European Scientific Journal, *ESJ*

June 2022

European Scientific Institute, ESI

The content is peer reviewed

ESJ Social Sciences

June 2022 edition vol. 18, No. 19

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

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

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

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

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

Sincerely,

Daniel B. Hier, MD

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Governance's Role in Business Environment of Visegrad Group / Maghreb Countries

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Abstract

This paper focuses on identifying, conceptualizing, and explaining good governance in Visegrád Group (Czech Republic, Hungary, Poland and Slovakia) and Maghreb countries (Algeria, Libya, Mauritania, Morocco and Tunisia). In addition, the research is an attempt to investigate the relationship between the good governance and the business environment in these zones by creating a Pearson correlation between the six indicators of good governance and the score of ease of doing business. This research aims to examine the importance of the indicators of rule of law, political stability, control of corruption, voice and accountability, regulatory quality, and government effectiveness to implement an attractive business environment in these two regions using a regression analysis. The empirical data were collected from the Worldwide Governance Indicators (WGI) (1996–2020) and Doing Business Report (2015 – 2020), World Bank. This paper represent an argument for the relevance of governance indicators on the business environment which was justified by a strong correlation near to 1 for all the indicators. As a general perception, an attractive business environment will be one of the most important results of the existence of good governance. The second objective is to prove the relevance of governance quality for the ease of doing business in order to achieve the development for both regions.

Keywords: Governance, Business environment, Ease of doing business, Worldwide Governance Indicators, Visegrád Group, Maghrebcountries

Introduction

Good governance has become a topic of great interest for both scholars and public policy organizations due to its importance and effectiveness to deal with general topic as the economy development, business environment, social stability, and digitalization.

This paper will focus on the effects of good Governance on creating a transparent, free, and attractive market in Visegrád Group and Maghreb countries. Good governance must necessarily guarantee a framework of good rules that clearly establish and clarify property rights, rules, and transparency in order to enhance the predictability of economic interactions between various contractual partners.

Several researches highlighted the link between governance and various development outcomes using the governance indicators as quantitative dimensions of good governance. These indicators are designed to measure the main characteristics of good governance, reflecting aspects, which many would consider as being relevant for a good application of the good governance aspect. Some academic papers empirically tested how these characteristics influence the various development outcomes.

The business environment seems to be one of the affected development outcomes by these indicators. As a result, this paper intends to empirically investigate the influence of the governance indicators on the ease of doing business, aiming to develop this empirical analysis in two different regions (Visegrád Group countries and Maghreb countries). The choice of these two regions was based on the transformations and dynamicity of their environment in the last decade. The main hypothesis of this research are:

- Governance indicators have a strong influence on the business environment.
- The governance indicators in the Visegrád Group region have a positive effect on the business environment in this region.
- The governance indicators in the Maghreb region have a negative effect on the business environment in this region.

However, the purpose of this study is to prove the influence of the governance indicators on the business environment even if this impact is felt differently by the two different regions. This paper briefly establishes the main coordinates in defining good governance and governance indicators. However, it presents the research methodology and research questions.

In the next session, this paper deals with empirical analysis of the results and finishes with conclusion. The findings in this study provide context for initiating constructive debates concerning the real influence of governance indicators on the business environment and the ease of doing business.

Literature Review

Many studies and researches worked on clarifying the connection between governance and different development outcomes. Through history, scholars have focused more on corruption as the most important threat for development. Mauro, in his paper "Corruption and Growth", showed the effects of corruption on the economic growth and investment. The following researches shared the same opinion as Mauro but with more specific target.

The paper titled "Corruption, Public Investment, and Growth" by Tanzi and Davoodi (1997) prove the influence of corruption on the Public Investment. However, Wei in his paper "How Taxing is Corruption on International Investors" showed the effects of the corruption on the attraction of international investors. Friedman continue the work on corruption but this time in making evident the role of corruption in the development of the unofficial economy. Other scholars made their researches on the role of institutions in achieving the economic growth as Keefer and Knack in their paper titled "Does Social Capital Have an Economic Payoff?".

Moreover, the outcome which was analyzed during this paper, the business environment, was examined by Çule and Fulton in their research "Corporate governance and subjective well-being". They showed influence of governance over the business environment. According to them, the creation of a business environment is relative to the reduction of bureaucracy, easiest legislations for investors, and control of corruption.

There are other studies which shared the same opinion like "The impact of governance reform on performance and transparency" by Price, Román, and Rountree (2011). This research proved the positive relationship between the quality of governance and the good allocations of economic resources.

Based on these previous theoretical and empirical literature, this paper will investigate the governance's role in business environment using a correlation between the good governance indicators and ease of doing business for two different regions (Visegrád Group / Maghreb countries).

Defining Good Governance

As it was mentioned above, one significant challenge for researchers is to find a definition of good governance which could be widely accepted. According to Ngobo and Fouda (2012), the concept of public good governance became rather significant in the early 1990s when many international aid agencies realized that poor governance was a major obstacle to the economic development of many developing countries. Landell-Mills and Serageldin (1991) defined the concept of governance as the use of political authority and exercise of control over a society and the management of resources for social and economic development. Some experts from the World Bank wrote a

working paper titled "Governance and economy: a review", citing from Random House College Dictionary (1984, p. 571) which defines governance as a neutral concept, meaning "the political direction and control exercised over the actions of the members, citizens or inhabitants of communities, societies and states" (Brautigam, 1991, p. 3).

In the opinion of World Bank researchers, the influence of political factors in the process of governance should not be ignored. The power and authority of governments in establishing the necessary framework that regulates the social and economic functioning of institutions are decisive. In the same working paper, the World Bank experts highlight the idea that there are some dimensions of governance (six indictors presented by the World Bank) which affect some indicators such as accountability, openness, transparency, and the rule of law.

Governance Indicators

Despite the fact that governance concept were discussed by several policymakers and scholars, this term is still without a single definition. Many authors and organization proposed multiple definitions. In general, these definitions cover that governance is applied not only in the enforcement mechanisms and management of organizations as it was defined by the World Bank Development Report "Building Institutions for Markets", but also on the public sector management issues. The World Bank defined governance as "the manner in which power is exercised in the management of a country's economic and social resources for development".

According to the variation of data and information, Kaufmann, Kraay, and Mastruzzi defined in their paper the concept of governance as "the traditions and institutions by which authority in a country is exercised. This definition is used in this paper and it covers three important pillars. Each of this area contains two Governance indicators, resulting in a total of six dimensions of governance.

Table 1. A Synthesis of the Main Definitions of Governance Indicators

Area of governance	Governance indicator	Definition
The process by which governments are selected, monitored, and replaced	Voice and accountability	Capturing perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media
	Political stability and absence of violence	Capturing perceptions of the likelihood that the government will be destabilized or overthrown

		by unconstitutional or violent means, including politically-motivated violence and terrorism
The capacity of the government to effectively formulate and implement sound policies	Government effectiveness	Capturing perceptions of the quality of public services, the quality of the civil service, and the degree of its independence from political pressures, the quality of policy formulation, and implementation, and the credibility of the government's commitment to such policies
	Regulatory quality	Capturing perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development
The respect of citizens and the state for the institutions that govern economic and social interactions among them	Rule of law	Capturing perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence
	Control of corruption	Capturing perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests

Source: Kaufmann, Kraay, and Mastruzzi (2010)

Methods

The main research question of this study refers to whether the governance indicators captured through the six indicators discussed above have a positive influence on the ease of doing business, followed by the development of this empirical analysis. There is an extensive literature investigating the link between governance indicators and various development outcomes, but few authors were investigating the direct link that might be

observed between governance indicators and the ease of doing business measured through a certain score.

In other words, this paper intends to develop an empirical study based on, firstly, a Pearson correlation between governance indicators and score of ease of doing business and, seconldy, on a regression analysis starting from the dataset of indicators of governance quality and the score over the ease of doing business in nine countries presenting two different regions. Data referring to the indicators of governance refer to the year 2015 and 2020 and were available from the report developed by the World Bank.

The second dataset used within this study were the 'Doing Business' indicators of the business environment also developed by the World Bank. The World Bank report 'Doing Business in a More Transparent World 2020 and 2015' is an annual reports that evaluate the regulatory framework that ensures business activity and that restricts it.

Table 2. Description of the Variables

Variable Name	Source	Description	Countries
1. Voice and accountability 2. Political stability and absence of violence 3. Government effectiveness 4. Regulatory quality 5. Rule of law 6. Control of corruption	Worldwide Governance Indicators (WGI) 1996–2020	It ranges from approximately -2.5 (weak) to 2.5 (strong) governance performance	- Visegrád Group (Poland, Hungary, Slovakia and Czech Republic) - Maghreb (Tunisia, Morocco, Algeria, Mauritania and Libya)
Score on ease of doing business	Doing Business Report 2020, World Bank	The ease of doing business index make a score for the different economies from 0 to 100. For each country included in the sample, the score is calculated as the average of the percentile scores on each of the topics covered by the index calculated in Doing Business between 2015 and 2020.	- Visegrád Group (Poland, Hungary, Slovakia and Czech Republic) - Maghreb (Tunisia, Morocco, Algeria, Mauritania and Libya)

Source: World Bank, 2020

Results and Discussions

Considering the availability of data included in this study, the final sample in realizing the cross-country survey included nine countries, for which all three datasets were available. The tables below show a regional classification of all these surveyed economies for 2015 (Table 3) and for 2020 (Table 4). It can be observed that this is an overwhelming proportion of economies classified within Visegrád Group (four countries) and Maghreb countries (five countries).

All governance indicators are measured with scores from approximately -2.5 (weak) to 2.5 (strong) governance performances. However, the score of ease of doing business varied between 0 (weak) and 100 (strong). As a result, the country which has the score of its governance indicators nearest to 2.5 indicates a best practice of good governance and vice versa. Secondly, the country which has the highest score of ease of doing business nearest to 100 indicates that it contains a good business environment and vice versa.

However, considering the quality of business environment captured through the score on the ease of doing business measured by the World Bank, it is expected for the Visegrád Group economies to have a better capacity to promote a pro-business environment than the Maghreb countries. This is basically because the best scores correspond to the most effective countries from the perspective of the ease of doing business.

By comparing the two regions in 2015 and 2020, the Visegrád Group countries have a better good governance indicators and a better score of ease doing business. Czech Republic has the highest score of governance indicators in 2015 and 2020 (Only control of corruption was higher in Poland). The highest doing business score was for Poland in both observations. In the other side, Libya declared the worst score in all the indicators in 2015 and 2020.

Table 3. Score of Worldwide Governance Indicators (WGI) for Visegrád Group and Maghreb Countries in 2015

Country	Region	Voice and accountability	Political Stability	Government Effectiveness	Regulatory Quality	Rule Of Law	Control of Corruption	Doing business score
Hungary	VISEGRÁD GROUP	0.55	0.74	0.54	0.76	0.40	0.15	68.8
Poland		1.03	0.87	0.72	1.00	0.78	0.72	73.56
Slovakia		0.96	0.87	0.76	0.78	0.49	0.14	71.83
Czech Republic		1.04	0.97	1.05	1.09	1.13	0.50	70.95
Tunisia	Maghreb	0.24	-0.96	-0.12	-0.40	-0.06	-0.06	67.35
Algeria		-0.84	-1.09	-0.50	-1.17	-0.86	-0.64	50.69
Libya		-1.34	-2.19	-1.65	-2.23	-1.62	-1.61	33.35
Morocco		-0.62	-0.34	-0.06	-0.17	-0.08	-0.22	65.06
Mauritania		-0.88	-0.63	-1.02	-0.86	-0.86	-0.92	44.21

Source: World Bank data, 2015

Table 4. Score of Worldwide Governance Indicators (WGI) for Visegrád Group and Maghreb Countries on 2020

Country	Region	Voice and accountability	Political Stability	Government Effectiveness	Regulatory Quality	Rule Of Law	Control of Corruption	Doing business score
Hungary	VISEGRÁD GROUP	0.39	0.86	0.58	0.48	0.51	0.10	73.4
Poland		0.62	0.57	0.38	0.89	0.54	0.65	76.4
Slovakia		0.88	0.64	0.54	0.78	0.68	0.44	75.6
Czech Republic		0.98	0.92	0.96	1.24	1.06	0.59	76.3
Tunisia	Maghreb	0.27	-0.63	-0.20	-0.36	0.14	-0.07	68.7
Algeria		-1.10	-0.86	-0.53	-1.29	-0.78	-0.64	48.6
Libya		-1.38	-2.48	-2.01	-2.32	-1.97	-1.62	32.7
Morocco		-0.61	-0.33	-0.03	-0.12	-0.09	-0.35	73.4
Mauritania		-0.84	-0.75	-0.77	-0.81	-0.59	-0.81	51.1

Source: World Bank data, 2020

Robustness Tests

The robustness check has been done in this paper to ensure that the outcomes of this research are robust to the sample selection and the data preparation methods. In practical, in order to check if the differences between the means are statistically significant, a comparison of the p value (probabilities) to the significance level must be hold to assess the null hypothesis, which indicates the equality of the population means.

