The processes generate less undesirable wastes by minimizing production of solid wastes and reducing emission of green-house gases (Rashid, Sakundarini & Thurasamy, 2017). The processes must have reliable and measurable standards that are defined by baseline quality controls (Chen, 2011). Efficient processes do not only meet but also exceed the quality conformance standards. Efficient processes also use minimum resources to create value addition in manufactured products that enhance competitive advantage (Elyateb, 2019). Green manufacturing technologies lead to substitution of raw materials with alternative raw materials, which are less hazardous, have re-manufacturing, as well as re-use and recycle capabilities (Varma, 2006; Ahn, 2014). The wastes are minimized through efficient use of resources by enhancing use intensity and any little wastes produced are consumed internally or recycled (Rosen & Kishawy, 2012). Emission of gases and discharge of harmful wastes to the environment are highly controlled with the processes fitted with control filters (Ahmad, 2015). Resource reduction is enhanced by conservation of energy through batch optimization and proper product mix, with manufacturing firms adopting continuous processes (Rosen & Kishawy, 2012; Rehman & Shrivastava, 2013). Green processes enable firms to reduce material cost variance, improve on process efficiency and effectiveness, and reduce negative effects to the environment (Zhu & Sarkis, 2007). This enables the firms to improve profit margins and grow market share. Employees should be empowered so as to incorporate total quality management principles in the production processes (Rao & Holt, 2005). Use of safety systems and prevention measures are adhered to during production to prevent risks, damage, and accidents (Shi et al., 2012).

In addition, the relationship between green supply chain management (GSCM) and green manufacturing has significant implications to operational performance of the organization and environmental sustainability (Eltayeb, 2019). Collaboration between manufacturers and suppliers is essential to ensure that manufacturers supply raw materials, which are less hazardous and meet the required safety and health standards (Rao & Holt, 2005; Sroufe, 2005). Compliance of suppliers to regulations and policies, eco-labelling and

disclosure of products by use of environmental management system (EMS), reduces negative impacts to the environment by eliminating hazardous materials at the source (Eltayeb, 2019; Rao & Holt, 2005). GSCM involves green warehousing where inventory levels are maintained at optimum levels with the objective of reducing inventory cost and usage of space (Eltayeb, 2019). Green packaging involves packaging products at reduced package materials. It also involves materials that can be recycled/re-used or materials that are harmless to human or animal life (Shi et al., 2012). Appropriate storage and apt disposal of hazardous materials eliminates waste, and negative effects to the environment are also considered a dimension of GSCM (Rashid et al., 2017). Greening SCM is positively associated with competitiveness since it leads to reduction of costs due to elimination of waste. Consequently, this provides customers with the same value at a reduced cost (Cosimato & Troisi, 2015). Customer collaborations are an essential factor in GSCM since they ensure that customer needs are met effectively and their voice will be hard wired into the products (Vijayvargy, Thakkar & Agarwal, 2017; Bai & Sarkis, 2010).

End-of-life management aims at sustaining long-term ecological balance through recycling, re-use, and remanufacturing. Therefore, natural resources are safeguarded from depletion while ensuring that the environment is not harmed by disposal of materials (Eltayeb, 2019). Recycling, re-use, and remanufacturing must be factored in during product design and development through designing products for the environment. Thus, the organization should have a clear plan whereby components or materials should be recovered for remanufacturing or recycling at end of product life (Deif, 2011). Recycling is the most common recovery management method because it generates economic value for materials recovered through restoration of the functional capability that allows re-use. Therefore, the continuous use of new raw materials decreases which leads to improved sustainability (Maruthia & Rashmi, 2015; Alvi, 2013). The manufacturer must maintain contact with the customer for purposes of collection of the product after end-of-life for either proper disposal, for remanufacturing or replacement during the warranty period. This has an advantage to the manufacturer because the changes in the needs of the customer can be easily identified, resulting in competitive advantage (Rao & Holt, 2005). End-of-life management also helps in reducing cost through reduction in the consumption of virgin raw materials and reduction in material supply risk. Thus, natural resources are conserved and negative impacts to the environment are reduced tremendously (Khor & Urdin, 2013).

Operational Performance

Operational performance is the strategic dimension by which a company focuses to compete in (Narasimhan & Das, 2001). These dimensions are cost, quality, flexibility, and speed (Ketchen, Rebarick, Hult & Meyer, 2008). Therefore, manufacturing capabilities must be directed towards enhancing competitive priorities, thereby allowing the business unit to translate these dimensions to strategic capabilities. Operational performance seeks to reduce costs, achieve step-changes in productivity, and ensure that the customers are satisfied, leading to an improvement in organization profits. Operational performance further seeks to reduce operational cost and improve asset utilization through better maintenance, operating practices, and debottlenecking (Sawhney, 2006). Firm's competitive advantage depends on the ability to manipulate the four dimensions over their competitors. To reduce production costs, the manufacturers employ strategies that use energy efficiently, reduce inventory levels to optimal levels, employ processes that are efficient, reduce transportation costs due to proper location of warehouses and optimal product designs, and eliminate wastage of resources (Famiyeh et al., 2018; Orji & Wei, 2016).

More so, the quality of product can be perceived as conformance of products to specifications. Therefore, performance measures ought to focus on eradicating non-conformance (Chen, 2011) so as to reduce costs and wastes incurred in rework and re-engineering. Poor quality leads to low stakeholder satisfaction, products failing in the market, and damage to the firm's image (Zhu, Sarkis & Geng, 2005). Quality of products and processes can be achieved through quality management systems, green culture, and continuous improvement (Famiyeh et al., 2018).

Dynamism in customer needs has a significant impact on the manufacturing operations. This is because they should be customized towards meeting the needs of the customers, enabling the firm to remain competitive. There is increased environmental awareness to enhance sustainability. Hence, governments and organizations have set up policies and regulations (Kazancoglu et al., 2018) which are changed overtime (Alvi, 2013). Manufacturing strategies should be flexible in order to keep up with the changes in the external and internal environment. To deal with the changes, manufacturing firms adopt green manufacturing. Speed is the measure of how a company responds to customer needs in a timely manner in accordance with planned prices and costs (Ketchen et al., 2008). Therefore, manufacturing firms should optimize the product mix and batch size through the use of continuous production processes (Digalwar et al., 2016). Reducing time to market teamwork and collaborations is necessary in order to meet the needs of customers effectively, which in turn positively influences competitive advantage (Chase, Jacobs & Acquillano, 2011).

Empirical Review

A study by Shrivastava and Shrivastava (2016) opined that by adopting green production processes coupled with efficient use of energy, Indian cement manufacturers were able to cut cost and reduce negative effects of production to the environment without losing quality, reliability, and performance. Also, according to a study carried out by Fore and Mbohwa (2014), most of the South African Cement manufacturers used archaic methods. It was necessary for the industries to invest in process optimization and process control innovations in order to minimize waste and reduce the environmental impact on lime production. The manufacturing industries that adopted green methods such as bucket transport minimized the spillage and this led to reduction in waste of the raw materials and reduced emissions to the environment. They suggested that good housekeeping practices such as maintaining optimal inventories leads to reduction in production costs.

A study by Eshikumo (2017) opined that green manufacturing practices such as waste reduction and use of energy efficient processes has an effect of reducing cost of the production in cement manufacturing and thus enhancing operational performance. From the study, the firms that adopted green manufacturing practices minimize cost while preventing environmental pollution. They suggested that in Kenya, there was a need to enforce laws and regulations on environmental pollution since most of the industries had not adhered to the laws and regulations laid down. The study further revealed that green manufacturing practices are positively related to reduction of cost, which results from reduction of waste. A study by Orji and Wei (2016) established that the overall production cost of green manufacturing firms is much less than that in conventional manufacturing firms.

A study by Li and Zhang (2018) also revealed that green manufacturing positively impacts the environment due to reduction in waste, gases emission, and use of virgin materials. Another study by Digalwar et al. (2017) postulates that effective implementation of green manufacturing improves quality and reduces production cost. Furthermore, a study by Sezen (2011) suggested that eco-innovative processes enhance sustainability performance since green manufacturing lowers material cost and reduces production inefficiencies. Rao and Holt (2005) established that a strong positive association exists between green practices and environmental performance. This is in coherence with findings of a research carried out by Zhu and Sarkis (2005).

Methodology

Research Design and Population

The research design for the study was cross-sectional survey design with mixed elements of qualitative and quantitative approaches. Cross-

sectional study was suitable since data was collected across several firms at one point in time (Cooper & Schindler, 2006). The research design has been used in several studies (Rao & Holt, 2015; Shrivastava & Shrivastava, 2016; Deif, 2011; Digalwar et al., 2017). The target population of the study was 61 manufacturing firms registered by KAM as at 31st December 2019 which were located within Mombasa County (KAM, 2019).

Data Collection and Analysis

Data was obtained via a matrix structured questionnaire. In designing the questionnaire, a five-point Likert scale with items ranging from '1= not at all' to '5 = very great extent ' were selected. Data was collected from operational managers because they are regarded as key informants with knowledge about the research topic (Kim et al., 2011; Purdie & Hattie, 2003). A total of 61 questionnaires were issued using the drop-and-pick method. Multiple regression and correlation analysis were used for the study. Multiple regression was used to establish the relationship between the variables. The multiple regression model used to guide data analysis is as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon \dots\dots\dots \text{Equation 1}$$

Where Y is the dependent variable, which is operational performance of manufacturing firms. β_0 is the Y intercept, which is the other factor affecting operational performance. β_1 , β_2 , β_3 , and β_4 are the coefficients of the predictor variable. X_1 is green product design and development; X_2 is efficient processes; X_3 is GSCM; X_4 is end-of-life management, and ε is the error term. Descriptive statistics was used to analyze data collected on general information of the manufacturing firms and the variables.

Correlation analysis was used to test for the relationship between the independent variable and the dependent variables. Coefficient of correlation and p-values were calculated and multi-collinearity was checked against the sub variables of the independent variable to test for the absence of correlation amongst the variables. Normality tests were determined by use of the Shapiro-Wilk test. Cronbach's Alpha was used to verify the reliability of each construct and items used in the study. The face validity of the questionnaires was enhanced by administering the questionnaires to five managers in the operational department. Thereafter, they were adjusted to cater for the raised issues. Content validity was ensured in the data collection tool through consultation with experts from literature (Hair, Money, Samuel & Page, 2007).

Findings and Discussion

Response Rate

Out of the 61 questionnaires distributed, only 45 firms responded. The response rate was 73.77%. Some firms did not respond because they had no

survey policy, while others were due to flat refusal of respondents to respond to the questionnaire. The firms were distributed across all the sectors: Food, Beverage and Tobacco had majority of respondents (29.2%), Plastics and Rubber (13.3%), Chemical & Allied (11.1%), Textile and Apparels (8.9%), Motor Vehicles & Accessories (8.9%). Building, Construction & Mining, Metal & Allied, and Electrical & Electronics both constituted 6.7% of the respondents. Also, 4.4% of the industries surveyed dealt with Paper & Board while Pharmaceuticals & Medical and Consultancy & Industrial Services had 2.2% each.

Reliability Tests and Normality Tests

Exploratory factor analysis (EFA) was done using principal component analysis with Varimax rotation. Before assessing the factor loadings, Kaiser-Meyer-Olkin Measures of sampling adequacy were evaluated to check the factorability of the items. For every EFA, it was found that manifest variables had KMO Measures of Sampling Adequacy above 0.665 as presented in Table 1. The value of KMO was above the threshold of 0.6 (Kaiser, 1974).

Table 1. KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.665
Bartlett's Test of Sphericity	Approx. Chi-Square	42.068
	Df	6
	Sig.	.000

Table 2 represents Cronbach's Alpha, which was 0.633 at 5% significance level indicating that the constructs were reliable since it surpasses the threshold of 0.6 (Hatcher,1994).

Table 2. Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
.633	.649	4

The factor loadings for the constructs ranges from 0.594 to 0.82 as illustrated in Table 3, which is above the 0.3 threshold required that confirms high reliability. Green product design and development had a factor loading of 0.698, efficient processes had a factor loading of 0.82, GSCM had factor loadings of 0.741, and efficient processes had factor loading of 0.594.

Table 3. Factor Loadings

Variable	Cronbach's Alpha	Factor loading	Item total-correlation
Green product design and development	0.849	0.698	0.622
Efficient processes	0.609	0.82	0.720
GSCM	0.645	0.741	0.712
End-of-life product management	0.602	0.594	0.544

The test for normality was done through the use of Shapiro-Wilk and the results are presented in Table 4. Green product design had p-value of 0.280, efficient process had p-value 0.561, GSCM had p-value of 0.060, and end-of-life product management had p-value of 0.360. All the p-values were found to be more than 0.05 which implies normal distribution.

Table 4. Normality Tests

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Green product design and development	.133	45	.045	.943	45	.280
Efficient processes	.089	45	.200*	.979	45	.561
Green supply chain management in manufacturing	.178	45	.001	.922	45	.060
End-of-life product management	.117	45	.138	.973	45	.360

Descriptive Analysis

Green Manufacturing

Green manufacturing had four variables, namely: green product design and development, efficient processes, GSCM, and end-of-life product management.

Design of products and processes for environmental sustainability was to great extent (Mean=4.0222, SD=0.98832). Product and process design for recycling was to moderate extent (Mean=3.3311, SD=1.14460), design of products for remanufacturing was to moderate extent (Mean=3.0444, SD=1.10691), and design for reduction of material consumption was to great extent (Mean= 3.8444, SD=0.97597). Reduction of energy consumption was to great extent (Mean=3.933, SD=1.13618), reduction consumption of non-renewable resources was to moderate extent (Mean=3.3778, SD=1.13396), and design for storage and transportation was to great extent (Mean=3.5111, SD=1.19891). The grand mean for green product design and development was 3.5775, indicating that the surveyed firms practiced green product design and development to great extent.

Table 5. Green Product Design and Development

	Mean	Std. Deviation
Design of processes and product for environmental sustainability	4.0222	.98832
Design for recycling	3.3111	1.14460
Design products for remanufacture	3.0444	1.10691
Design products for material reduction	3.8444	0.97597
Design products for renewable energy	3.9333	1.13618
Design products and processes that saves energy	3.3778	1.13396
Designing products for transportability	3.5111	1.19891

Reduction of virgin material consumption was to great extent (mean=3.8667, SD=0.91949) and reduction in energy wastage through efficient process was to great extent (mean=3.5556, SD=0.89330). Reduction of consumption of non-renewable energy was to moderate extent (mean =3.2444, SD= 1.11101). Elimination of hazardous and toxic materials in processes was to great extent (mean=4.0022, SD=1.23378). Reduction of emission of harmful gases to the environment was to great extent (mean=3.7111, SD=0.86923). Recycling of internal waste was to a moderate extent (mean = 3.2889, SD=0.99138). Reduction of scrap and reworks was to great extent (mean= 4.0667, SD=1.00905). Reduction of energy consumption was to great extent (mean = 4.0222, SD=0.89160). Reduction of material wastage was to a moderate extent (mean=3.4000, SD=1.00905). Therefore, the grand mean of 3.6884 implies that efficient processes amongst the manufacturing firms were to great extent.

Table 6. Efficient Processes

Efficient Processes	Mean	Std. Deviation
Recycling/ reusing materials for product manufacturing	3.8667	.91949
Energy saving processes	3.5556	.89330
Processes that use green energy	3.2444	1.11101
Elimination of hazardous and toxic materials	4.0222	1.23378
Control emission of harmful gases to the environment	3.7111	.86923
Recycling of internal waste generated	3.2889	.99138
Reduction in reworks and scrap	4.0667	1.00905
Green culture	4.0222	.89160
Reduction in material wastage	3.4000	1.00905

Reduction in overall packaging of the products was to great extent (mean=4.2, SD=1.057). Purchasing raw materials from suppliers having environmentally friendly principles was to great extent (mean=4.00, SD=1.066). Transport modes with reduced energy were to great extent (mean=3.80, SD=1.1035). Reduction of disposal of packaging materials was

to great extent (mean=3.711, SD=0.895). Reduction in pollution by contracting firms that use environmentally friendly principles was to great extent (mean=3.5778, SD=0.8113). Reduction on inventory levels was to great extent (mean=3.5111, SD=1.29021). Proper space utilization during storage and transportation was to moderate extent (mean= 3.4667, SD=1.07872). Delivery of products to the user site was to moderate extent (mean=3.3333 SD= 1.10782). Reduction in the use of non-biodegradable packaging material was to moderate extent (mean=3.0222, SD=1.252). Therefore, the grand mean of 3.6247 implies that manufacturing firms were practicing GSCM to great extent.

Table 7. GSCM

GSCM	Mean	Std. Deviation
Reduction overall packaging of products	4.2000	1.05744
Purchasing raw materials from suppliers having environmentally friendly principles	4.0000	1.06600
Transport modes with reduced energy wastage	3.8000	1.01354
Reduction of disposal of packaging material by using materials with recyclable contents	3.7111	0.89499
Reduction in pollution by contracting firms that observe environmentally friendly principles or EMS certified	3.5778	.81153
Reduction on inventory levels	3.5111	1.29021
Proper space utilization during storage and transportation of the product	3.4667	1.07872
Delivery of products directly to the user site	3.3333	1.10782
Reduction use of non-biodegradable	3.0222	1.25207

Installation of collection points (mean=3.6444, SD=1.111) and safe disposal of non-recyclable waste (mean=3.556, SD=0.94281) were practiced to great extent. Returning packaging material to suppliers (mean=3.400, SD=1.13618), employing individual firms to collect waste generated (mean=3.3778, SD = 1.07215), provision of appropriate advice to customers (mean=3.200, SD=0.99087), and systems to monitor reverse logistics (mean= 3.0444, SD= 0.97597) were practiced to moderate extent among the firms surveyed as represented in Table 8. Cronbach's Alpha was 0.602 which confirms reliability and construct validity. A grand mean of 3.3704 was observed for end-of-life product management, implying that end-of-life product management among manufacturing was practiced to a moderate extent.

Table 8. End-of-Life Product Management

End-of-life product management	Mean	Std. Deviation
Installation of collection points for collection of used products and packaging for reuse and recycling	3.6444	1.11101
Safe disposal of non-recyclable waste (especially hazardous waste)	3.5556	.94281
Used products and packaging are returned to suppliers for reuse or recycling or remanufacturing	3.4000	1.13618
Employing individuals or firms to collect waste generated by our firm's products.	3.3778	1.07215
Provision of appropriate advice to customers on the environmental aspects of handling, use, and disposal of our firm's products	3.2000	.99087
Employing systems to monitor reverse flows of materials	3.0444	.97597

Green product design and development was to great extent (Mean=3.5775), Efficient processes was to great extent (Mean=3.6884), GSCM was practiced to great extent (Mean=3.6247), and end-of-life product management was to moderate extent (Mean=3.3074). The results of the findings are represented in Table 9.

Table 9. Summary of Green Manufacturing Variables

Variable	Mean	Standard deviation
Green product design and development	3.5775	1.0978
Efficient processes	3.6884	0.9920
GSCM	3.6247	1.0636
End-of-life product management	3.3704	1.0382

Operational Performance

Quality of the products (mean=4.2) improved by a great extent. This was made possible by the manufacturing firms adopting green manufacturing practices. Cost of operation (Mean=3.729) reduced by a great extent because of the adoption of green manufacturing practices. Speed in time to market (mean=3.393) greatly improved to a moderate extent because of the adoption of green manufacturing by the manufacturing firms. Flexibility in meeting customer demands (mean=3.207) by the manufacturing firms moderately improved because of the adoption of green manufacturing.