In general, the value of Alpha (significance level) is 0.05, which works well for the determination of results. This Alpha (0.05) indicates a risk of 5% or more to determine the existence of a significant difference. The Table 5 below presents the results (probabilities) collected from the robustness test of this data. In our case, the P-value $>\alpha$: It means that p-value is greater than the significance level. Thus, the differences between the means are not statistically significant. In this robustness test, all results have the same statistical significance and prove the robustness of the main results.

Table 5. Probabilities Values of the Robustness Tests for Visegrád Group and Maghreb Countries on 2015

	Visegrád Group	**Maghreb countries**
2015	P-value = 0.998	P-value = 0.978
2020	P-value = 0.986	P-value = 0.996

Source: Own calculation using the world bank data, 2015 and 2020

Moreover, the correlations results, reported in Table 6 and Table 7, confirm the existence of a relationship between the governance indicators and the place held in the score of doing business, even if this relationship is felt somewhat differently for all these six indicators of good governance. However, even if that in 2015, the 'political stability and the lack of violence' is considered as being important, from a statistical point of view, it seems that it is not able to be significantly influence by itself based on the ease of doing business, especially for the Visegrád Group countries. The same was the case for voice and accountability in 2020 which did not show a strong correlation with the ease of doing business (Table 6).

Moreover, the situation is different for governance indicators such as 'government effectiveness', 'regulatory quality', 'rule of law', and 'control of corruption'. However, for Visegrád Group countries, their influence is obvious in 2015 and 2020, while a strong relationship between the level of governance indicators and the ranking on the ease of doing business was statistically proven in both regions.

Table 6. Pearson Correlations between Governance Indicators and ease of doing Business inVisegrád Group and Maghreb Countries on 2015

Voice and accountability	0.903934
Political Stability	0.855148
Government Effectiveness	0.954408
Regulatory Quality	0.931641
Rule Of Law	0.946017
Control of Corruption	0.968045

Source: Own calculation using the world bank data, 2015

Table 7. Pearson Correlations between Governance Indicators and ease of doing Business in Visegrád Group and Maghreb Countries on 2020

Voice and accountability	0.87607
Political Stability	0.911839
Government Effectiveness	0.94068
Regulatory Quality	0.948947
Rule Of Law	0.956008
Control of Corruption	0.934282

Source: Own calculation using the world bank data, 2020

The regression results are displayed in Table 8 and Table 9, where the dependent variable is the ease of doing business, measured through the ranking of doing business assessed by the World Bank. On the other hand, the independent variables are represented by all the six governance indicators. Proceeding to an analysis from the different countries regions, the regression results emphasized the importance of some governance indicators as determinants for the business environment.

Table 8. Regression of the Score of the ease of doing Business on Governance Indicators in Visegrád Group and Maghreb Countries on 2015

	Visegrád Group			Maghreb countries		
	a	b	R2	A	B	R2
Voice and accountability	0.097899	-6.08372	0.693606	0.03551	-2.5392	0.888693
Political Stability	0.024621	-0.89264	0.267259	0.035146	-2.87423	0.705246
Government Effectiveness	0.030489	-1.40589	0.081656	0.045558	-3.04502	0.962839
Regulatory Quality	0.037955	-1.79809	0.212094	0.051572	-3.65453	0.845434
Rule Of Law	0.056887	-3.35521	0.116956	0.044753	-3.02905	0.955594
Control of Corruption	0.099833	-6.73912	0.487408	0.042499	-2.90556	0.956383

Source: Own calculation based on the world bank data, 2015

Table 9. Regression of the Score of the ease of doing Business on Governance Indicators in Visegrád Group and Maghreb Countries on 2020

	Visegrád Group			Maghreb countries		
	A	b	R2	A	B	R2
Voice and accountability	0.141111	-9.92574	0.543953	0.030878	-2.42736	0.909736
Political Stability	-0.04591	4.213475	0.142505	0.0449	-3.47489	0.783585
Government Effectiveness	0.021096	-0.97657	0.014454	0.043982	-3.1229	0.840453
Regulatory Quality	0.19013	-13.4922	0.718303	0.05144	-3.80458	0.930823
Rule Of Law	0.09131	-6.18928	0.255784	0.047361	-3.25764	0.87221
Control of Corruption	0.175629	-12.8023	0.986859	0.032998	-2.50893	0.822228

Source: Own calculation based on the world bank data, 2020

Analyzing the results of the regression analysis, it can be observed that in 2015 (Table 8), the indicators of Maghreb countries showed a strong variance of the ease of doing business (between 70% and 96%) contrary to the Visegrád countries indicators which indicated low variance (between 8% and 69%). The most influential indicators in the Maghreb countries are: Government effectiveness, rule of law, and control of corruption. However, it was voice and accountability for Visegrád Group. Another observation is that political stability, government effectiveness, regulatory quality, and rule of law explains very low variance of the ease of doing business for Visegrád group.

In 2020, the same results were concluded (Table 9). The indicators of Maghreb countries showed a strong variance of the ease of doing business (between 78% and 93%) by comparing it to the Visegrád countries indicators which indicated low variance (between 1% and 98%). The most influential indicators in both regions were changed: Voice and accountability and Regulatory Quality for Maghreb countries and a significant influence of Control of Corruption for Visegrád group (98%). Another observation is that political stability and rule of law explains very low variance of the ease of doing business with a negligible effect of government effectiveness for Visegrád group (1%).

It has been empirically proven by our research that government effectiveness, political stability, and rule of law explain from a global perspective only little of the variance of ease of doing business in Visegrad countries. There are some studies which identifies a negative correlation between political instability and business investment (Perroti, 1996; Mauro, 1995). Others prove empirically the effects of political instability on economic growth (Aisen & Veiga, 2010). These results showed that political instability have a high significant influence on investments which are different from our findings. The low influences of political stability on the ease of doing business in the Visegrád group can be explained by the other indicators as voice and accountability, and control of corruption are more highlighted in this region. The Maghreb countries had the same idea that political stability had the lowest influence on the ease of doing business when compared to the other indicators.

However, 'Control of corruption' influences significantly the business environment for Maghreb countries and Visegrád countries. According to Gani and Duncan (2007), the corruption in the public sector can negatively influence economic activities, including business environments. On the other hand, there are some studies which prove empirically the link between corruption and governance, which can affect the business environment (Van Rijckeghem & Weder, 1997).

The limitations of this study is that doing business scores or reports are not the only indicators which present the business environment in a country or

region. It can be measured also by FDI, international trade, etc. In addition, the effects of good governance indicators are not limited to only the business environment but also to the social and economic development of a country.

Conclusion

Several studies and literature investigated the connection between governance and different development outcomes. However, only few, which indicated the relation between governance indicators and the business environment, were included in this study as an evidence of the relation between Maghreb and Visegrád Group countries. This research used the six good governance indicators and the score of ease of doing business for both regions as quantitative data to prove this link.

In order to improve the business environment in Maghreb and Visegrád Group countries, the government of these countries must consider the ease of doing business as a priority on its activities by creating more accessible business regulation and regulatory process. The analysis presented in this paper indicated that for the Maghreb countries, the most influential governance indicators on the ease of doing business are the ones related to the respect of citizens and the state for the institutions that govern economic and social interactions among them in 2015. However, it was related to the capacity of government to effectively develop and implement sound policies (government effectiveness and regulatory quality) in 2020.

For the Visegrád Group countries, the situation is different. The most influential governance indicators on the ease of doing business are voice and accountability and control of corruption in 2015. However, regulatory quality and control of corruption were the most significant in 2020. It is clear from these results that control of corruption is the most important indicator, which influence the ease of doing business in the Visegrád Group countries.

Surprisingly, the common result for both regions in 2015 and 2020 indicated that political stability is the less important indicator for the business environment from a general perspective. The governance indicators have influence on the ease of doing business even if the impact was different on the Maghreb economies when compared to the Visegrád Group economies.

From the outcomes of this study, some recommendations can be held in order to improve the ease of doing business. For the Maghreb countries, almost all governance indicators have an impact on the business environment. It means that the governments of these countries must be working on improving all these indicators. The good governance concept must be more applied in the public management using new mechanisms in order to get a better business environment even if the political stability does not reach a good score.

Contrarily, the governance indicators in Visegrád Group countries did not have the same effect on the ease of doing business. Political stability, government effectiveness, and rule of law have a very low influence. In 2020, the control of corruption was the most significant factor for the improvement of business environment. It therefore means that the governments of the Visegrád Group must create new tools to control corruption and reduce it in order to make the business environment in this region more dynamic.

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Higher Education Funding Strategies: Towards Equity, Efficiency, and Quality

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Abstract

As economists have become increasingly interested in higher education, economic reasoning has been applied, resulting in extremely useful research in higher education. With the growth of market forces in higher education, the changing role of government, and advances in research on the economics of higher education, higher education funding is increasingly seen as a tool to stimulate the market. The development of an effective funding strategy may be one of the keys to developing higher education - its quality and efficiency, increasing equity and equality. The article adds to the existing literature on higher education funding and the impact of market forces on higher education. It aims to provide an analysis of economic reasoning applied to higher education, which can be used as a tool to develop a funding strategy. It also includes an overview of different funding models concerning economic reasoning and synthesizes different funding strategies regarding their impact on the higher education market.

Keywords: Higher Education Funding, Funding Strategy, Quality of Higher Education

Introduction

Higher education (HE) funding has been the focus of interest for policymakers and researchers in this field, as it is not simply a mechanism for distributing financial resources, but a tool in the hands of government and

policymakers to encourage certain behavior and promote the achievement of common goals in HE.

Funding in HE can promote equity and access to HE, development of teaching and research quality, funding can become the most powerful tool for promoting quality and excellence in teaching and research, strategic development, aiming at achieving the best possible results with the limited financial resources (Jooste, 2020; Jongbloed, 2020b). While developing funding policies for HE, the governments are expected to be ensuring equity and accessibility, together with safeguarding quality. The research in education finance has expanded and education financing is often connected to equity and equality (BenDavid-Hadar, 2018).

With the recent trends in HE, the market forces have strengthened and the government control of HE has become loose. What do market forces mean in HE and did the market arrive in HE? If yes, then why do we need government interventions in the HE market? How can funding affect the HE market and decision-making in the market? How can financial resources affect the outcomes? In this article, we will address these issues. First, we will discuss and analyze several HE trends that have impacted HE funding policies and strategies, then explain what market forces mean in HE. We will also dive into several important notions from economics that will help us understand HE funding issues in a more complex and profound way. We will discuss government interventions in the market – what are they and do we need them? Finally, we will conclude the article with discussions of different funding models and how they can serve as a tool for steering the HE market.

Massification of Higher Education and its Impact on HE Funding

Following the democratization of society and moving from elite to mass HE, HE's demand pressures increased dramatically and rising enrollments are a fundamental fact worldwide (Mendiolla, 2012; Dill et al., 2004; Guri-Rosenblit et al., 2007). The process is also accelerated by demographics, an increasing proportion of youth completing their secondary education, changing employment opportunities, and greater competition for better jobs; increasing regard for social mobility and justice, leading to policies designed to boost HE participation (Leach, 2013).

Massification has increased pressures on government funds, which were not able to meet the increasing costs of the HE (Bou-Habib, 2010) in face of growing student numbers, combined with increasing per-student costs and competition from other areas such as secondary education, primary education, and healthcare (Panigrahi, 2018; Callender, 2020). The impact of these growing enrollments on the funding of HE is to accelerate the natural rate of increase of higher education per student costs and to escalate steeply and

continuously the public resources required to maintain the quality of the higher educational product (Johnstone, 2004).