Table 9. Operational Performance Measures

Operational performance measure	Mean	Std. Deviation
Quality	4.2	0.9972
Cost	3.7926	1.1523
Flexibility	3.207	1.1036
Speed	3.393	1.1984

Coefficient of Determination

Green product design and development had a value of R² of 0.75, implying that it can predict operational performance up to 75%. Efficient processes had an R² value of 0.77, and this indicates that it can predict operational performance up to 77%. GSCM had an R² value of 0.59, thus it could only predict operational performance up to 59%. End-of-life product management is insignificant in predicting operational performance (R²=-0.23, p=0.889>0.05). Therefore, the coefficient of determination was at 95% confidence level, and the results are shown in Table 10.

Table 10. Coefficient of Determination

	Type III Sum of Squares	Mean Square	F	Adjusted R ²	Sig.
Green product design and development	33.625 ^a	33.625	4.571	0.75	.038
Efficient Processes	74.914 ^b	74.914	4.684	0.77	.036
GSCM	74.176 ^c	74.176	3.751	0.59	.049
End-of-life product management	.198 ^d	.198	.016	-0.23	.899

Regression Analysis

The established regression equation shows that:

$$Y = 5.352 + 0.140X_1 + 0.157X_2 + 0.135X_3 - 0.05X_4 \dots\dots\dots \text{Equation 2}$$

Where Y is the dependent variable, which is operational performance of manufacturing firms. 5.352 is the Y intercept, which is the other factor affecting operational performance. X₁ is green product design and development; X₂ is efficient processes; X₃ is GSCM; and X₄ is end-of-life management. Green product design and development has a positive effect on operational performance (0.140). Efficient processes have a statistical significance on improvement of operational performance (0.157). GSCM has a statistical significance on improvement of operational performance (0.135), while end-of-life product management has a statistical insignificance effect which will lead to decrease in operational performance (-0.05). The VIF values of green design and development was 2.106, efficient processes had a VIF value of 1.906, the VIF value of GSCM was 1.452, and end-of-life product management had a VIF value of 1.033. All the variables had VIF values of less than 5.0, indicating absence of multicollinearity (Ringle, Wende & Becker, 2015). The results are presented in Table 11.

Table 11. Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	5.352	1.367		3.915	.001	
	Green product design and development	.292	.446	.140	.656	.002	.475
	Efficient processes	.221	.287	.157	.771	.004	.525
	Green supply chain management in manufacturing	.173	.228	.135	.759	.004	.689
	End-of-life product management	-.086	.255	-.050	-.336	.739	.968

Summary of the Model

The summary of the model is presented in Table 12. R at 95% confidence level was 0.363, and this indicates that green manufacturing variables is associated with operational performance at 0.363. The adjusted R² is a coefficient of determination which predicts a variance of 4.5% at 95% confidence level between operational performance and green manufacturing variables. Thus, green manufacturing had positive relationship with operational performance and the standard error estimate was 5.74537.

Table 12. Summary of the Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	.363 ^a	.132	.045	5.74537

*H*₀ is rejected and the alternative hypothesis *H*₁ is accepted.

Analysis of Variance

The independent variables have a total variance of 150.67064, and this constitutes the variance of the operational performance. F-test value (2.518) is greater than the F-critical which is 1.562 at 95% confidence level. This indicates that the model green manufacturing variables were a good fit for the data. The strength of variation between green manufacturing and operational performance in the firms surveyed was significant (p=0.015<0.05)

Table 13. ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.	
1	Regression	30.31064	4	7.5766	2.518	.015 ^b
	Residual	120.36	40	3.009		
	Total	150.67064	44			

a. Dependent Variable: Operational Performance

b. Predictors: (Constant), End-of-life product management, Green supply chain management in manufacturing, Efficient Processes, Green product design and development.

Discussion of Findings

Design for environmental sustainability, design for renewable energy sources, and design for material reduction were highly considered during the design stage by the surveyed firms. During the manufacturing stage, firms employ processes that use green energy, save energy, reduce toxic & hazardous materials, reduce reworks, and scrap. In the supply chain, firms reduced the overall package materials and purchased supplies that were environmentally friendly. In the end-of-life management stage, firms had installed collection points to collect materials for recycling and employed individuals to collect materials. These considerations are as a result of shrinking supply of raw materials and pressure to use renewable sources of energy, which is aimed at reducing pollution. This propels the argument that green manufacturing is a continuous loop starting with the product design stage to the end-of-life product management.

Design for transportability is in tally with manufacturing firms employing transport means that are environmentally friendly/EMS certified. This aids delivery of products to site and proper utilization of storage space in the supply chain management. Employing transport modes that reduce energy and are environmentally friendly eliminates the negative effects to the environment. However, recycling was often practiced in manufacturing firms compared to remanufacturing.

The findings of the study showed that green manufacturing leads to enhanced operational performance. Production cost significantly reduced because of the adoption of green manufacturing. More so, the quality of the products significantly improved due to implementation of green manufacturing. Green manufacturing leads to quality improvement of products by ensuring that the products produced conform to specifications and do not fail in the market. Green manufacturing also leads to increased flexibility and speed. Furthermore, green manufacturing leads to improvement in delivery of products, reduction in time taken to market, and time taken to respond to changes in tastes. The findings revealed that green manufacturing has a positive significant relationship with operational performance.

Adoption of green manufacturing significantly improves quality, reduces cost, improves flexibility, and enhances speed. All of these have a cumulative effect of increasing the competitive advantage of the firm. Despite the efforts made to move from conventional manufacturing, firms still experience challenges such as high technological risks. This is because technology keeps on changing and high short-term costs leads to inadequate organizational resources, varying customer demands, and green organizational culture.

The study further established that the implementation of green manufacturing in totality leads to reduction in production cost, increased

flexibility, increased speed, and improved quality. This enhances operational performance, which leads to the firm gaining competitive advantage. Implementing green manufacturing contributes to a wide range of competitive benefits and environmental sustainability. It leads to reduction in wastes produced. Nonetheless, those that are produced are recycled, while those that cannot be recycled are disposed of safely so as to reduce pollution. Reduction in the overall packaging was the most employed green manufacturing concept. This is followed by reduction in scrap and elimination of hazardous and toxic materials. Recycling and design for the environment were highly implemented among the manufacturing firms.

End-of-life product management was the least practiced green manufacturing concept among the manufacturing firms. To embrace the practice requires long-term investment and commitment by the firm, and most of the firms are lacking in this aspect. The low practice of end-of-life management is also attributed to inadequate government support or pressure from other institutions since most of the manufacturing firms surveyed were found to be operating locally. Manufacturing firms ought to install collection points to collect the used products for the purposes of recycling or remanufacturing. This reduces disposal of waste and enhances environmental and sustainability performance. Installation of collection points should be coupled with putting systems in place to monitor reverse flow of materials so as to enhance effectiveness and efficiency of the process.

Conclusion

The study showed that green product design and development was statistically significant to operational performance of manufacturing firms with the effect being positive. Green product design and development has an effect of eliminating toxic and hazardous materials, reducing time to market, and planning for the energy requirements and tools, which affects the other stages of production. Green product design and development enhances speed, improves flexibility, reduces cost of production, and ensures that products do not fail in the market, which positively affects competitive advantage of the firm.

The study also revealed that efficient processes have a positive relationship with operational performance of manufacturing firms. Efficient process reduces wastage of materials, eliminates rejects and reworks, enhances utilization of green energy, saves energy, and improves continuous production. This in turn reduces machine set-up time and moderates unnecessary motions and transportation through proper sequencing of the production process. Thus, this will lead to cost reduction and improved quality and speed so that the needs of customers are effectively met.

The study established that GSCM has a positive effect on the operational performance of manufacturing firms. GSCM practices reduced storage cost by ensuring optimum inventory levels, eco-labelling of products, reduction in storage and transportation space, elimination of hazardous package materials, reduction in overall packaging, optimization of warehousing practices, and delivery of products to customers' site. GSCM practices lead to reduction in cost, hence positively influencing operational performance. The established end-of-life product management had a negative effect on operational performance of manufacturing firms. Most of the firms surveyed engaged in recycling and not remanufacturing. Also, most of the firms did not engage in collection of the products from their customers. This contributes to the effect of end-of-life product management having an insignificant effect on operational performance.

The study further revealed that green manufacturing has a positive relationship with operational performance. Manufacturing firms ought to implement green manufacturing practices in all the stages of manufacturing, which begins with product design and development, efficient processes, GSCM, and end-of-life product management since green manufacturing is a continuous loop. Manufacturing firms will gain competitive advantage when they implement green manufacturing since it leads to quality improvement, reduction in cost, increased flexibility, and speed

Contributions of the Study

Managers should commit to long-term investment on green product and process designs since it determines effectiveness of other stages in the loop of green manufacturing. This implies that they should invest more on research and development. The government and other regulating institutions should come up with policies that encourage manufacturing firms to implement end-of-life product management practices since it is the least practiced green manufacturing concept. This is attributed to the fact that it eliminates the need for disposal and additional consumption of virgin raw materials and enhances the firm's image to gain competitive advantage.

Government should thus re-evaluate the regulatory structure and policies that can facilitate end-of-life product management and recovery. The government and manufacturing firms should also engage in public awareness on the benefits of collection and recovery of used products and packaging among consumers. This is because recovery of products has a significant impact on reducing pollution.

The major contribution to knowledge of this study is that it has a sound theoretical foundation and prior empirical analysis that the implementation of green manufacturing has a positive direct effect on operational performance. Consequently, the finding adds to the body of knowledge on positive links

between the effectiveness of green manufacturing and operational performance. This finding also helps to clear the air on the true effect of green manufacturing on operational performance. Furthermore, the research adds to the existing pool of knowledge on green manufacturing and operational performance by investigating the paths that enhance operational performance.

Study Limitations and Suggestions for Further Study

Despite the study providing valuable insights, it has some limitations. Firstly, the findings of the study were centered on cross-sectional data. In future research, the longitudinal research design could be used to enhance the reliability of performance data. Secondly, data was obtained from individual managers in operations departments. While it is anticipated that respondents will offer unbiased answers because of variations in their role and profession, they could have contributed to differing perceptions as to how items in questionnaires were addressed. Therefore, further studies are required to evaluate the impact from other departments such as finance and supply chain and also from the customer's perspective. This is because quality from the manufacturer's perspective is conformance to set standards. On the other hand, it is the perception of value addition from the customer's standpoint. Intervening variables such as management support and government policies on implementation of green manufacturing were assumed in the study. Thus, further research should be carried to determine their influence.

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Financial Behaviour and Retirement Planning in Kenya, Assessing the Role of Self-Control Bias

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Abstract

The shift towards defined contribution schemes is forcing employees to take personal responsibility for securing their future through intentional retirement savings. Financial behavior may have a significant bearing on whether employees meet their contributory retirement obligations while avoiding financial distress. Utilising a cross-sectional research design and data from pension scheme members in Kenya, the study evaluates the interaction of self-control bias. The binary logistic regression results showed that financially disciplined individuals are 1.634 times more likely to plan comprehensively for their retirement, while the interaction results suggest that individuals with self-control bias are 0.502 times less likely to be comprehensive retirement planners even if they are already financially disciplined. The findings imply that financial discipline coupled with self-control is necessary for retirement planning. The use of behavioral change interventions is recommended in financial education initiatives in order to inculcate both desirable financial behavior and self-control attributes in planning for retirement.

Keywords: Financial Behaviour, Self-Control Bias, Retirement Planning, Pension

1. Introduction

Employees in many countries have increasingly been asked to take on a remarkable role in planning for their retirement. This is because most governments and employers are moving from defined benefit pensions to defined contribution schemes to reduce their pension burden. The development of technology has led to rapid changes in the financial markets, which has brought about new and more complex financial products being available in these markets. As a result, employees face a wide range of financial products and economic decisions to make, implying that it is more important for them to improve their economic know-how (Lusardi & Mitchell, 2019). This also implies that employees need to adopt responsible financial behavior to meet the contributory retirement obligations while avoiding financial distress.

Financial behavior has been simply defined by Baker and Nofsinger (2010) as how human beings actually behave or act in a financial setting. Mudzingiri et al. (2018) posit that financial behavior plays an essential part in influencing the welfare of individuals at a household level and at a national level. Responsible financial behavior is beneficial to both an individual and the society at large; it will improve the personal financial well-being of the individual and contribute to society by reducing the instances of problematic debt and other financial problems that may take a toll on the mental health of individuals further leading to lower productivity at work. (Gathergood, 2012, van Raaij, 2016).

Akben-Selcuk (2015) identified some attributes of financial behavior among students to comprise timely payment of bills, creating personal budgets and saving for the future. Likewise, van Raaij (2016) identifies ten responsible and sustainable financial behavior, namely: spending based on income; avoiding impulsive purchases by making deliberate decisions; carefully choosing financial products; seeking help from competitive financial advisers or planners; keeping a financial buffer for unforeseen expenditures; having enough discretionary earnings for day to day expenses; paying bills in time; taking insurance for income decline; taking risks that one can easily manage with credits and investments and finally taking into account the possible future outcomes.

1.1 Self-control bias and financial behavior

The role of behavioral economics in influencing the process of decision-making has recently gained acceptance. Baker and Ricciardi (2014) construe that individuals make mistakes while making important financial

decisions hence contradicting the traditional theories of rationality, this is exhibited by behavioral biases. Behavioral biases are systematic errors committed by individuals when they act irrationally, and one such bias is self-control bias. Pompian (2006) defines self-control bias as a human behavioral weakness that makes individuals consume now at the expense of saving for tomorrow, where there is a struggle between one's overarching goals and failure to act towards these goals caused by insufficient self-discipline. Pompian (2006) further posits that money spending is one of the areas in which individuals exhibit a lack of self-control. The fact that self-control bias can cause a person to concentrate on today at the expense of tomorrow can be dangerous to one's wealth, especially when one retires. This bias may also cause individuals not to plan appropriately for their retirement (in the long term) even if one has the requisite financial discipline in the short term.

O'Donoghue and Rabin (2001) asserts that self-control problems are universal, for instance, when an individual may intend to behave in one way but end up behaving in another. This may be caused by the pursuit of immediate gratification while ignoring the long-term consequences. To secure their long-term financial well-being, an individual must practice self-restraint in the short term (Howlett, Kees, & Kemp, 2008). Several studies have linked self-control with various financial behaviors. Gathergood (2012) found that individuals with self-control problems are more likely to suffer from unforeseen expenses and credit withdrawals, leading to over-indebtedness. At the same time, Achtziger et al. (2015) report that individuals with low self-control are more likely to engage in compulsive purchases.

In regards to wealth accumulation, Biljanova and Palligkinis (2015) also link self-control problems with low wealth accumulation. They posit that individuals who do not plan and monitor their finances report lower wealth accumulation. Additionally, Choi et al. (2011) established that individuals with less self-control are less likely to have enough savings for their retirement. However, Ballinger et al. (2011) report contradictory findings that self-control and other different kinds of measured impulsive behavior did not affect savings behavior. Xiao et al. (2006) also found that giving up one's current spending by engaging in flexible spending plans was negatively associated with their financial satisfaction levels. Therefore, this implies inconclusive results on the relationship between self-control and financial behavior, which may be context-specific.

The objectives of this paper are to: (i) assess the importance of financial behavior (financial discipline) on retirement planning and (ii) examine the moderating effect of self-control on the relationship between financial behavior and retirement planning. The results show that although financial discipline increases the likelihood of comprehensive retirement planning, individuals with self-control problems (self-control bias) are more

unlikely to be comprehensive retirement planners even if they are already financially disciplined.

1.2 Retirement Planning in Kenya

Kenya's Vision 2030 includes pension funds as a crucial pillar in delivering economic growth and greater advancements in the financial markets. The Kenyan pension system structure is divided into four categories: the National Social Security Fund (NSSF), the Civil Service Pension Scheme; Occupational retirement schemes, and Individual Retirement Pensions. (RBA, 2019)

The National Social Security Fund (NSSF) is a compulsory scheme where all employers and employees governed by the Employment Act 2007 must make monthly contributions. It is a provident fund regulated by the NSSF Act 1978, which was later reviewed by the NSSF Act 2013 enactment. Employers normally institute occupational retirement benefits schemes voluntarily to benefit their permanent employees. The schemes can either be a pension fund or provident fund funded through contributions from both the employer and employee. On the other hand, Individual retirement benefits schemes are established by corporate institutions and target the general public. They provide a retirement savings platform for those employed but without established occupational schemes, self-employed individuals, and those wishing to make additional voluntary contributions. The civil service pension scheme is established by an Act of Parliament for all civil servants, disciplined forces and teachers working for the government. It is a Pay As You Go non-funded, with members not contributing as it is funded from government revenue collections.

According to the Financial Stability Report of 2019, the current pension coverage stands at 22% of the total labor force in 2019 compared to 20% in 2018, showing a slight increase in coverage. Despite this increment in the coverage level, this level is still low as it implies that 88% of those employed are not saving for retirement. The 2020 Economic Survey reports that 82.9% of the total workforce employed in 2019 were from the informal workforce, where pension coverage is still very low (IOPS, 2018).

Despite the enactment of new legislation on early withdrawals in Kenya, employees have still opted to withdraw their pension savings from schemes upon changing jobs or leaving employment before attaining their retirement age. This early access of benefits is self-defeating and short-sighted as it reduces the amount that retirees get as a pension upon retirement (Were, 2011). Lusardi and Mitchell (2009) found that most retirees live miserable lives upon retirement due to reduced income and lack of forward planning for their retirement phase in life, caused by undesirable financial behavior exhibited during the pre-retirement phase. The lack of self-control during the

productive years among many only makes the problem worse. Thaler and Bernartzi (2004) emphasize that the rapid change from defined benefit plans to defined contribution plans calls for self-control to sustain savings for retirement.

2. Literature Review

The life-cycle hypothesis has been proposed as the theory that explains retirement savings over an individual's lifespan. Modigliani and Brumberg (1950) posit that individuals plan their consumption and savings behavior over their life cycle. They further hypothesize that individuals make rational financial decisions and maximize their lifetime utility by smoothening their consumption over their entire lifetimes by accumulating wealth when young and are earning and dis-saving when they are retired.

On the contrary, the behavioral life-cycle hypothesis (BLCH) posits that individuals are not always rational and sometimes will deviate from the standard economic model because they will find it difficult to avoid cognitive and emotional errors and balance the need for saving for tomorrow with the need for spending now. (Statman, 2017). Shefrin and Thaler developed this Behavioural life-cycle hypothesis in 1988. The model incorporated Self-control, mental accounting, and framing to enrich the life-cycle theory. Shefrin (2002) further suggested that individuals lack the requisite willpower to make long-term retirement savings plans because they have limited mental skills required to solve multi-period retirement saving problems. Madrian and Shea (2001) additionally cite inertia and procrastination in financial decision-making as the main behavioral challenges to retirement savings. Other factors that can inhibit efficient decision making are heuristics, decision framing and loss aversion (Hede, 2012)

Hastings and Mitchell (2011), in their quest to understand why individuals fail to optimize their financial decision, used experimental evidence from Chile in southern American, analyzed two main reasons: one is that individuals are financially illiterate and secondly, that individuals are impatient or biased towards the present, implying that they choose gratification now over future, higher payoffs. The researchers found impatience to be a strong predictor of retirement saving while financial literacy to be associated with accumulated retirement saving, although it appeared to be a weaker predictor in framing investment decisions. Therefore, they posit that policymakers interested in enhancing retirement well-being should address behavioral shortcomings that may impede long-term financial planning and decision-making.