The effectiveness or ability of government production to meet the rising demands was questioned, and several new trends, including privatization and cost-sharing, appeared (Dodds, 2011).

Cost-sharing is defined as a shift of at least some of the HE cost burden from governments (taxpayers) to students and is manifested in introducing or rising tuition fees in Higher Education Institutions (Johnstone, 2020). This term was first developed by Johnstone (1986) in his study of tuition fees and student finance in the UK, Germany, France, Sweden, and the US. It can be linked to the human capital theory, launched in the 1960s. In this economic perspective on education and labor, students, parents, and the government invest in HE for the sake of a return (Spring, 2015). An almost historical assumption that the state should fully fund HE was questioned, and as the state HEIs are under-funded and lack capacity and quality, we face the emergence of a private, tuition-charging sector. A policy shift towards greater cost-sharing can take the form of encouraging and sometimes even partially subsidizing a largely tuition-fee-dependent private sector. It can also reduce grants or other subsidies or simply freeze them (Armbruster, 2008; Johnstone, 2020).

The underlying assumption here is that HE is not solely a public good, but private as well, bringing private benefits to its consumers (Toutkoushian & Paulsen, 2016) Besides the public benefits of HE, which even include a decreased rate of depression among the population, HE offers private benefits for students and their families (higher future earnings, prestige), which is the reason why they are willing to pay for something that was fully funded by the government in the past (Teixera et al., 2017).

Across Organisation for Economic Co-operation and Development (OECD) countries, 25-64-year-old adults with a tertiary degree earn on average 54% more than those with only upper secondary education, bringing private incentives to get a HE degree (OECD, 2020) The public incentives include financial benefits like greater tax revenues and social contributions (OECD, 2017; 2020).

The cost of instruction, already being very high, is increasing even in the absence of growing demand. HE, being a labor-intensive industry, tends to get more expensive relative to the natural rate of inflation in the economy and one of its consequences is that costs and prices (tuition fees) outpace the rate of inflation (Johnstone, 2002; Teixera & Landoni, 2017).

Another explanation for cost increases in HE is called "cost disease", which explains the slow increase in productivity in service industries, industries where it is impossible to increase productivity rapidly, hence the increase in costs. Although some argue against this idea, believing that cost

increases result of insufficient performance of HEIs, 'cost disease remains the main explanation for cost increases in HE (Archibald, 2020).

The idea of cost-sharing is shared by the economists as well, as according to the benefits-received principle of equity, which is the part of the economics of the public sector, each party, who receives the benefits of the good or service, should bear its burden (Toutkoushian & Paulsen, 2016) The debates are usually on how much of the cost should each party cover. It is hard to estimate the share – as estimating the proportion of the benefits received is almost impossible.

To sum up our discussions this far, the idea of historically "free", meaning fully subsidized HE was challenged by the increasing demand pressure and increasing per-student costs (Gayardon, 2020) Governments have not been able to meet the growing demand for HE, the private sector has been introduced and there has been an increasing need of more effective and efficient ways of funding HE, due to pressures on public funds and also the growing pressures for more effective management of public funds, which we will discuss later. We often use the term 'market' when we talk about the higher education sector. But what does this mean, and has the market arrived in HE? This question will be addressed in the next section of the article.

Markets and Quasi-Markets, what do they imply for HE?

Alongside the increasing demand for HE, we observe increasing pressures on HE systems and HEIs for efficiency and effectiveness, which in turn can also be tied to the growing pressure on government funds. Political pressures arouse to control the funds allocated to the HE and the need to invent more effective and accountable funding and management models to steer universities to comply with the public interest appeared (Teixera et al., 2004).

New public management (NPM) approaches have brought a market-like environment to HEIs (Hamman & Beljean, 2020) Competition for funding has increased to increase efficiency and quality; Meeting the financial demands of continuously expanding HE is bringing the need for further diversification of financial resources and the new steering instruments (Jongbloed, 2010; Sporn, 2020).

What forms can government interventions in the HE market take and what is the role of government in the HE market? Government interventions in the HE market can take the form of public production, the provision of government subsidies, and issuing of relevant laws and regulations (Eurydice, 2022). Government interventions may provide quality, efficiency, differentiation, and innovation incentives. Widely over Europe, the government control, steering, budget mechanisms, and the monopoly of state-run HEIs were questioned. A new, less hierarchical relationship between government and HEIs was established, with more market-oriented approaches

to steering/funding and management. Facing the challenges of ensuring equity and efficiency in the market, governments have introduced "quasi-markets" in HE (Teixera et al., 2004).

Governments in the "quasi-markets" of HE are supervising the market, preventing failures; however, in the market-type coordination, decentralized decision-making by providers and clients is essential. Market behavior is stimulated in the "quasi-markets, " and government regulation and financing remain important coordination mechanisms. At the same time, the elements of competition, individual responsibilities, freedom of choice, and user charges are introduced (Jongbloed, 2010). The financial autonomy of universities is reflected in their ability to set tuition fees, borrow money on the financial markets, ability to invest in financial products, issue shares and bonds, own the lands and buildings that they occupy, and the extent to which they can accumulate financial resources and keep surplus on state funding.

The introduction of quasi-markets in HE is composed of three main vectors: promotion of competition increased privatization, and promotion of economic autonomy of HEIs (Teixera et al., 2004).

Before continuing our discussions, we should explain the "invisible hand" concept, popularized among economists and the focal point in our discussions. The term originates from Adam Smith's works and is used to describe the market mechanisms, mostly the efficiency of the market. The "invisible hand" is the ability of the market to regulate itself – it assumes that the decisions made by consumers and the profit-maximizing behavior of producers will distribute goods and services in the economy so that economy produces goods and services in an optimal way for the society. To be concise, the market is self-regulating and does not require government interventions. This idea advocates the "free market", but the reality is seldom this simple, markets do not always regulate themselves optimally, and "market failures", characterized either by excessive supply or insufficient demand/supply often arise (Teixera et al., 2004). As the market failures are common, governments intervene in the markets that provide goods and services crucially important for the state, such as education, healthcare, and public services. As discussed, government intervention is intended to stimulate certain behavior. It can be in the form of government production, subsidizing, and other actions to promote the good/service (it can be vice-versa, intended to decrease production and consumption, but this is not relevant to our discussions now) (Mikesel, 2011).

There is clear empirical evidence of the need for government steering in education to avoid market failures. One of the most important is connected to the notion of the perfect competition - perfect competition presumes that producers and consumers – in our case, HEIs and students possess perfect information about the educational programs, which is almost impossible in the HE market (Dill & Soo, 2004) Consumers and producers make independent

decisions and the price is determined for the product at the equilibrium price. The perfect information is necessary not only for consumers but also for HE producers. It serves as an incentive for producers to invest in quality improvements and better compete. The lack of information may result in a situation where "the social costs of the HE system may not produce the optimal social benefits" (Dill & Soo, 2004, p. 62). We will now elaborate on this topic further in the next part of the article.

Consumers' and Producers' decisions in HE – Do the market forces work in HE?

After economists started applying their theories to education, the notion of investment in human capital and the costs and returns of HE, as well as the decision-making process in "consumption" and "production" of HE became the sphere of interest of economists. One of the fundamental principles of economics is that due to the scarcity of resources, decision-makers should give up on something to receive something else (Toutkoushian & Paulsen, 2016) We are all well aware that there is no such thing as a "free lunch" and everything has its opportunity cost. Scholars studying education economics apply economic models of decision-making to analyze and understand the behavior of students, faculty, administration, the state in HE, and student enrollment decisions (Spring, 2015).

Economists assume that decision-makers in any field, including education, engage in the optimization behavior – they seek to maximize their goal-achievement facing the constraints they have and are perceiving their best interests. Each participant in the marketplace sends signals and corresponds to others' signals, about the price, quality, and availability of goods supplied or demanded (Massy, 2004).

Aggregate-level and individual-level studies are common in research on the economics of HE. "Aggregate-level demand studies used data on environmental characteristics (e.g., enrollment, high school graduates, starting salaries of college relative to high school graduates, unemployment, etc.), and institutional characteristics (e.g., tuition, financial aid, and other factors) to estimate the coefficients of demand functions that helped explain student enrollment behavior, inform tuition setting policies, and provided a means to forecast enrollment at the institutional, state and national levels, and inform tuition setting policies." (Toutkoushian & Paulsen, 2016, p. 15). The individual-student data focused more on institutional and student characteristics.

The goals of decision-makers vary at different times and contexts, so economists express these goals in a more general form – utility or satisfaction. The decision-makers are trying to maximize their utility or satisfaction from consuming the goods with the constraints they face. The complication of this

reasoning is that the utility or satisfaction cannot be measured directly (Spring, 2015).

Consumers and producers engaging in the decision-making process in the market, characterized by the optimization behavior discussed earlier, compare the change in benefits – the marginal benefit, to the change in costs – the marginal cost. For instance, the faculty, deciding on admitting a new student, compares the marginal benefits associated with the enrollment of the new student (tuition fees, prestige, reputation, or other benefits), with the marginal costs associated with the student intake. As long as the marginal benefit from the additional student exceeds the marginal costs, the institution admits the student. For the non-profit institution, it is enough for the number of students to cover the costs, while the for-profit institution is interested in the profit left from excluding the costs (Toutkushian & Paulsen, 2016).

The decision-making of "consumers" is also complicated. First of all, as we have noted, education is not a regular good. A person, before entering HEI, should decide whether or not the benefits associated with education outweigh the costs, which include direct (tuition and fees) and indirect costs (foregone income from not entering the labor market, time for other activities). The student pays for the service for several years and gets the benefits years after graduating (Sá & Sá, 2020).

After discussing the decision-making process of students and HEIs, we should turn to the government, one of the most important players in the decision-making process on the HE market. As economists see HE as the medium for forming human capital, they also seek evidence for indirect benefits that educated people can bring to society, ranging from decreased criminal rates and increased literacy to the country's economic growth (Jongbloed 2020a). These may lead governments to invest more or subsidize HE so that more citizens attend university.

Some markets are also characterized by positive externalities, or spillover benefits, which lead to increased government interest. A positive externality occurs when a good or service consumption benefits others who do not participate in the market. The government's decided to intervene in the market of education (which is proven to have the above characteristic), thus can be explained and justified by the nature of the HE market and the positive externalities it produces. Governments decide to influence the production of public goods and goods/services that provide positive externalities. As if left "alone", the market may not "produce" as much as is demanded by society (Mikesell, 2011; Toutkoushian & Paulsen, 2016).

If we return to the free market discussions, we can see why government interventions are necessary for the higher education market. Market failures in the HE market will lead to severe consequences for the state. Moreover, during the cost-benefit analysis of their decision-making process, students and

prospective students do not consider the positive externalities or their education's impact on the society around them but weigh the private costs and benefits. Let's look only at the private demand. T educational resources will be underproduced and government may decide to intervene, for instance, by providing subsidies (demand-side intervention)   (Toutkoushian & Paulsen, 2016).

The interventions should always be planned carefully. Subsidizing every student may not be the cost-effective solution, and in mass HE, it sometimes is less feasible. There is also a risk of cost-ineffectiveness if we are trying to maximize the social benefits of HE, as many students benefiting from the subsidy may have gone to the HEI without financial support. The increased costs do not increase the positive public externalities in this scenario. According to the marginal cost-benefit analysis, the student will choose to attend the HEI if the private benefits outweigh private costs, this is why some decide to receive HE and some do not (Sá & Sá, 2020) So, while giving subsidies in the form of grants, the government is increasing the net marginal benefit for students, but for some of them, the net marginal benefit is already enough to attend university. To maximize the intervention results for the public, the ideal solution was to give grants to students, who, without it will not attend the HEI.

Shortly speaking, the impact of subsidizing HE or funding HE costs for students from low-income families on the society will be higher, but if the outcomes of education of these students are of a relevant level. Otherwise, subsidizing may encourage participation, but not necessarily achievement. In this case, there will be inefficient government spending (Dill et al., 2004).

When the government decides to subsidize education costs by reducing the private costs of education for students, it is a uniform subsidy, which can be arguably inefficient as it is unnecessary for some students and may be seen as an inefficient use of public funds. An example would be merit-based subsidies. Due to the abovementioned concerns, non-uniform subsidies, which vary for students, deserve less criticism (Toutkushian & Paulsen, 2016).

So, suppose the students and their parents weigh the private costs and benefits of HE and make decisions accordingly while looking at the net private benefit. In that case, the governments should decide how much total support to give, to whom to provide the support – students, institutions, or both, and how to distribute the funds – which brings us back to the funding methods and strategies.

The market forces in HE triggers changes in consumers' decisions following the demand curve, the market becomes decentralized and producers are adjusting to the market preferences (Massy, 2004) For-profit HEIs most likely will not offer the programs with low demand on the market, or with low price as the value function will lead to losses, however, a non-profit institution

may wish to subsidize the program to promote the "public good" and ensure the mission attainment and/or "preserving" of the field.

The discussion in this section will conclude with the free market and, once again, the ability of the market to regulate itself, including prices. We believe that the discussions have provided some arguments for government interventions in the HE market. The market cannot dictate price if there is no perfect information about the goods and their quality (as many argue, in the case of the HE market), the shortage of information prevents the "invisible hand" to guide towards quality improvements. We also mentioned that the funding allocation must guide the maximization of public benefits and foster participation in the HE market. Now we can turn to discuss different funding strategies.

Massy (2004) believes that formula-based steering is the answer to the problems in the HE market. He states that allocating funding based on subjective evaluation and making results public can be used to promote the public good. He offers goals like "technology-based productivity improvement, growth by substitution, and adherence to the mission. Most importantly, they might include investment in the provision of information about educational quality (p. 32)". Performance-based funding, according to Massy, thus, steers universities in the direction that is believed to benefit the public good and at the same time, does not overpower or disempower them, but provides for a more effective delegation of power.

Funding Models and Strategies

We now turn to the funding models used by governments that are supposedly aimed at reaching the goals of HE: quality, efficiency, and equity. Historically, funds were allocated to HEIs according to the input measures – like student enrollments, staff numbers, positions, etc. Now we see the increasing importance of funding HE providers based on measures of institutional performance, which is called the performance-based funding model. For performance-based funding, institutions allocate funds based on their actual or projected results (Jongbloed, 2010; Herbst, 2020).

Even if HE has characteristics of a free, competitive market, government interventions, which can take the form of funding decisions, sometimes are needed to ensure the effectiveness of the market, or attainment of certain goals, as discussed before. One more interesting notion from economics should be explained – the "free rider" problem. Government interventions may be needed to avoid the problem. For example, the research conducted at the universities represents the public good, which everyone can benefit from, but takes plenty of resources to produce. Without policy aimed at promoting research activities, a free-rider problem can arise in research, when instead of investing resources and time to research, people are just using

the results of others' research (Toutkoushian & Paulsen, 2016) Government, through policies, including funding policy, can promote and foster research in HEIs.

In the report "Funding Higher Education: a view across Europe" (MODERN project of the European Commission), Jongbloed (2010) provides a grouping of funding mechanisms for HE according to the outcome VS input orientation. According to the level of decentralization, which is an interesting viewpoint – the funding mechanisms differ according to their level of decentralization and outcome orientation on a continuum.

There are different ways of allocating funds to the HEIs and we can classify them according to their degree of financial autonomy and input versus output orientation. According to Jongbloed (2010), with a line-item budget universities receive the financial resources by pre-allocated expenses (defined cost items and/or activities) and are not able to make allocation decisions. On the contrary, within the block grants, universities receive financial grants covering teaching, research, and ongoing costs and are able and responsible for allocating these funds according to their needs.

The report also discusses three funding types: formula-based approaches, contracts, and project-based funding. These funding options can be either input or output-oriented. For instance, formula-based funding may imply a fixed amount, formulas based on input measures, and formulas based on output measures. Project-based funding can be competitive or non-competitive. On a competitive basis, the institution receives the funds if it meets the criteria best, while in the non-competitive funding model, the funds are distributed equally or negotiated between the government and HEIs. The funding contracts in the contract-based funding could include either intentions or the agreed performance in detail. These funding models are usually mixed by the governments, for instance, project-based funding is often used to fund the research activities.

According to the European University Association's (EUA) publication "Define Project: Designing Strategies for Efficient Funding of Universities in Europe" (EUA, 2015), performance-based funding can serve different purposes, including an incentive tool. The performance-based funding is often misunderstood and associated with formula funding, while formula funding does not necessarily imply output orientation. Moreover, according to the report, the most common method of funding HE in Europe is the funding formulae which is input-oriented mainly, which are combined with performance contracts, budget negotiations, and historical allocation. However, "A majority of the 28 systems covered consider their basic funding allocation mechanisms to be at least partially performance-based for teaching (via graduate-related criteria), and partially or mainly performance-based for

research, where indicators related to publications and external research funding are normally taken into account" (EUA, 2015 p. 11).

Performance-based funding, which is associated with NPM, is usually argued as the most useful tool for government steering towards the desired behavior within HEIs. Still, the expected drawbacks of this method are also discussed, including the mainstream approach, the temptation to lower standards in regard to research and teaching quality (Biscaia, 2020).

Another interesting funding method is the voucher system. As the public authorities cannot plan and manage the HE market, self-regulatory mechanisms, where the consumers and producers regulate (to some extent) the market and the choices made by students and HEIs themselves are driving the system. For the HE market, this implies the appearance and importance of demand-side funding, which is the voucher system (Jongbloed, 2004). A voucher represents a sum of money that the student receives to pay for the tuition on approved programs, whether in public or private institutions. The notion of a voucher system implies that institutions competing for students focus on the needs of students and stress the importance of student choice and competition. The voucher system is the market-oriented, demand-driven type of funding for HE (Teixera et al., 2004).

Some questions and critique, however, exists regarding the voucher system:

1. Are the student's informed customers? (the issue discussed in the beginning – is information asymmetry);
2. How useful is the competition? It can lead to some institutions flourishing and others devastated.

Barr, 1998, in Jongbloed, 2004: Governments, while choosing the voucher system should think of it as a continuum and choose from "pure central planning" and "law of the jungle". He argues that governments should consider several constraints:

1. Protecting subjects (disciplines) – this may be done by arranging vouchers for some of the disciplines;
2. Protecting Institutions – Vouchers may be tied to some regional universities;
3. Protecting Individuals – Assigning vouchers to low-income students;
4. Protecting Quality – Imposing standards, evaluating them, and publishing the results.

Another approach, mostly used by economists to describe the government intervention in the education market is to divide the model into two broad categories – the low-tuition/low-aid model, where the government decides to increase participation in the education market by imposing a low tuition rate and offering low aid, which mostly has the form of uniform

subsidies; on the other hand, high-tuition/high-aid model to encourage attending HE for the students who do not have financial resources to attend the university (Toutkoushian & Paulsen, 2016) However, as the evaluation of individual students' income is time-consuming, it is easier for governments to allocate block grants to the HEIs. They then decide on the financial aid for students themselves.

Based on the discussions in the paper, the funding models differ according to the degree of autonomy that is granted to HEIs, the degree of output orientation, and the way the funds are allocated to the universities. Different, common ways of financing HE were discussed in the previous part of the paper, however, it should be noted that the funding models discussed are not mutually exclusive. The government can decide to use different funding models simultaneously. Even though there is a tendency toward the performance-based approaches to funding, mostly they are combined with other funding models to reach the goals of HE and use the resources efficiently.

Discussion

Throughout this paper, the author discussed several important theories from economics, which were successfully applied to HE and are widely used in research. Even though HE differs much from the market of regular goods and services, the existence of the market forces is still evident in HE, strengthened by the policies aimed at loosening government control and increasing free choice, and the introduction of user pays.

As the existence of market forces is evident in HE, funding can serve as the tool to stimulate behavior on the market – whether of the "consumers" or "producers". The author believes that economic reasoning should be applied to the process of developing the funding strategies for HE, as to maximize the impact that the funding has on the system and institution. The funding strategies should be chosen and mixed carefully and accordingly to the effect that is needed for stimulating the market – whether the highest concern is increasing participation in HE for specific groups of people, whether the aim is to promote the industry orientation, research productivity or other goals, the funding method can be a steering tool.

The discussions in the paper are summarized in the graph below:

Figure 1: Funding Strategies – Demand versus Supply Orientation and Input Versus Output Orientation

Developed by the researcher
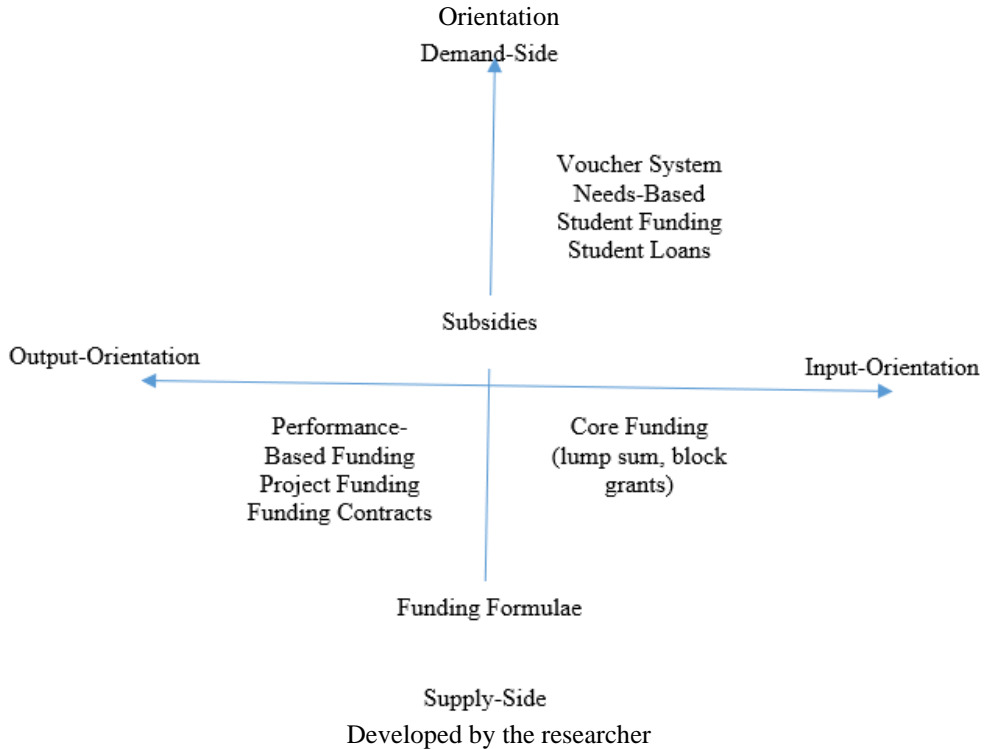
      A plethora of research has been carried out on the demand and supply of HE, costs and benefits of HE for individuals and society as a whole, and education financing as the tool for government steering. Most researchers advocate output-oriented funding methods, that are aimed at stimulating certain behavior with the funding, as well as needs-based funding to increase participation of otherwise disadvantaged groups to increase the positive externalities. Many researchers and practitioners argue that government core funding is also needed for HEIs to overcome the challenges of rising costs.

      To conclude the discussions, it should be pointed out that the HE market, because of its differences from the 'ordinary' market for goods and services, cannot be analyzed solely by economic reasoning. HEI is the unique "producer" and the marginal benefits from keeping the program or course are not necessarily connected to the financial benefits. For E.g. the university may be interested in operating the course or program just to save or promote the discipline and even though the direct costs associated with the teaching can be higher than direct marginal benefits, the institution can decide to keep running the program. Moreover, the institution may invest in the research project not aimed at increasing the profit, but to increase reputation, prestige, or contribute to the development of society or a particular discipline. The same discussions can be applied to consumers, as student behavior cannot always be explained

by simple economic reasoning. This makes the analysis of decision-making in the higher education market more complicated. Costs and benefits in the higher education market are not always directly associated with finances. In higher education, there are many non-market characteristics involved in the decision-making process.