Previous research has linked self-control to desirable financial behavior. For instance, Sahi (2017) explored different psychological biases by investors to see whether they are related to financial satisfaction. The study

results reported a positive and significant relationship between self-control bias and financial satisfaction, implying that investors who had the tendency of forgoing their present consumption for the sake of saving for the future and exercised some degree of self-control were more disposed towards being financially satisfied.

Kim et al. (2016), while examining self-control problems of U.S households and their effect on household's retirement preparedness based on the Behavioural life-cycle hypothesis, found that a considerable proportion of U.S households had self-control problems in loan payment and savings decisions. They also put forward that households with loan repayment and self-control problems were less likely to be adequately prepared for retirement. They further suggest the use of self-control practices to improve retirement preparedness.

Consequently, Stromback et al (2017) attempt to understand how people make financial decisions investigated the psychological characteristics that influence individuals' financial behavior and financial well-being. Their study explored individual differences in self-control and other emotional factors on financial behavior and financial well-being. They found that people with good self-control were inclined to save money from their monthly salary, showed positive financial behavior, were less anxious about financial matters, and felt more confident in their current and future financial situation.

3. Methodology

To achieve its objectives, this study used a population of contributory pension schemes members as recorded by the RBA at the end of 2018, including members of the occupational retirement schemes, NSSF and individual pension schemes in Kenya. According to the RBA (2019), there were 1172 occupational pension schemes registered as at the end of December 2018 with total membership of 540,487. The NSSF has the largest membership of 2,629,689 who also incorporated the occupational scheme members, while the individual pension schemes were 45 with a total membership of 199,024. This gives a total of 2,828,713 as the total population of the study.

Two main strata were identified; members of the NSSF schemes and members of occupational schemes as the first strata and members of individual pension schemes as second strata; this is because the first serve employees in the formal sector and the latter mostly serve employees in the informal sector. Since the population variance with respect to the dependent variable is unknown, the sample size estimation follows the recommendations by Bartlett *et al.* (2001).

$$n_0 = \frac{t^2 p(1-p)}{e^2} \quad (1)$$

Where; n_0 = defined sample size, $t = t$ - value at 0.05, $t = 2.58$, p = proportion of those who have planned for retirement, $1 - p$ = proportion of those who have not planned for retirement and e is margin error (taken to be 0.05)

$$n_0 = \frac{2.58^2(0.2)(0.8)}{0.05^2} = 410 \quad (2)$$

The sample size was then chosen proportionately, according to the total membership of the different retirement benefit schemes. A logistic regression analysis was preferred because the dependent variable is binary, taking the value of 1 for comprehensive retirement planners and 0 for those who are basic retirement planners. The basic planners will be pension scheme members who will have been automatically enrolled to a pension scheme with low contributions, in this case, NSSF. In contrast, comprehensive planners will be pension scheme members who are automatically enrolled into a scheme, but that have a high contribution, as well as those scheme members who have taken up an active role in enrolling themselves into a pension scheme. Both theoretical and empirical results suggest that when the response variable is binary, the shape of the response function is either as a tilted S or as a reverse tilted S. A multiple logistic regression shown in equation five was used to enable the study to capture the non-linear relationship between the variables. The equation incorporated demographics and other variables that influence retirement planning based on previous studies. These are financial awareness, financial knowledge and self-control. (Lusardi & Mitchell, 2019, OECD, 2016, Kim et al 2016)

$$\ln(\text{odds}) = \ln\left(\frac{p}{1-p}\right) = \text{Logit}(p) \quad (3)$$

$$\text{Logit}(P) = \ln\left(\frac{P}{1-P}\right) = \beta_0 + \beta_1X + \beta_2FB + \beta_3FK + \beta_4FA + \varepsilon \quad (4)$$

$$\text{Logit}(P) = \beta_0 + \beta_1X + \beta_2FB + \beta_3FK + \beta_4FA + \beta_5SCB + \beta_6FB * SCB + \varepsilon \quad (5)$$

Where Logit (p) is Probability of being a comprehensive planner, X includes all control variables (age, income level and education level), FB is financial behavior, FK is financial knowledge, FA is financial awareness and SCB is self-control bias.

3.1 Measurements of Variables

The Certified Financial Planners Board of standards and Consumer Federation of America (2013) in their Household Financial Planning Behaviour Survey, classified households' financial planning profiles into four main distinct categories representing the different levels of financial planning. The four groups are comprehensive planners, basic planners, limited planners and non-planners. This study has utilized the certified financial planners' board of standards approach of classification but will only use two main

categories; basic planners and comprehensive planners. This is because the scope of the study is individuals that are already in pension schemes and so they are already enrolled in a savings plan. The basic planners will be pension scheme members who will have been automatically enrolled to a scheme with low contributions, while comprehensive planners will be pension scheme members who are automatically enrolled into a scheme but that has a high contribution ratio, as well as those scheme members who have taken up an active role in enrolling themselves into a pension scheme.

Financial behavior was captured by using a variety of likert scale questions to determine behaviour such as thinking before making a purchase, paying bills on time and budgeting, saving and borrowing to make ends meet. Self-control bias was also measured using Likert scale questions based on individuals' attitudes towards long-term savings versus spending today. These questions were derived from OECD/INFE framework of measuring financial literacy.

4. Discussion of Results

4.1 Descriptive Statistics

Table 1 represents the results from the classification of pension scheme members as either basic planners or comprehensive planners. This was based on the category of pension plan an individual had. Those with the NSSF scheme members who their employer automatically registered into the scheme were classified as basic planners. In contrast, those who had an individual pension plan and occupational plans beyond the NSSF were classified as comprehensive planners. Individuals who had taken the initiative to register themselves with a pension plan, be it NSSF or Individual pension plans, were also classified as comprehensive planners as they exhibited the attribute of actively saving for their retirement.

Table 1: Descriptive results of Retirement planning

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	basic planner	157	47.3	47.3	47.3
	Comprehensive Planner	175	52.7	52.7	100.0
	Total	332	100.0	100.0	

From **Table 1**, 47.3% were classified as basic planners, while 52.7% were classified as comprehensive planners. This is contrary to the result of the study by Githu & Ngare (2014), who focused on the relationship between financial literacy and retirement planning in the informal sector, in their study the proportion of non-planners (60%) were more than planners (40%) among individuals in the informal sector. The main reason for the discrepancy could be because of the target groups, the current study focused on retirement

scheme members who are obliged to save by virtue of being mostly in the formal sector, while the study by Githu & Ngare (2014) focused on the informal sector employees who voluntarily save for retirement.

The study sought to examine the respondent’s behavior that makes them financially resilient and, in a position to counter financial shocks. These behaviors include making considered purchases, paying bills on time, taking a close watch of personal financial affairs, setting long-term goals, setting monthly budgets, actively saving and investing, gathering information before purchasing financial products, and not borrowing to make ends meet.

Table 2: Financial Behaviour Descriptive Statistics

	Mean	Median	Mode	Std dev
Before I buy something, I carefully consider whether I can afford it	4.09	4.00	4.00	1.03
I pay my bills on time	3.77	4.00	4.00	1.03
I keep a close personal watch on my financial affairs	3.84	4.00	4.00	1.05
I set long term financial goals and strive to achieve them	3.72	4.00	4.00	1.02
I prepare a monthly household budget and adhere to it.	3.49	4.00	4.00	1.14
I have been actively saving or buying investments in the past 12 months	3.31	4.00	4.00	1.21
I shop around and gather information before purchasing a financial product	3.77	4.00	4.00	1.13
I do not borrow to make ends meet	3.28	4.00	4.00	1.39

Table 2 presents the relevant results on a scale of 1 to 5 (where 1= strongly disagree and strongly agree=5). The means, mode, median and standard deviations were recorded as above. The statements “before I buy something, I carefully consider whether I can afford it” had a mean of 4.0934, median of 4, mode of 4 and standard deviation of 1.02856. While the rest of the statements “I pay my bills on time,” “I keep a close personal watch on my financial affairs,” “I set long term financial goals and strive to achieve them,” “I prepare a monthly household budget and adhere to it,” “I have been actively saving or buying investments in the past 12 months”, “I shop around and gather information before purchasing a financial product,” “I do not have to borrow to make ends meet” also had a median of 4 (Agree) and a mode of 4 (Agree). The implication is that, on average, the pension scheme members tend towards responsible financial behavior as they tend towards agreeing (4) to all the behavioral tendencies.

The short term and long-term financial situations of individuals are shaped by their actions and behavior. It is therefore imperative to evaluate the behavioral tendencies of individuals both in the short term and long term. **Table 3** reports the proportion of pension scheme members who exhibited responsible financial behavior under the different categories.

Table 3: Financial Behaviour Frequencies

	Responses		Percent of Cases
	N	Percent	
Carefully consider purchase	272	15.3%	85.5%
Pays bills on time	236	13.3%	74.2%
Watch financial affairs	239	13.5%	75.2%
Sets Long Term goals	229	12.9%	72.0%
Budgeting	199	11.2%	62.6%
Actively saves	182	10.3%	57.2%
Gathers information before purchasing	241	13.6%	75.8%
Don't borrow to make ends meet	174	9.8%	54.7%

a. Dichotomy group tabulated at value 1.

From **Table 3**, a majority of the pension scheme members, 75.8% reported that they shop around and gather information before purchasing a financial product, while 85.5% carefully considered whether they can afford an item before making a purchase. This is a good indication of a thorough decision-making process by the scheme members. 74.2% of members also reported that they promptly pay their bills while watching their financial affairs closely.

The descriptive statistics also show that 62.6% of pension scheme members have a monthly budget in place and adhere to it, while 72% report that they set long-term financial goals and strive to achieve them. Goal setting and written budgets are vital tools for money management and are key components in financial literacy, as identified in the G20/OECD INFE core competencies framework on financial literacy.