Conclusion

The field of economics and finance in higher education is vast and has attracted the attention of researchers around the world. Many researchers have focused on the issues discussed in this article. The paper provided a summary of the important notions and theories from higher education economics, which have an immense impact on funding strategies used by governments. By applying economic reasoning to HE, governments can plan and implement the strategies that impact higher education supply, and demand and maximize the public gain from HE, that increases efficiency, equity, and equality.

Although different strategies can be used to fund HE, whatever the funding strategy, based on the results of previous research and the author's opinion, they can serve as a valuable tool for government steering.

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Museums and Crisis Management due to Covid -19. Effects of Pandemic and the Role of Digital and Social Networks Communication

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Abstract

 The overall purpose of this study is the effects of lockdown within Italian museums caused by the Coronavirus disease-19 (Covid-19) emergency. During the pandemic, the museums are being closed, and the use of digital content and social networks seems to have been the solution to overcome the closure problem. The study analyzes the role of digital content and tools in communication to manage the shock due to Covid-19. The basic design of the research recurs to the crisis management model used to analyze three stages crossed by museums as preparedness, reaction, and recovery. The study involved several Italian museums grouped according to the art collection, governance, and funding sources. A semi-structured questionnaire was sent to them. The main findings show the presence of digital as a strategy already adopted by museums before the outbreak. However, the results reveal the absence of a preventive phase as requested by the model of crisis management. At the same time, it has emerged the need to adapt the digital content to guarantee the mission of fruition for the public.

Keywords: Italian museums, covid-19 effects, crisis management, digital strategy

Introduction

The Health emergency caused by Covid-19 introduced a crisis for many sectors, including the cultural sector. It caused the closure of cultural venues, loss of audiences, lack of income, blockage of events, low growth in cultural spending, and reduction of economic- tourist-induced activities.

As reported by NEMO's survey 'The majority of museums in Europe and around the globe are closed. Closing doors to the public results in a drastic loss of income for many museums. While some museums have found their budget minimally impacted yet, some museums, especially the larger museums and the museums in touristic areas, have reported a loss of income of 75-80%, with weekly losses adding up to hundreds of thousands of Euros' (2020:1).

Due to the pandemic, the museums have redefined their space of relationship with the public. Forced closures have confronted museum leaders with a scenario adaptation that has forced closure and the choice to ensure their organizational mission.

Accordingly, there has been an acceleration toward digital transformation (Agostino et al. 2020; Xu, 2021), breaking down the problem of the physicality of the place where to live the museum experience.

However, during the Covid emergency, the museums have demonstrated the capacity to react, readapt, and experiment with new approaches to the public. A museum without walls was created or 'musèe imaginary according to the concept elaborated by the historian Malraux in 1967.

Nowadays, the museum must be able to embrace the challenges of the present and make itself a participatory and inclusive place (ICOMs, 2019). The lockdown caused by the Covid emergency has interrupted the activities of all productive and non-productive sectors. So, museums have had to manage the crisis that has involved them despite not being prepared (Mackay, 2022).

The use of digital technology and social media could be considered a tool to help overcome a crisis if it is part of a management plan. However, the use of new technologies or new media art (Wang and Lin, 2018) in the museum sector has been analyzed in terms of its impact on collections (Vom Lehn and Heath, 2005) or visitors (Soren, 2005). There is a lack of studies about whether and which new strategic actions have been implemented by museums in times of shock (financial crisis, terrorism, and impact on tourism) or whether they have adapted to a contextual scenario without taking any initiative.

The main models of management crisis identify four stages prevention, preparedness, response, and recovery. Through the application of the model of crisis management, it intends to understand if the use of social media and

digital technology has supported the management of the crisis of Italian museums during the health emergency.

Through the analysis of the presence or absence of digital strategies and social media in Italian museums aims, the paper aims:

(1)   Investigate whether the use of digital and social media as part of a long-term plan already started or if it has been implemented after the Covid emergency.

(2)   Investigate if digital and social media are tools that have helped and supported the museums in the management of the crisis.

Initially, the research involved 2,156 museums identified through a web search and situated in twelve Italian regions. A total of 73% of the e-mail addresses have been reached. It was sent as a semi-structured questionnaire addressed to the museum manager or director.

Some museums have reacted with actions implemented immediately, others have evaluated initiatives to implement in the medium-long term. Applying the crisis management model, it emerged that museums do not have a phase of prevention (Ramsey, 1994) and use social media and digital to have proactive communication with the audience (Thomsen, 1995).

The paper is structured in five parts. Introduction and analysis of the scenario due to the impact of Covid-19 on the museum sector. It follows the theoretical background and method articulated in two parts: the first investigating the role of digital strategies in museums and the second presenting the main theoretical frameworks on crisis management. Afterward, it follows the results and discussion and, the conclusions.

Theoretical Background
Covid-19 impacts on museums

In early March 2020, the World Health Organization declares the pandemic crisis caused by the spread of Covid-19. China is the first country affected. Italy will follow after it (WHO press conference, 11 March 2020).

Internationally, among the consequences, the cultural sector has seen the cancellation of events and the closure of meeting places and attractions such as museums. At the same time, also tourism sector records around a 70% reduction in tourism activities due to the forced block (OECD). Many countries pass from a condition of 'over-tourism' to one of 'non-tourism' (Gossling et al., 2020).

In Italy, the Bank of Italy report (2020) underlines the reduction of 4.7% of GDP in the first quarter of 2020, estimating a contraction of 9.2% per year. Moreover, the macroeconomic forecast has predicted a 13.5% loss in foreign demand for the products, recoverable within the next two years. The recovery is conditioned by factors such as the spread of the virus, solutions

with which enterprises and citizens face the crisis, investments and, efficacy of policies.

About museums, the first study drawn up by the Network of European Museum Organizations (Nemo's Report, 2020) analyzes the economic impact on 1,000 museums distributed in 48 countries and their ability to continue to guarantee 'informal education through the use of digital technology. The relevant result is about the role of digital and its importance in cultural heritage because it can lead to an increase in the rate of digitization, connect people, enable knowledge, and transform existing resources into new cultural products.

NEMO's Report investigates many areas, the losses for the organizations, the activation of smart-working, the assignment of new tasks to the staff, access to national funds, and the limited ability of museums to seek alternative sources to deal with losses.

'The majority of museums in Europe and around the globe are closed. Closing doors to the public results in a drastic loss of income for many museums. While some museums have found their budget minimally impacted as of yet, some museums, especially the larger museums and the museums in touristic areas, have reported a loss of income of 75-80%, with weekly losses adding up to hundreds of thousands of Euros'.

Digital has supported the communication and sharing with the public and the creation of virtual meeting places. Online activities have increased by up to 80% thanks to the human resources dedicated to the digital level and additional resources allocated to support them. The online visits and participation have increased from 10-15% more than 25% of the sample to 200% more representative of 5% of respondents.

The ICOM (2020) study carried out between April and May on 1600 museums in 107 countries confirms what was already highlighted by the previous NEMO's Report. In addition, 12% of participants also declare the risk of definitive closure of their museum, the suspension of payment of salaries (54%), non-contractual renewals for freelancers (2,6%), and layoffs (16%).

Many museums in all countries have transformed into digital museums facing an emergency. This process has stimulated the museums to innovate to communicate their cultural heritage to reach and engage the visitors (Carlsson, 2020).

On the other hand, if museums need to innovate themselves during the lockdown, at the time of reopening they need to apply security protocols to guarantee the visits. Some of the actions introduced are alternative paths for social distancing, online reservations, sanitizing stations, and temperature scans (Laura Itzkowit, 2020).

Regarding the funds to support the sector, at the European level 2 financing plans have been developed for the relaunch of European countries,

making € 37bn available to the Member States in the context of cohesion policy: the 'Coronavirus Response Investment Initiative (CRII)' and 'CRII Plus' adopted various recovery plans. Meanwhile, Italy adopted with Decree-Law on 19 May 2020, n. 34 called 'Rilancio' a Fund to support businesses and cultural institutions such as publishing, entertainment, and museums belonging and not to the public sphere. In addition, collaboration in the sector has been revealed essential in the absence of official guidelines to overcome the crisis (Mackay, 2022), although it was clear that the cultural system was not prepared to face it.

Museums and the approach to the digital strategies during the Covid-19 emergency

Today, museums have the role of the communicator of culture, where it develops an experience of knowledge and learning. Furthermore, the museum experience can impact the well-being development of cultural welfare (Lampis, 2017).

The concept of the museum is conceived as a space of democracy, an inclusive place, a participatory space that involves the community, which 'recognizes and faces the challenges of the present with the role of being the guardian of heritage to 'preserve, research, interpret and exhibit' (Fraser, 2019).

Technological innovation has also impacted museums, developing several contributions in museum management to understand the impact of digital on exhibitions (Vom Lehn and Heath, 2005) or analyzing the experience of virtual tours for visitors (Soren, 2005).

New media art includes all the digital strategies that a museum can adopt to engage the public recurring to Information and Communication Technologies (TIC), online collection, web, mobile, gaming, augmented reality, and social media. ICOM distinguishes three types of actions according to the strategy adopted by museums: Brochure, Content, and, Virtual. The first one elaborates contents for the web, the second constructs a database through the digitalization of collections, and the third elaborates the contents to ensure a similar enjoyment to the live experience.

Wang and Lin (2018) pointed out that the future of museums lies in adapting to digital as they evolve their structure and increase their competitiveness with others. It is necessary to establish a progressive strategy that leads to the transformation of museum content through the new media art.

Kahn (2020:3) writes, 'creating materials that are designed with digital in mind, rather than as an afterthought, would allow museums to consider how they might be able to act as both repositories, and science communicators to the entirely new audiences'.

The annual report of the Italian statistical Institute - Istat (2019) sustains that many museum structures are using technologies in the face of a low rate of digitization of heritage.

It generates an increase in audience engagement and better communication.

On the other hand, ICOM (2020) highlights the weaknesses of the cultural sector connected to the scarcity of resources dedicated to digital communication, the activities carried out and the investments made in this direction. In the last period, museums can approach digital with far fewer qualms and problems, always relying on internal resources both at an organizational and economic level (Politecnico Report, 2020).

Digital has proven to be the solution, but some have questioned the meaning of the experience. The latter involves the loss of reflection, immersion, and meditation in the face of direct contact with the masterpieces. According to Verdon, the digital has led to a simplification and loss of meaning of the live museum experience.

Other researchers reflect on the opportunity that the crisis has brought in terms of accessibility of materials (Kahn, 2020) although, policies for the provision and use of materials that regulate their use should not be underestimated (Frigo and Stabile, 2020).

The research of Agostino et al., (2020) questioned whether the pandemic crisis worked as an accelerator for the digital transformation process in those public service delivery sectors. Research highlights increasing activities and interaction on social while maintaining the educational role rather than entertainment, but also the need to take unplanned measures and make them part of a plan with the risk of introducing technologies with a high rate of obsolescence.

The pandemic crisis has been a moment of reflection for museums to develop digital strategies and online experiences, programming monetary investments to support an inclusiveness vision of digital resources (Xu, 2021).

However, there is a dilemma regarding how the cultural product is managed, whether it is free or not, raising the issue of economic sustainability and re-evaluation of the use of adequate internal resources in terms of training to develop and offer digital content. These are all aspects on which to base future reflections to accompany the process of digital transformation to be carried out not only to face an emergency.

Management crisis models and the role of social media and ICT

The pandemic caused by the Covid-19 outbreak should be considered a sudden shock that triggered a global health emergency, putting all sectors in crisis. Currently, the studies about the impact of the pandemic crisis on the cultural system do not relate to the actions and stages in which the crisis was

handled but highlight the response by the art world in addressing its audience using technology. Ou (2020) considers the museums' focus has been oriented in the short term to manage the emergency, but this must result in a future reorientation in how they want to operate.

The research literature on social networking and social media to manage crises is circumstantial to the natural disasters, health emergencies, financial crises, and terrorism with the impact on every level of organization's management (Mitroff, 2005), but very few in the cultural sector.

The term 'crisis' has taken on different connotations whether it refers to an organization (Seymour and Moore, 2000) or to a negative event that damages the environment and human life (Bland, 2000).

A crisis is caused by factors or situations internal or external to the organization and is the consequence of an intentional (e.g., terrorism) or unintentional (e.g., an accident) event (Coombes,1995). Other cases are incidents that affect human safety, the environment, or a negative reputation of the corporations caused by the products (Heath, 1998).