Notably, 5 out of 10 scheme members have been actively saving and buying investment products in the 12 months preceding the survey. Active saving is an important competence as individuals who exhibit this behavior easily smoothen their income and expenditure flows and are more likely to be resilient to financial shocks and better meet their financial goals. (OECD, 2016).

A cross-tabulation of retirement planning and the different behavioral tendencies resulted in the following chi-square tabulation showing the level of association.

Table 4: Pearson Chi-Square Tests

		Retirement planning
Carefully consider purchase	Chi-square	1.803
	Df	4
	Sig.	.772
Pay bills on time	Chi-square	18.021
	Df	4
	Sig.	.001 ^{*b}
close watch of financial	Chi-square	13.765
	Df	4
	Sig.	.008 ^{*b}
set long term goals	Chi-square	3.325
	Df	4
	Sig.	.505 ^b
set monthly budget	Chi-square	9.838
	Df	4
	Sig.	.043 [*]
Actively saves and invests	Chi-square	11.889
	Df	4
	Sig.	.018 [*]
Gather information before purchasing financial products	Chi-square	12.151
	Df	4
	Sig.	.016 [*]
Don't borrow to make ends meet	Chi-square	9.663
	Df	4
	Sig.	.046 [*]

Results are based on nonempty rows and columns in each innermost subtable.

*. The Chi-square statistic is significant at the .05 level.

Financial behavioral tendencies that have a significant association with retirement planning are; paying bills on time, closely watching ones financial affairs, setting and adhering to monthly budgets, actively saving and investing, gathering information before purchasing financial products and refraining from borrowing to make ends meet, as the reported p-values were all less than 0.05. these findings are consistent with Hira et al. (2009) who found that individuals who use more financial information sources; those who started investing early in life and those who had been active investors in the past 12 months were more likely to own an IRA (individual retirement account). Carefully considering whether one can afford an item before purchasing and setting long-term financial goals was found not to be significant.

4.2 Empirical Results

After exploring the data, this section presents the empirical results from the estimation of the multiple logistic regression presented in equation 5.

4.2.1 The Influence of Financial Behavior on Retirement Planning in Kenya

Table 5 presents the logistic regression results of the influence of financial behavior and other variables identified by previous studies on retirement planning. Model 1 reports the logistic regression results of elements of financial literacy; financial knowledge, financial awareness and financial behavior. Model 2 has the same variables as in Model 1 but also incorporates demographic factors. Model 3 incorporates self-control bias, which is the emotional bias aspect of finding satisfaction in spending money today rather than saving it for the future, thereby incorporating the aspect of being myopic, commonly referred to as self-control bias. Model 4 aims to achieve parsimony from Model 3 and drops the variables that are not statistically significant in the Model 3 to improve the model's explanatory power.

Table 5: Influence of Financial Behavior on Retirement Planning in Kenya

Variables	Model 1	Model 2	Model 3	Model 4
Income		1.871* (0.000)	1.769* (0.000)	1.960*(0.000)
Age		1.232 (0.151)	1.204 (0.213)	
Education level		1.117 (0.389)	1.147 (0.310)	
Financial behaviour	1.416* (0.004)	1.184 (0.186)	1.588**(0.008)*	1.634 (0.005)
Financial knowledge	1.206* (0.104)	1.196 (0.147)	1.179(0.193)	
Financial awareness	1.769* (0.000)	1.589* (0.001)	1.614* (0.000)	1.629* (0.000)
Self-control bias			1.603** (0.086)	1.606** (0.070)
Financial behavior*self-control bias			0.511 (0.019)*	0.502 (0.015)
Constant	1.122	1.165 (0.216)	0.924 (0.623)	0.925 (0.626)
Observations	332	332	332	332
Pseudo R2	0.1054	0.1489	0.1696	0.1607

*denotes statistically significant at 5% and ** denotes statistical significance at 10%.

Figures in parenthesis are the p-values.

Model 1 results show that financial behavior is statistically significant in explaining retirement planning. Pension scheme members who exhibited responsible financial behavior were 1.416 times more likely to plan for their retirement comprehensively than those who lacked this trait. This result is in tandem with previous studies that found a statistically significant causal relationship between financial behavior and other variables related to managing personal finance. For instance, Sundindra and Naidu (2018) found a significant positive impact of financial behavior on decision-making in a sample of 378 working women serving in information technology services in

Bengaluru, India. Similarly, Gutter and Copur (2011), in their study among college students, reported that budgeting, savings, risky credit card behaviors, and compulsive buying were significantly related to the students' financial well-being.

Financial awareness was also significant at a 5% level of significance, while financial knowledge was significant at 10% significance level. Pension scheme members who were aware of the financial products and institutions were 1.769 more likely to plan for retirement than those who are not comprehensively aware. Pension scheme members who possessed the attribute of financial knowledge were 1.206 times or 20.6% more likely to be comprehensive planners than those who lacked the knowledge.

The findings in **Model 2** indicate that when demographic factors are incorporated, pension scheme members who are financially disciplined or exhibit responsible financial behavior are 1.18 times more likely to comprehensively plan for their retirement than those that are not financially disciplined. However, the p-value of the Wald test is 0.186, which indicates that financial behavior is not a significant variable in explaining retirement planning when demographic variables are considered. The Pseudo R-squared also increases from 10% to 14%, implying that the demographic factors contribute significantly to explaining the variations in retirement planning.

With the introduction of self-control bias in **Model 3**, there is a change in the p-value of the financial behavior variable from 0.186 as obtained in Model 2 to 0.008, showing a move from insignificance to being statistically significant. The odds ratio (of financial behavior) also increases from 1.184 to 1.588, implying that when we control for self-control bias, members who exhibited responsible financial behavior were 1.588 times more likely to comprehensively plan for their retirement than those who lacked this trait. The odds ratio of the interaction between financial behavior and self-control bias is 0.51, implying that pension scheme members who exhibit responsible financial behavior but are myopic (with a self-control bias) are 0.51 times less likely to plan comprehensively for their retirement than those who are disciplined and are self-controlled. This finding is important and shows that financial discipline in itself is not important if members are myopic and have no self-control and is similar to the findings of Kim et al. (2016). The latter found that individuals with saving decision self-control problems were more likely to have insufficient savings for their retirement. Likewise, Stromback et al. (2017) also pointed out that individuals who exercised self-control are inclined to save money from their monthly salary and feel more confident in their current and future financial situation. This finding suggests that responsible financial behavior alone is not sufficient for one to plan comprehensively. Still, self-control coupled with responsible financial behavior is requisite traits for one to plan for their retirement comprehensively.

The more parsimonious **Model 4** shows that income and financial awareness are significant in explaining retirement planning. In contrast, age, education level and financial knowledge do not explain financial planning when we control for self-selection. For a pension scheme member who is financially aware of the existing financial products and institutions, the odds to comprehensively plan for their retirement is 1.6 times more than those not aware. Furthermore, pension scheme members who earn higher incomes are 1.6 times more likely to be comprehensive planners than their counterparts who are low-income earners.

4.2.2 The Influence of Financial Behavior on Voluntary Retirement Planning in Kenya

In this subsection, the results are presented for pension scheme members who have taken an active role in planning for their retirement, otherwise called voluntary planners. The pension scheme members included here are those who had taken the initiative to enroll themselves in a pension scheme without automatically being enrolled by their employers and those employees with occupational pension schemes who had voluntarily added their pension savings, indicating intentionality in saving for retirement and increasing the amount of pension contributed for retirement.

Table 6: Logistic regression results for voluntary pension scheme members

Variables	Model 5	Model 6	Model 7
Income	1.171(0.284)	1.158 (0.327)	1.266* (0.063)
Age	1.146 (0.338)	1.118 (0.439)	
Education level	1.113 (0.442)	1.157 (0.310)	
Financial behaviour	1.187 (0.195)	1.365** (0.083)	1.375** (0.074)
Financial knowledge	1.278** (0.067)	1.251** (0.097)	1.268** (0.077)
Financial awareness	1.087 (0.537)	1.089 (0.523)	
Self-control bias		1.565** (0.103)	1.486 (0.133)
Financial behavior*self-control		0.797 (0.417)	0.779 (0.369)
ccocontrolcontrol bias			
Constant	0.382 (0.000)	0.316 (0.000)	0.332 (0.000)
Observations	332	332	332
Pseudo R2	0.0355	0.0440	0.0389

*denotes statistically significant at 5% and ** denotes statistical significance at 10%.
 Figures in parenthesis are the p-values.

Model 5 indicates that financial knowledge is the only statistically significant variable at 10% significance level in explaining intentionality in retirement planning. Pension scheme members who understand the basic financial concepts are 1.278 times more likely to be intentional in planning for

retirement than those who lack financial knowledge. The other variables, including financial awareness, financial behavior, age and income, are not statistically significant even at a 10% significance level.

The introduction of the self-control bias and its interaction with financial behavior in **Model 6** has a moderating effect on the relationship between financial behavior and intentionality in retirement planning. Pension scheme members who had responsible financial behavior were 1.365 times more likely to actively plan for retirement by taking up individual pension schemes and implementing additional savings in their occupational pension schemes. Self-control bias was significant in improving the entire model from a pseudo R^2 of 0.0355 to 0.0440.

Model 7 results, on the other hand, indicate that income level, financial behavior and knowledge of basic financial concepts are significant in explaining intentionality in retirement planning at 10% significance level, while the interaction of self-control and financial behavior is not significant in explaining intentionality in retirement planning.

Conclusions and Recommendations

The increasing shift from defined benefit pensions towards defined contribution schemes has forced employees to adopt responsible financial behavior to meet the contributory retirement obligations while avoiding financial distress. However, financial discipline is not always common for many people. Most retirees in Kenya live miserable lives upon retirement due to the lack of forward planning for their retirement phase in life attributed to undesirable financial behavior exhibited during the pre-retirement phase. This lack of financial discipline and self-control during the productive years among many only makes the problem worse during retirement. This study assessed the importance of responsible financial behaviour on retirement planning and examined the moderating effect of self-control on the relationship between financial behavior and retirement planning.