The time horizon determines the impact on the organization (Meyers, 1987). Booth's (2015) model recognizes three types of crises sudden, periodic, and gradual threats.

For each crisis, there are consequences for the organization, which implies entire, partial, or gradual losses. Seymour and Moore (2000) introduce another two types of crisis called Cobra and Python. The first refers to the crisis that catches a company unprepared; it is a shock as a natural disaster. The second refers to the crisis that creeps gradually into the organization and could be caused by poor management. For sure, Bundy et al. (2016) identify four main features of a crisis such as uncertainty, a threat to the organizations and stakeholders' behavioral phenomenon, and part of processes.

Each of these crises involves a type of response that involves defensive actions based on trust and knowledge because in the context of a crisis or change the level of efficiency could be reduced as in the case of the implementation of public reform (Farantos and Koutsoukis, 2015). To resolve a crisis it is necessary to manage it; according to some models pre-crisis conditions must be restored to overcome it. Therefore, the crisis management model has considered a multidisciplinary area because it covers many topics and is articulated in different stages (Mitroff, 1996; Faulkner, 2001; Fink, 1986; Ritchie, 2004).

Researchers have addressed studies on different types of crisis management due to external factors: financial (Aliber and Kindleberger, 2015; Ferguson, 2012), tourism due to terrorism events (Faulkner, 2001; Evans and Elphick, 2005), health due to the spread of disease (Chien and Law, 2003). It is a process that involves four phases (Fink, 1986; Evans and Elphick, 2005): mitigation or prevention, readiness or preparedness, response or reaction, and

recovery (see figure 1). However, crisis management models assume that a crisis needs to be managed through prior forecasting and subsequent planning because the non-crisis phase prepares the organization to react in face of a possible scenario. Usually, the organizations do not implement this process (Bundy et al., 2016).

After that, it will follow the stage of crisis in which the organization can fail or survive. Meanwhile, it develops the phase of management and learning from the problems manifested and a return to the non-crisis situation.
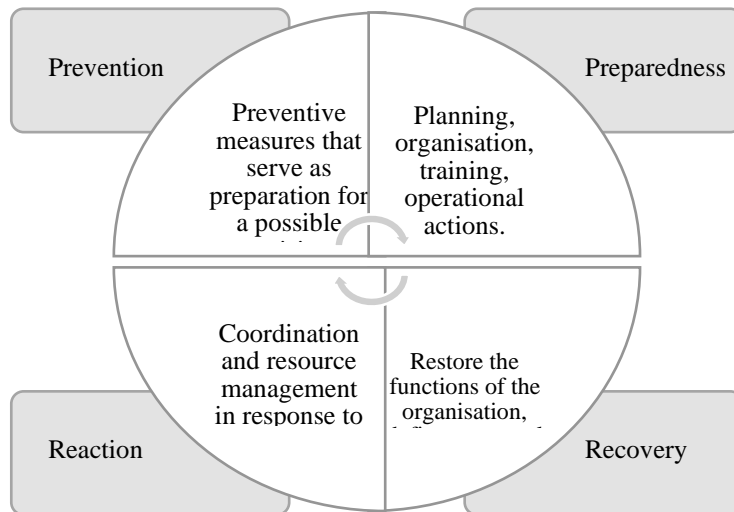
Fig.1: Stages of crisis management. Readaptation from Bundy et al. (2016)

In the last years, studies have explored the use of the Internet of Things as a function ability to communicate and impact in all stages (prior, during, and after) crisis management (Combes, 1999; Gonzalez-Herrero & Smith, 2008; Hughes et al. 2008; Liu et al.2008; Vieweg et al., 2008), above all social media such as Facebook, Twitter, Instagram, Tik Tok and others (Alexander, 2013).

Many reasons support the use of social media during a crisis. They permit to analyze the environment in which a crisis happens, manage the communication because it is possible to reach the people, provide timely information and, to have a high degree of interaction (Sigala, 2012), to reply and reduce the risks (Alexander, 2013), obtain information by citizens, monitoring formal and informal communication (Flizikowski et al., 2014; Lachlan et al., 2016).

Method and Methodological approach

The work collects data from Italian museums about the impacts, actions, and decisions during the first wave of the pandemic. The aims are:

(1)   Investigate whether digital and social media have been used to respond to a sudden threat or if it was part of a long-term plan.

(2)   Investigate if digital and social media are tools that have helped and supported the museums in the management crisis.

This paper highlights data on the consequences of Covid-19 on Italian museums through the perspective of strategic crisis management.

It was made a review of the main reports about the Covid-19 scenario in the cultural sector and an analysis of the literature about patterns of crisis management.

A qualitative-quantitative method was used, with a grounded approach as analyses and studies on the phenomenon of Covid-19 crisis management in museums.

The sample involved the museums of 12 Italian regions representing Northern, Central, Southern Italy, and the Islands. According to ISTAT, in Italy, there are more than 4900 museums. However, there is not an official database containing lists and contacts of all Italian museums. For this reason, a database has been realized by the researchers through a web search. Only in the case of state museums sits the list of museums or sites belonging to the Ministry available on the MiBACT website with the contacts, where present, of the official channels. The database of contacts created counts 2,156 organizations between public and private management.

An e-mail has been sent to all museums with a letter of presentation about the research and the weblink to fill the survey addressed to the director, manager of the museum, or cultural services. The period of research covers May and June 2021.

The survey was structured in two parts
   a. The first one is related to the master data of the museums and understanding their organizational structure.
   b. The impact of the health emergency on the museum.
   c. The management of reopening.
   d. Innovation, communication, and digital.

The information has been analyzed according to the process of strategies adopted for the management of the crisis.

The Sample

The database includes 2,156 museums identified through web searching, but only 73% of the e-mail addresses were registered on the internet. Furthermore, 32% of e-mail addresses registered were incorrectly based on the number of automatic notifications of incorrect receipt. A 20% of the sample replied that they were not interested in taking part in the survey or that was closed before the pandemic period for other reasons (e.g., due to

renovation, lack of funds). Of the resulting sample, the final response rate was 14% because 7% did not reply to the survey.

The top three regions in terms of response rate that took part in the survey were also those most affected nationally by the Covid-19, such as Lombardy (29%), Emilia-Romagna (23%), and Veneto (22%). Other participating museums are located in Lazio (10%), Campania (4%), Basilicata (3%), Sicily (3%),Puglia (3%), Aosta Valley (2%), and Friuli (1%). Last in line is Molise, where no museum takes part.

The highest concentration of responses per province concerns Lazio with Rome (10%), Belluno (6%), and Vicenza (6%).

From the answers, it emerged that the thematic area of the museum collection was represented by pictorial art (14%), mixed art collections (14%), Thematic or specialized (11%), Ethnography and anthropology (10%), Archaeology (9%), House Museum (8%), History (7%), Natural History and sciences (6%).

It was asked whether the museum was part of a network or museum system. In 35% of the cases, the answer was "no", 10% answered "yes" without specifying, and 9% did not answer. The remainder of the respondents indicated that they belonged to a network or they are organized into a regional museum system (11%), local network or circuit (11%), or thematic museum network (6%). The remaining percentages, much lower, reveal membership in other kinds of networks.

Concerning the economic structure, 51% of museums are supported by public funds, while 26% and 19% are supported by private or public-private funds. Only in 3% of the cases, European funding is involved as well as private funding, and in 1% of the case,s public funding is also involved (see Graphic 1). 62% of these museums charge a ticket, while 38% do not.
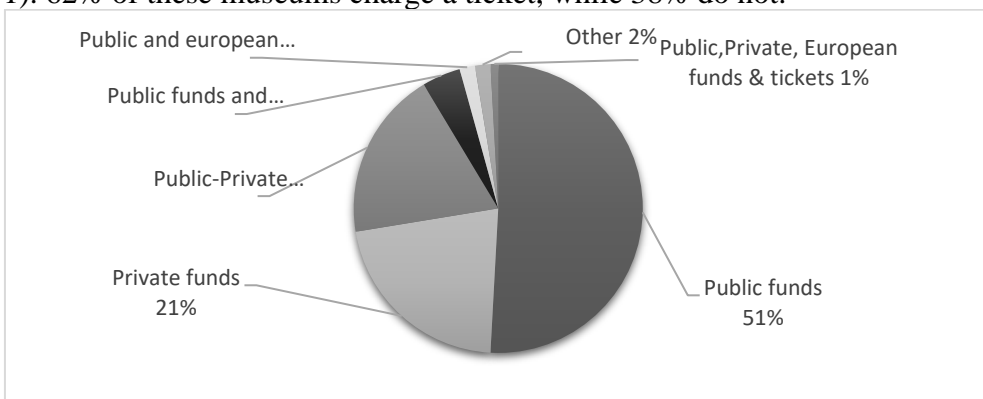
Graphic 1. Funding sources

Out of 73% of the respondents, 61% declare to have between 1 and 5 employees, followed by 14% between 12 and 20 employees. Only in 2% of the cases are there more than 100 employees.

The size of these museums is defined by considering the factor of takings, attendance, and the number of employees.

Results
The impact of the lockdown and managing the re-opening.

Museums close during the end of January and March 2020, partly in line with governmental provisions and according to regional decisions. The lockdown required the sudden implementation of smart working for employees. The 12%of sample had their staff placed in smart working mode, while 48% had total accessibility to office space, and the remaining 40% proposes both alternatives.

At the same time, the State made available wage supplementation funds that were only partially used by 40% of the sample and never applied to the entire workforce.

As far as losses are concerned, 24% of the museums did not report any loss, and 19% of the cases losses amounted to €0, as they do not have an entrance fee or additional services. Small museums report in 11% of cases a loss between €50,00-500,00; a further 11% between €800,00-2,000. Small-medium size museums suffered losses starting from 3,000€ per month, up to a small percentage of 3% that have estimated losses between 500,000-1,000,000€ for the period.

About the public, 80% register a loss of more than 6,300 per month, others declared a loss of up to 150,000 visitors.

The management of the re-opening was affected by two factors: firstly, the deadline for the end of the lockdown and resumption of activities as per government regulations, and secondly, the need to guarantee secure access to the museums.

The reopening scheduled in May does not involve all museums, and some of them define several funds to invest. 34% of museums allocate funds for the reopening with a range of €200,00-3,000. Another 17% declares the intention to invest €5,000-15,000, and € 20,000- 50,000 (13%). Finally, 4% of the large museums plan to invest up to €500,000.

Museums stated that the budget allocated for the reopening is for safety, adaptation to comply with health regulations, to diversify the cultural offer, and providing new tools for the use and communication of the heritage.

For the 52%, there is the collaboration with experts, professionals or safety consultants, museum curators to re-evaluate exhibition spaces, communication experts, university lecturers, cultural designers, and, educational operators.

The aim was also to establish new collaborations with universities (11%), other museums (10%), local authorities (10%), the cultural and creative sector (7%), and banks (2%).

The main actions implemented are: ensuring workplace safety for employees, ensuring safety for visitors, and managing visits. In detail, museums indicate (see Table 1):

a. Sanitisation, Personal Protective Equipment, Control of installations, signage.
b. Adaptation of the premises and re-evaluation of the visit routes, signage, and sanitizing materials.
c. Reservation system, reprogramming of supply and visits, visitor flow management system due to the introduction of visit limits.

There have been functional and mandatory choices to guarantee the cultural offer and fruition. The decision-making and strategic choices functional to the reopening are instrumental or rather obligatory and necessary. The museums have indicated instrumental actions to implement in the short term those useful for a safe reopening: adaptation, IPR, protocols, and guidelines (64% of the total). In addition, 4% respond to virtual and digital visits, while 8% re-evaluation of cultural programming.

On defining and reporting on medium-long term strategies, 62% of the sample did not express anything, while 13% stated that they are working on new activities for the fruition of the heritage through the digital.

A further 10% has planned marketing campaigns, to activate collaboration and intensify relations with international networks and the local area.

Short-term operative actions	Strategic actions in the medium and long term
• Security protocols (personal and public).	• Programming of cultural offers and new activities.
• Supplies of sanitation and hygiene materials, PPE.	• Programming of research activities.
• Scheduling visits and booking to manage visitor flows.	• Enhancement or introduction of digital.
• Staff reorganization.	• Marketing campaigns, social media development.
• Adaptation of the site (development of new visitor routes, signposting, information materials).	• New asset management methods
• Increased virtual visits.	

Tab.1: Actions and Activities of the museum on a different time horizon

Communication and Technological Innovation: the situation in Italian museums

The digital strategy, if adopted, requires adequate personnel and training to be pursued. In analyzing these aspects, one of the first questions was whether there was a communication and marketing office. In 70% of the cases, the answer is negative, and 43% of the respondents stated that another office not specialized works in communication and marketing. In 22%, it is a voluntary association or cooperative to which they outsource some services, while in 16% it is an employee in charge, and only in 7% of the cases there is a consultant/professional on contract. In 10%, it is either the museum manager or a museum curator. Some organizations are setting up an ad hoc office (2%).

On defining and carrying forward strategies over the medium to long term, 62% of the sample did not express an opinion, while the remaining 13% stated that they were reprogramming the characteristics of their cultural offerings to move them to a new level.

Only 53% of the surveyed museums claim to have invested in technology and communication strategies in the last three years. Looking at the amount of money, the 12% of them invested between €30,000 and €60,000, followed by a substantial 18% who invested between €1,000 and €5,000.

Large museums, both public and private have invested a large amount but represent a small percentage, as can be seen in Table 2.

Range of investments	% of museums
No response	44%
€ 0	7%
€ 1,000-5,000	18%
€ 6,000-10,000	6%
€ 12,000-20,000	5%
€ 30,000-60,000	12%
€ 80,000-130,000	5%
€ 200,000-300,000	2%
€ 3,500,000	1%

Tab.2: Investments in technology in the last three years

Data on the digital approach of Italian museums: the reaction phase

The digital strategy for museums encompasses several reference areas; in this analysis, we investigate three areas: institutional websites, social media (blog, community), and online connection (digitization, storytelling, social tagging).

3% of museums are not active on the web, while others declare to be present on at least one communication channel.

Among the social tools most used alone or in combination with others are websites (82%), Facebook (83%), Instagram (52%), YouTube (28%),

TripAdvisor (23%), Twitter (20%), Pinterest (5%) or others (blog, Flickr, Google business). 23% of the museum is active on two communication channels, while 22% has a profile on at least five platforms. This aspect shows the combined use of more than one tool and, above all, that museums have started to activate their online presence in recent years.

Presence of marketing&communication office	*Range of investments in technologies (last 3 years)*
• **86% no dedicated office.** • **57% of museums involve staff with other competencies.** • **20% of museums outsource marketing services.** • **7% of museums have a contract with expertise.**	• 44% no response. • 18% € 1,000-5,000. • 12% € 30,000 - 60,000. • 7% € 0.
Use of digital	*Use of one or more Social media or platforms*
• 82% website. • 25% virtual reality. • 10% phone Apps. • 7% augmented reality. • 6% digital storytelling. • 4% no use.	• 83% Facebook. • 52% Instagram. • 28% Youtube. • 23% TripAdvisor. • 20% Twitter.

Fig.2: Identifying the elements of the preparation stage

Communication and the use of digital: the reaction phase

Few museums increased their activity after the closure, the 11% have activated Instagram accounts, 5% Facebook and YouTube channels, and less activation of Twitter, Flickr, and other platforms (2%). 74% of the museums did not activate any new web channels or social networks.

Digital and communication	*Readjustment of contents*	*Reorganizing Human Resources*
• 74% No actions. • 11% Institutional web. • 10% Online collection • 5% Other (mobile, gamification, e-marketing).	• 36% Digital visits. • 22% Online exhibition presentation. • 20% Webinair.	• Staff reorganization (all museums). • New tasks (all museums).

Fig.3: The stage of the reaction

Museums were asked what actions they had implemented to keep in touch with the public. Seven categories of multimedia activities were selected and divided into subcategories. A distinction was made between actions implemented before and after the closing of the museum.

It emerges that digital storytelling(10%) and virtual tours (6%) were the most implemented actions. While video games and videos have been

introduced in a lower percentage by museums. However, at the time of the research museums already use digital tools, and those who were able to do so increased their activity.

	Multimedia content category	Multimedia sub-category	Pre-existing activities	Activities implemented after closing.
1.	Interactive Museography	Augmented reality	11%	2%
2.	Institutional website	Virtual tour	8%	6%
		Website	59%	1%
3.	Web video	Video	-	4%
4.	Online collection	Digital Storytelling	5%	10%
5.	Mobile	Application phone	15%	-
		QR code	2%	-
6.	Gaming	Videogame	1%	3%
7.	E-marketing	E-commerce	-	1%

Tab. 4: Museums' digital strategy before and during the Covid-19 crisis

Reassessing the relationship with the public and the museum management model: the recovery phase

From the questions posed to the managers or directors of museums, it emerges the need to invest in the strategy of digital technology to improve the access to the cultural heritage. This consideration was made in the light of the period that has kept the public physically away from the museums. Museums have re-evaluated the management of their relationship with their public, guaranteeing first the safety of the places and aiming at loyalty-building actions, resumption of direct contact through the integrated offer with guys, more inclusive participation, and new ways of enjoying the visit.

In the case of these museums, digital is confirmed as an element that makes it possible to rethink the museum model about the experience to be offered to the public and the ways to take part in the visit whether on-site or off-site.

The digital belongs to three moments of the visit experience before, during, and after. On the other hand, there is also an orientation towards a renewed cultural offer that begins to integrate the logic of sustainable tourism. Another more instrumental action for the public is the organization and management of services, including the introduction of ticketing where it is not foreseen, a reservation system, and visitor flow management.

The second aspect of museum management that emerges concerns the internal organization of work, which aims to enhance smart working as a way of working for employees.

Finally, at the basis of the re-evaluation of the museum management model, two factors emerged which imply a relationship with other stakeholders, both institutional and non-institutional. The importance of

developing an approach that aims at networking and directing funding, especially public funding. Further, there is the openness to collaboration with private bodies useful to rethink the museum model and redefine its activities.

Re-evaluation of the museum management model	Readjustment of contents	Developing new approaches for the valorization of cultural products
• 43% No response • 20% No re-evaluation. • 12% Increase in digital. • 12% Managing customer services. • 4% Smart working. • 2% Relations with organizations.	• 50% No response. • 15% Increase in Communication. • 15% Actions of audience development and engagement. • 10% Increase in digital content offer.	• 46% No response. • 29% Multimedia content, digital devices. • 15% increase in communication. • 6% Experiential approach. • 4% Integrate the network with the territory.

Fig.4: The stage of recovery

Discussion and Conclusion

The cultural sector is susceptible to the crises arising from other sectors such as the economy, the tourism sector, and security from unforeseen events. Currently, the crisis faced by the cultural and museum sector stems from the impact of a health shock. The Nemo report (2020:1) states 'we must learn from this crisis to effectively respond, mitigate, adapt and integrate'

Italian museums reacted to the closure, which led to a loss for all organizations involved, by implementing actions to maintain contact and relations with the public.

According to the management crisis models, the actions taken by the museums are related to two macro areas: functional actions to be implemented immediately to avoid a further worsening of the critical situation and actions to be evaluated and implemented in the medium-long term.

In the first case, since the objective of the museums is to maintain the relationship with the public and fulfill their educational, cultural, and heritage mission, they acted along two lines: one oriented towards safety and the other towards communication and use. Thus, museums have indicated as short-term objectives the implementation of guidelines to adapt the museum structure to the employees and the public. At the same time, the web has had the function of supporting museums in their role as communicators of cultural content through a wide application (e.g., institutional websites, virtual tours, digital projects, digitalization of materials).

Reacting instantly is not the only solution. To manage the crisis and ensure a recovery it is necessary to set long-term goals and introduce the aspect of planning which is too absent in the management of our museums.

The application of a crisis management model applied to museums in the context of the pandemic emergency revealed:

1) the Absence of a Preventive phase, a kind of gray area. Most of the museums investigated prevent the operational risk related to their activity: damage to heritage and works (in 90% of cases) but had never considered the risk of immediate closure.

2) The Preparation phase. Museums are found to be active and 'prepared' as far as communication is concerned (82% stated that they have a website) as it has been found to have strategies already in place. The prepared phase coincides with the degree of redness of museums for digital support and communication development to continue opening, guaranteeing enjoyment, and fulfilling their mission.

3) The Reaction phase detects if there was an adaptation to the context using the resources already present or if a reaction was matched by the implementation of new instruments. The results underline a weak implementation of new tools and more attention to the action on visits and transformation of content to disseminate them.

There is an increase in digital visits, webinars, and the online presentation of exhibitions already planned but not available due to closure.

4) The Recovery phase corresponds to the reassessment of strategies and actions for the future. Rethinking the cultural offer by providing exhibitions and events that are not live, increasing multimedia and digital content, opening to the outside world with new forms of collaboration, and re-evaluating the relationship with the public.

After the analysis, it can say that the museum does not use the social media to prepare and prevent the crisis by scanning the environment (Ramsey, 1994), searching for changes and new trends (Coombs, 1999), but to have proactive communication with the audience (Thomsen, 1995) during the lockdown period.

Recommendation for future research

For future research development it could be interesting to apply the model of strategic crisis management (Taneja et al., 2014) from the perspective of the museums' directors to understand actions, activities, and impact on the internal organizations (e.g., workers, volunteers) and external stakeholders. The application of the model of crisis management can help

these organizations to understand in a strategic view the main steps to be prepared for every threat or uncertainty context.

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Qualitative Approach for the Design Stage of a Performance Measurement System to Increase Gross Profit in Restaurants. Case Study: Hard Rock Cafe Mexico Restaurants

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Abstract

Performance measurement systems have proven to be a useful management tool to achieve the objectives and strategic goals established by the stakeholders of an organization; the evolution in these systems' theoretical foundations has allowed the designing models to focus on the size and specific business of each company. The life cycles of a performance measurement system and the Balanced Scorecard models, Performance Prism, and Kanji's Business Excellence Measurement System were considered to establish the methodology. This research had a qualitative approach, using the collective case study's approximation with eight restaurants of the Hard Rock Café brand franchise in Mexico. The result obtained was a performance measurement system integrated with 17 indicators (results and performance) to evaluate the existing variation between the goals established in the strategy against the results obtained in the gross profit through the execution of the activities carried out in the sales process.

Keywords: Restaurant management, restaurant performance measurement systems, restaurant indicators, performance measurement

1. Introduction

The sales strategy of a Theme Restaurant (TRs) is to attract a customer by providing service through an experience. The experience offered by them is unique and can not be replicated, and therefore, it carves a position in the minds of customers. Their strategy's basics consist of integrating a unique experience combining food and beverages that the diner will consume and creating a unique visual and sound experience event during the client stay that cannot be duplicated anywhere in the world (Heizer & Render, 2019).

Upon analyzing the financial achievements of these TRs, it has been observed that they have high revenue, and could exceed $17 million dollars/year (mdd); on average, they obtain an annual income of around $4 mdd. Besides, several TRs earn approximately 50% of their revenue by selling their store's souvenirs -an income not generated by other types of restaurants.

Maintaining the relationship between the strategy's objectives and the financial results in the TRs is a difficult one, mainly due to the high volumes of income, the number of units that a franchise can count on, the complexity of the activities, and the functions and initiatives that integrate the sales process. Additionally, it is necessary to consider the location between them since they are established exclusively in tourist destinations.

To have greater control over the revenue performance of a TR, the stakeholders of these businesses seek to understand how the activities, functions, initiatives, job roles, production skills, and the setting of strategic goals related to the sales process are executed. They understand that the data obtained permits describing, explaining, reporting, analyzing, and making informed decisions on the actions to be executed to improve the sales process and, at the same time, enhance the revenue.

1.1. Characteristics of theme restaurants sales process

The sales process in the TRs has particular characteristics in its execution, so it is impossible to measure it through the generic indicators that most restaurants use. Additionally, it must be considered that the sales in-store generate a substantial part of the income. In this sales process, it is necessary to make adjustments to each indicator or generate new ones to allow assertive measurement. Essentially, it is because an innovative organization requires data to increase sales, identify future opportunities, outperform forecasting, and, identify areas of improvement (Olszak et al., 2021).