Although empirical evidence shows that although responsible financial behaviour increases the likelihood of comprehensive retirement planning, this study concludes that self-control plays an important role on pension scheme members in informing their decisions to voluntarily add and actively participate, as individuals with self-control problems (self-control bias) are less likely to comprehensively plan for their retirement even if they are already financially disciplined. Furthermore, the results show that financial behavior, financial knowledge, and income significantly explain a members' likelihood of voluntarily comprehensively planning for retirement planning.

The policy implications of these findings is that as policy makers should not only focus on improving financial literacy through the financial education of basic financial concepts needed in financial decision-making but

also incorporate pertinent issues that affect financial behaviour. The study therefore recommends that policymakers and pension scheme companies incorporate behavioural change initiatives within their financial educational programs, making them practical to ensure members shift towards responsible financial behaviour that would enhance members' participation within the schemes and encourage them to participate comprehensively plan for their retirement.

Furthermore, the use of measures that inculcate self-control and avoid short-term gratification will also help improve retirement planning, the continual use of passive automatic enrollment to pension schemes is an important device in simplifying decision-making for employees with bounded rationality and hence pension scheme regulations and laws enacted should take into consideration the fact that the populace at large exhibit self-control bias. Therefore policymakers not only need to advocate for automatic enrollment into the tier one pension scheme (NSSF) but also put in place modalities of increasing the amount of contribution in the NSSF to improve the replacement rate of scheme members upon retirement.

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The Influence of Electronic Personalization on Performance of Three to Five-Star Hotels in Kenya

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Abstract

Electronic Personalization plays a vital role in the growth and development of the hotel industry, whether in a developed or a developing economy. The hotel industry in Kenya has grown enormously since the year 2000, and despite this growth, the hotel industry in Kenya has experienced slow growth compared to other countries. Electronic Personalization has been identified as an electronic customer relationship management strategy that has had a significant impact on hotel performance. The aim of this study is therefore to seek the influence of Electronic Personalization on the performance of Three to Five-Star Hotels in Kenya. The study adopted a descriptive design for the research. In addition, a quantitative and qualitative research approach was utilized. The target population for the study was one hundred and twelve Three to Five-Star Hotels in Kenya. The study examined one hundred and twelve Three to Five-Star Hotels because they represent the major market share of Kenya's hotel industry. A survey was conducted on the target population. Simple Regression was utilized to draw inference from the data collected. Descriptive findings revealed a mean of 4.524 with a standard

deviation of 0.5654 for electronic personalization. In addition, findings revealed an R square value of 0.366 between Electronic Personalization and performance. This suggests that Electronic Personalization influences the performance of Three to Five-Star Hotels. Consequently, hotel managers should develop and implement effective Electronic Personalization strategies in their hotel's operations. For instance, they can electronically personalize their hotel information by assigning the right marketing effort to the right customer, hence increasing customer buying behaviour which shall in turn increase performance.

Keywords: Electronic Customer Relationship Management, Electronic Personalization, Performance

1. Introduction

Electronic Personalization is commonly used to increase customer's satisfaction, loyalty, trust and trade revenue for companies by making buyer connections almost customized to a single person. With electronic personalization, the company must know customer's needs and preferences, what customers purchase, what product or services they are interested in. The initial step in Electronic Personalization is to gather information of the customer first visit or purchase, then analyze their behavior from the gathered information. This assists a company in being in a position to suggest product or services which customers are interested in. Also, it increases both consumer's loyalty or satisfaction and benefits in terms of profits. Electronic Personalization helps in predicting the customers' needs which therefore improves client's usability of the online pages that adapts the information and services provided by website to single user or set of users (Siddiqui & Tyagi, 2013).

Electronic Personalization uses the history of a customer's buying behavior and generates a different product list for each user. Electronic Personalization is a part of the electronic customer relationship marketing strategy that involves identifying customers, recognizing their needs so as to establish influences with them. This is accomplished by implementing and proposing services and products in accordance with the characteristics of customers or segments. Effective Electronic Personalization begins by collecting customer information through Data Mining during interaction with the customer or user in order to provide customized services. Electronic Personalization provides features such as personalized product recommendations, because companies can keep in touch with their customers through multiple channels, such as e-mail, websites, call centers. With this concept, there is the long-term identification of customers, the storage of

purchase lists, and the possibility of tracking and logging the navigation actions of each customer (Lee, 2010).

Problem Statement

The Kenyan Tourism and hotel sector has recorded dismal performance compared to other sectors. Statistics from the Kenya National Bureau of Statistics showed that the sector performed dismally compared to other sectors with a growth rate of 3.9 percent, from the year 2019 to 2020. The construction sector grew by 6.4 percent, transport and storage sector grew by 12.1 percent (Kenya National Bureau of Statistics, 2020). The main argument goes that the use of e-CRM has a positive impact on business performance, in terms of their profits through increased customer satisfaction and retention (Shahram & Farhad, 2013; Ishmael, 2015; Macharia & Thuo, 2011; Mang'anyi, Khabala & Govender, 2017).

Empirical studies have shown mixed factors that influence performance of hotels in Kenya. In their study of leadership practices and performance of Five-Star Hotels in Nairobi County, Muteti and Muhoho (2019) concluded that continued and improved leadership strategic direction would further foster the performance of the hotels. Hassan, Mugambi and Waiganjo (2018), in their study titled "Effect of Training on the Performance of the Star Rated Hotels in Kenya", concluded that training contributed notably to hotel performance in Kenya. Ndiba and Mbugua (2018), in their study titled "The Effects of Customer Service Practices on Performance in the Hospitality Industry: A Case Study of Hotels in Nairobi County, Kenya", concluded that for hotels to perform better, they should improve existing marketing strategies and also implement marketing that focus on customer orientation. Wambua (2014), in her study on "Factors Influencing Sales Performance in the Hotel Industry: A case of Three-Star Hotels in Nakuru Municipality", indicated that policy and management, along with increased investments in quality of service as well as the hotel infrastructure, had markedly influenced sales performance of the three-star hotels.

The above studies present various factors that influence the performance of hotels in Kenya. This therefore puts across the need for a study to fill the existing gaps and clear the doubt on the influence of Electronic Personalization on hotel performance. It is on this background that the study sought to answer the question: Can Electronic Personalization be the solution to the performance of the Three to Five-Star Hotels in Kenya?

Research Objectives

To assess the influence of Electronic Personalization on Performance of Three to Five-Star Hotels in Kenya is the main purpose of this study.

2. Literature Review

This section reviews studies and theoretical basis that compares with the study at hand so as to provide a backing on the study concepts and parameters.

Theoretical Review

Identify, Differentiate, Interact and Customize (IDIC) model, which was built by Peppers and Rogers (2004), pointed out that businesses should take four steps which are: Identification of customers, Differentiation of customers per need, Customization of messages to customers, and Interaction with customers. These four steps are implemented by companies in order to create, sustain, and retain long-term one-to-one customer influences. Customization and differentiation are influenced by customer evaluation while Interaction and Identification are customer interactions. The model helps in the implementation of electronic customer relationship management. It aids in acquiring and using customer information in identifying the customer at any electronic touch point so as to improve customer service. It also helps organizations by supporting the customer experiences, improve marketing activities within a company, and lastly improve company communication with the customers.

3. Methodology

The study adopted a descriptive research design and qualitative research approach was further utilized. The target population for the study was one hundred and twelve Three to Five-Star Hotels in Kenya. The descriptive design sought to find out electronic personalization influence on the performance of Three to Five-Star Hotels. It attempted to make specific predictions about performance of three to five-star hotels in Kenya. Descriptive research is a process of collecting data to answer questions concerning current status of the subjects in the study. It determines and reports the way things are with the subjects and it attempts to describe things such as behavior, attitude, values, and characteristics (Mugenda & Mugenda, 2013). T-test and F-Statistic at 5% level of significant was used to examine significance of coefficients of variables in the model. Explanatory power of electronic personalization on performance of Three to Five-Star Hotels for the total period of observation and adjusted coefficient of determination (R^2) was performed. Also, Ordinary Least Square (OLS), simple regression analysis, and Pearson correlation test was performed on data set (Greene, 2012).

The Three to Five-Star Hotels were used because they form the majority share of Kenya's hotel industry. A survey was conducted on the target population. Simple regression model was estimated to draw inference from the data collected. SPSS was utilized for statistical analysis. Electronic

personalization was measured using physical customer data capture at entry and exist, while Customer intimacy was achieved using Email & Social media marketing, phone calls and Short message services.

$$Y_i = \beta_0 + \beta_1 X_i + \varepsilon_i$$

Where subscript 'i' denotes the ith row in the data matrix
The Ordinary Least Square method of parameter estimation was implemented via SPSS version 23 (Greene, 2012).

β_1 represents the specific beta coefficient, X_i represents electronic personalization, ε_i represents the error term in the model, B_0 represents the constant while Y_i represents hotel performance.

Electronic Personalization refers to the electronic marketing strategy that involves identifying customers and recognizing their needs so as to establish influences with them. Kamarudin, Aziz and Bakht (2011) concluded that hotel performance can be measured in terms of Occupancy Percentage Rate. Ilieva and Ivanov (2014) asserted that hotel performance can be measured in terms of online reviews and customer survey. Lee (2010) emphasized that Electronic Personalization can be measured by physical customer data capture (Data Mining) with the customers. Jutla, Bodorik and Dhaliwal (2002) concluded that Electronic Personalization can be measured by customer intimacy that involves various strategies such as the use of email & social media marketing, phone calls, and short message services.

Two diagnostic tests were carried out on this - Multicollinearity test and normality test. The normality test was carried out to determine if the data for the study variables had a normal distribution, while the Multicollinearity test was carried out to determine if a perfect/exact relationship exist between the predictor variables.

4. Findings and Discussions

Reliability Tests Results

Reliability analysis for internal consistency of the measured items in measuring e-personalization gave a reliability Cronbach alpha value of 0.735, with some items dropped. This results is above the 0.7 minimum acceptable range of the Cronbach's alpha, indicating a high level of internal consistency (Zikmund, 2013). The retained items were aggregation of leading to the study variable which in the foregoing sections we refer to as X (e-personalization).

Descriptive Analysis

Table 1. e-personalization Descriptive Analysis

	N	Mean	Std. Deviation	Skewness	
	Statistic	Statistic	Statistic	Statistic	Std. Error
e-personalization	82	4.524	.5654	-1.832	.266
Performance	82	4.0144	.05583	-.133	.226
Valid N (listwise)	82				

From the findings presented in Table 1, the mean for electronic personalization was 4.524, which suggests that the use of electronic personalization in the Three to Five-Star Hotels stands at 4.52%. Findings further revealed a standard deviation of 0.5654 which suggest that the variation of electronic personalization among the Three to Five-Star Hotels is not overly dispersed. Table 1 further presents the skewness of the electronic personalization as -1.832. This suggests that the frequency distribution for electronic personalization does not significantly deviate away from the normal.

The findings presented in Table 1 further revealed a mean for hotel performance as 4.0144 with a standard deviation of 0.05583. This suggests that the average performance of Three to Five-Star Hotels performance was 4.0%. The findings also revealed a skewness of -1.33 for hotel performance frequency distribution, indicating that the distribution does not significantly deviate away from a normal distribution. Kothari (2004) argues that symmetric distributions (normally distributed) have a skewness of zero. This suggests that the frequency distribution for electronic personalization and hotel performance does not significantly deviate away from a normal distribution.

The study carried out diagnostic tests: normality test. The normality test was carried out to determine if the data for the study variables had a normal distribution. The results from the diagnostic tests would determine if the assumptions of simple regression model were satisfied.

Test of Normality

Table 2. Test of Normality

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Electronic personalization	.200	82	.000	.787	82	.000
Performance	.084	82	.200	.979	82	.201

a. Lilliefors Significance Correction

Table 2 presents the results for the test of normality for the data collected. Kothari (2004) argues that a significance value of more than 0.05 for the Kolmogorov-Smirnov test signifies normality in a distribution. Thus, the study variables, Electronic Personalization, had a significance value of 0.00 while hotel performance had a significance value of 0.20. This suggests that the two study variables were normally distributed. In this light, simple data regression model was utilized to analyze the primary data collected. This is based on the fact that the simple regression error term satisfied the normality assumption.

Multi-Collinearity Test

From the results portrayed in Table 3a, there was no multi-collinearity between the independent variable (e-personalization) and the dependent variable (hotel performance) as the VIF values lies between 1 and 10 and that they (1.322) are all less than 4. Hence, there is very little or no multicollinearity presence in the study. This was supported by the Pearson correlation coefficient of .454. This exhibited positive results; hence the variable was selected for further regression analysis.

Table 3a. Multi-Collinearity Test

Variable	Tolerance	VIF
E-personalization	.756	1.322

Regression Results

The study used simple regression analysis to determine the linear statistical relationship between the independent and dependent variable of the study. The null hypothesis of the study was tested using linear regression models. F- test was used to test the validity of the model, while r^2 was meant to measure the model’s goodness of fit. The regression coefficient was used to describe the results of regression analysis and outline the nature and intensity of the relationships between the variables under study.

Table 3b. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.605 ^a	0.366	0.357	0.41195

a. Predictors: (Constant), electronic Personalization

Table 3b presents the simple regression results on the influence of Electronic Personalization on performance of Three to Five-Star Hotels in Kenya. The regression model of Electronic Personalization (X_1) and hotel performance (Y) was significant ($F(1, 78) = 44.939, P\text{-value} < 0.001$). Hence, Electronic Personalization is a valid predictor in the model. The Coefficient of determination R^2 of 0.366 showed that 36.6% of hotel performance can be

explained by the dimension of Electronic Personalization in electronic customer relationship management. The adjusted R^2 (0.357) indicates that 35.7% of the remaining (non-significant predictors) can be explained by other factors not included in the model.

The Pearson's Correlation Coefficient for Electronic Personalization and hotel performance ($r=0.605$, p -value <0.001) was significant at 0.05 level of significance. The Regression Analysis results showed that Electronic Personalization had a strong influence on hotel performance in Three to Five-Star Hotels in Kenya. For every unit increase in the extent of Electronic Personalization in e-CRM, there was a corresponding increase in hotel performance index by 0.603. The dimension of Electronic Personalization in e-CRM positively influences the performance of Three to Five-Star Hotels in Kenya.

From Table 4, the findings revealed that the regression model of X_1 and Y was significant ($F(1, 78) = 44.939$, P -value < 0.001), concluding that Electronic Personalization is a valid predictor in the model. The results on Table 3 further reveal a significance value of .000 which is less than .05. This suggests that Electronic Personalization has a significant influence on performance of Three to Five-Star Hotels in Kenya (p -value < 0.001).

Table 4. ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	7.626	1	7.626	44.939	.000 ^a
	Residual	13.237	78	.170		
	Total	20.863	79			

a. Predictors: (Constant), electronic Personalization

Table 5. Coefficients

	Unstandardized Coefficients	Std. Error	Standardized Coefficients	T	Sig.
	B		Beta		
(Constant)	4.025	0.046		87.362	0
Electronic Personalization	0.603	0.09	0.605	6.704	0

Table 5 revealed that there was positive influence between Electronic Personalization and performance of Three to Five-Star Hotels in Kenya.

The study hypothesized H_{01} : Electronic Personalization does not influence performance of the Three to Five-Star Hotels in Kenya. The results of the survey revealed that there was positive influence between Electronic Personalization and performance of Three to Five-Star Hotels in Kenya ($\beta_1=0.603$, $t = 6.704$, p -value < 0.001).

The null hypothesis (Ho): Electronic Personalization does not influence performance of the Three to Five-Star Hotels in Kenya. Ho1: $\beta_1 = 0$ is therefore rejected ($\beta_1 = 0.603$, $t = 6.704$, $p\text{-value} < 0.05$) it is concluded that Electronic Personalization(X_1) significantly influences hotel performance (Y).

Empirical Review

A study conducted by Sekhon (2015) asserted that Electronic Personalization improves the likelihood of repeat visits of customers, hence improved business performance. This indicates that Electronic Personalization is necessary because it enhances revenues for the company as well as increases the user satisfaction. Electronic Personalization of the customer experience is one of best opportunities for attracting, retaining, and building loyalty with your customers, which ultimately leads to a competitive advantage. Another study by Arora and Dreze (2008) observed that Electronic Personalization is positively correlated to sustainable advantages and higher industry profits. In addition, Salonen and Karjaluo (2016) concluded that satisfaction and loyalty are key concepts in web Electronic Personalization because they are considered essential drivers of business performance. Ho and Bodoff (2014) stated that there is a positive correlation of Electronic Personalization in increasing business performance in terms of increasing both advertising and sales revenues.

Lixandriou and Maican (2015) asserted in their study that Electronic Personalization is possible in electronic commerce with the use of online marketing and digital service innovation. This way a highly relevant, engaging and enhanced user customer is provided, causing a significant increase in the conversion rates and revenue for companies. Electronic Personalization and company performance is also supported by Srinivasan, Anderson and Ponnnavolu (2002), who concluded that Electronic Personalization allows companies in electronic commerce sphere to grow and improve influences with customers by creating clients' profiles based on what they like and how they behave. Providing excess information and helping customers in making smart decisions increases their loyalty level and their business performance.

Furthermore, Ansari and Mela (2003) found out that Electronic Personalization has also shown a steady increase in customers' satisfaction level. Electronic Personalization relies on assigning the right marketing effort to the right customer. Finally, Malthouse and Elsner (2006) had compelling evidence study conclusion that the hotel saw a significant increase in revenue and was successful in retaining its customers in the use electronic personalization. Furthermore, they added that the advantages of Electronic Personalization are greater customer satisfaction and higher profits.

Discussion

From the findings of this study, Electronic Personalization has a significant influence on hotel performance in Three to Five-Star Hotels in Kenya. This result on the effect of Electronic Personalization on hotel performance have been supported by JungKook (2107), who reported that Electronic Personalization meets customer's needs more effectively and efficiently. This thus results in faster customer interactions which increases customer satisfaction. This improves the likelihood of repeat visits, hence improved business performance. In addition, Sekhon (2015) found that effective Electronic Personalization is mandatory to enhance the revenue for the company as well as to increase the user satisfaction.

These study findings are also supported by Oracle Corporation (2011), who found that Electronic Personalization of customer experience is one of best opportunities for attracting, retaining, and building loyalty with your customers, which ultimately leads to a competitive advantage. The study findings also dovetail with the results of Arora and Dreze (2008) who found that Electronic Personalization is positively correlated to sustainable advantages and higher industry profits. Finally, Electronic Personalization allows companies to reach people who want to know about their products and services instantly (Bonett, 2001).

Conclusion

Study findings reveal that Electronic Personalization influence performance of Three to Five-Star Hotels. Thus, if a hotel wants to perform at a significantly higher level than its competitors, it should pursue electronic personalization by ensuring that they regularly use their social media platforms in communication to their customers. They should also use their social media platforms to constantly personalize their communication with their customers. The hotels should identify customer's information, identify and be aware of purchase lists history, as well as the possibility to track and log each customer's navigation actions. This assists the hotels in being in a position to suggest hotel products or services which may be of interest to customers. In return it increases both consumer's loyalty or satisfaction and benefits in terms of profits. Finally, Electronic Personalization enables hotel to predict the customers' needs, hence making the hotel meet these needs and, at the end, this leads to an increase in hotel performance.

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