Indicators to measure each of the sales process activities in a TR already exist; however, these indicators can produce an independent measurement of each activity, function, process, or initiative measured,

limiting their analysis to executed efforts without relating them. On the other side, when including the performance measurement (PM) to evaluate the TR strategic results, indicators must be focused on the same objectives and goals to make this happen. Therefore, PM's ideal tool is the performance measurement systems (PMSs).

The main benefit of using a PMS is to obtain the most accurate possible relationship between strategy, performance, indicators, and the measurement process. Implementing a PMS in a TR makes all sales process activities possible to be oriented towards the same goal. A PMS can have different scopes during the PM process; it is even recommended that organizations that implement it for the first time do so in parts; that is, one process at a time. It usually starts with the PM in the sales process. However, the activities that are part of this process are closely related to the cost of sales, which is one of the most meaningful expenditures in restaurants and directly affects gross profit. Therefore, a restaurant's gross profit should be considered an essential financial indicator for the restaurant industry since it reflects management's ability to increase sales and keep sales costs down (Davis et al., 2000).

1.2. Reasons for choosing the brand Hard Rock Café

The brand Hard Rock Cafe (HRC) was selected as a case study, since for more than four decades, it has been the most representative brand of the TRs worldwide, having both its restaurants and franchises. The franchise in Mexico has eight restaurants, and acquired more franchised restaurants in the early twenty-first century, realizing revenues exceeding $ 97.5 million dollars, with a gross profit of over $ 75.9 million dollars in four years.

This franchise used different indicators as a PM tool, which misrepresented its strategic plan's execution measurement. These indicators were indistinctly called Key Performance Indicators (KPIs), when they, in fact, were additionally using Performance Indicators (PIs), Results Indicators (RIs), and Key Results Indicators (KRIs). The KPIs are the core and indicate what needs to be done to improve performance radically; these indicators focus on the aspects of performance most critical to the organization; the PIs, indicate what needs to be done and help align activities with the organization's strategy, but are not business-critical, are non-financial, and complement the KPIs; the RIs, indicate what has been done; they are a sum of activities, this group has only financial measures; they show their increases or decreases; and the KRIs, present that has been done concerning the critical success factors with financial measures, these indicators result from many critical actions in the organization and indicate whether it is leading in the right direction but cannot say what should be done. Additionally, their cover periods are long, from a month to a quarter, semester, or year (Parmenter, 2019).

A PMS must comply with different stages in the life cycle; these five stages are: (a) evaluation or audit, (b) design, (c) implementation, (d) operation or use, and (e) actualization or update (Bourne et al., 2000; Nudurupati et al., 2011; Taticchi et al., 2012). The scope of the research is focused on the stage of design. Therefore, this research aimed to design a PMS that allowed measuring the performance of the process in the HRC brand TRs but focused on the benefit of gross profit without changing the process. This focus on the gross profit is the second innovative contribution. The PMS design and the indicators' design are the third and fourth innovative contributions.

This article presents specifically the qualitative method's results of the design phase of a PMS, which consisted of six steps. The product obtained to evaluate the variation of the actual results from those established in the strategy as a goal in the gross profit in the TRs, was named PMS-BEREST.

2.   Literature Review
2.1.   The design stage of the life cycle of the performance measurement systems

A survey of the literature indicates that there is concern about the best way to measure and report the different activities that can improve a company's performance in business, which generates great interest in organizations to develop and deploy an effective PMS (Choong, 2013). Each PMS consists of an individual number of performance measures (Milanović, 2011), which are the vital signs that quantify how well an organization is achieving its specific goals (Seokjin & Behnam, 2008). Therefore, PM is critical for the growth and development of the companies; that is why businesses should implement a suitable PMS to assess the performance of the business (Papulová et al., 2021).

The strategic plan is designed to meet the needs of the key stakeholders (owners, clients, suppliers, personnel, and the community). Therefore, the organization's strategic goals and objectives align with those needs. Consequently, metrics building and construction are necessary to verify the performance achieved, which is one of the activities related to the design of the PMS (Elg & Kollberg, 2009).

The PMS must reflect its company's business, so it must have a specific architecture with relevant measures. Several theoretical frameworks and models with a wide range of solutions for this design are proposed in the literature, but among the most critical elements to be fulfilled are: (a) relate the strategy to the operations, (b) consider the different perspectives of the stakeholders, (c) use financial and non-financial indicators, (d) integrate external and internal parameters (Taticchi et al., 2012), (e) establish the scope of the measurement, (f) define the size of the measurement and (g) establish the range of the measures (Brem et al., 2008).

Few PMSs do not need adjustments in their operation or are free of design flaws (Nomm & Randma-Liiv, 2012). It is mainly because many organizations select their measures from the more accessible information to obtain rather than the most helpful information (Sližytė & Bakanauskienė, 2007). Not to mention that there are also substantial difficulties for an organization to decide what to measure (Sousa & Aspinwall, 2010). On the other hand, if harmony is achieved between the measures and the established objectives in the design stage, a successful PMS will be obtained (Stančić et al., 2012).

The selection of a PM tool should be an individual process of each organization, which implies that it should be designed according to its peculiarities (Sližytė & Bakanauskienė, 2007). In a dynamic environment where rapid changes occur, it is expected that the measures of an organization will be different from those of others (Sousa & Aspinwall, 2010). Thus, the design of PMSs based exclusively on one sector has a significant acceptance gaining (Yildiz et al., 2011).

Indicators are an essential part of a PMS; as a result, the success of PMS operation depends on the design (Strecker et al., 2012). Their design should represent the organizational goal, resources, processes, and organizational roles (Bourne et al., 2000). For this reason, the result of its design must contribute to directly measuring a particular aspect of the organization's performance concerning a specific reference object (Strecker et al., 2012).

A PMS design also includes visual elements and analyzed constructs (performance measures or indicators) that permit performance measuring (Elg & Kollberg, 2009) and its variations dynamically and continuously, ensuring a reaction against internal and external changes. It will enable the company to be systematically evaluated and favor continuous improvement (Balachandran et al., 2007).

The primary purpose of dashboards and scorecards is to show several indicators in a synthesized way (Franceschini et al., 2007). This representation allows stakeholders to focus on what is most important since they represent the most relevant indicators of the organization's performance in a graphic way (Parmenter, 2019), and valuable information to make supported decisions (Kerzner, 2017). According to Parmenter (2019), for the dashboard or scorecard to achieve its objective, it must be considered that the type of graphic chosen conveys the appropriate message that the indicator is trying to inform.

Several theoretical frameworks and models for designing a PMS have been published, contributing to the existing scientific knowledge. However, non of the universal PMS can solve PM problems in an organization, as they also have limitations (Berumen M. et al., 2019).

The following models were used as the basis of the methodology of the research presented in this article to design the PMS-BEREST: Balanced Scorecard (BSC), Performance Prism (PRISM), and Kanji's Business Excellence Measurement System (KBEMS).

The BSC, a model designed by Kaplan and Norton (1992) was the most relevant PMS of the 90s (Mirela-Oana, 2012), considered the most influential and dominant tool in the field of PM of that period (Marr & Schiuma, 2003). This theoretical framework has been the most cited study and has received the most attention in this field since its publication, being successfully applied in various industries (Taticchi et al., 2012).

The model increased its relevance under the idea that no single indicator can capture the complexity of an organization's performance (Watts & McNair-Connolly, 2012). It was designed to be a holistic model used at different levels and across the entire organization, team, or working group (Vouldis & Kokkinaki, 2012).

The BSC looks at the organization from four perspectives: (a) financial, (b) customer, (c) internal processes, and (d) learning and innovation (Watts & McNair-Connolly, 2012). Initially, the authors identified the need to guarantee performance in their model's four perspectives, giving equal weight to all of them and relating them explicitly to the strategy's vision (Neely, 2004; Watts & McNair-Connolly, 2012); this demonstrated balance. It means having equality between short and long-term goals, between data inputs and outputs, between internal and external performance factors, and between the use of financial and non-financial indicators. Thus, they achieved a flexible system within the established strategy (Striteska & Spickova, 2012).

Another significant contribution of the BSC was introducing strategic maps to establish cause-effect relationships between strategic objectives (Quezada et al., 2007, Bo et al., 2017). To develop a strategic map for the BSC, first, metrics for each objective are selected to establish the causal relationships between objectives and measures (Kaplan, 2010).

The PRISM model was proposed by Neely and Adams (2001), who would be joined a year later by Mike Kennerley (Neeley et al., 2002a). The authors unified the most relevant models and theoretical frameworks exposed to date to develop the model, taking their strengths and overcoming their weaknesses (Liu et al., 2018).

The main difference between the other models and the PRISM is that it begins by considering the satisfaction of the stakeholders' interests (Sližytė & Bakanauskienė, 2007) regarding the shareholders' needs (Neely, 2004). For this reason, the strategy implementation exclusively relates to the moment in which the needs of consumers are sought (Sližytė & Bakanauskienė, 2007). From this, PM starts throughout the organization with a model that considers

five interrelated perspectives (Neely et al., 2002a): (a) stakeholders, (b) strategies, (c) processes, (d) capacities, and (e) stakeholder contribution.

The PRISM model stands out because it incorporates a theoretical framework to design performance measurement and management systems structures (Taticchi et al., 2008). The model's architecture is presented graphically by a three-dimensional prism, where each face corresponds to a perspective (Neely et al., 2002a). Different additional levels of detail are obtained for each face and the relationships between them; the strategy is deployed from top to bottom, considering the stakeholders previously. One interesting point about PRISM is that it is not a recipe for designing a PMS. Its development is based on forming groups of measures using strategic maps to identify the objectives and performance drivers of the prism's five perspectives (Vouldis & Kokkinaki, 2012).

At last, KBEMS, the model designed by Kanji (2002), explains PM's importance in organizations and reveals what he considers to be the drawbacks of the PMSs used up to that time, which is why he proposed the KBEMS.

KBEMS is designed to demonstrate whether the organization is measuring performance from an internal perspective and the stakeholders' point of view (Kanji, 2002), focusing on measuring all critical success factors' excellence. As a result, the organizational excellence performance index is obtained (Striteska & Spickova, 2012; Metaxas & Koulouriotis, 2019).

This system is made up of two parts: A and B, which must always be applied simultaneously to easily visualize the organization's global performance (Striteska & Spickova, 2012). According to Kanji (2002), part A is made up of elements that, to be successful, require the commitment of the organization's leaders, who must be the driving force behind quality improvement and business excellence. Part B is also integrated by critical success factors, where organizational values become central to achieving excellent performance. Process excellence, organizational learning, and stakeholder delight must be accomplished to reach the desired performance.

Each element in parts A and B represents a latent variable, which is measured individually by the group of variables they represent (Sousa & Aspinwall, 2010). A maximum value of 10 is assigned to each critical success factor in parts A and B. A sum of each part should be done and after an average of both parts. This final average of the PM is multiplied by 10 to generate the score that will place the organization in three performance certification schemes: (a) premier certification, between 500 and 651 points, (b) preferment certification, between 651 and 800 points, (c) paramount certification, which is the highest level that can be achieved; its minimum score is 801 points (Kanji, 2002).

2.2.   Performance measurement in the sales process of restaurants

Performance measurement has the objective of quantifying the performance achieved; it shows whether it is above or below the strategic goal established by the organization, describes the deviations, allows assertive correction, and maintains continuous improvement (Striteska & Spickova, 2012). For the performance measurement to achieve its purpose requires the use of indicators (key performance indicators, performance indicators, key result indicators, and result indicators), group of indicators (GIs), and performance measurement systems (PMSs). However, the more indicators are integrated, the broader the scope of the performance measurement will be, which means the results can be assured using a PMS by the organization (Mirela-Oana, 2012).

In the restaurant industry, the performance measurement of the sales process predominates through the use of indicators individually; likewise, most articles and books' explanations in the literature and theory on restaurant management, not by PMS or GIs; likewise, most articles and books explanations in the literature and theory on restaurant management, not by PMS or groups of indicators. Among the most commonly used indicators to measure the sales process are: (a) number of diners, customers, or guests (Gallego, 2008), (b) number of covers, (c) average expenditure per cover (Dittmer & Keefe III, 2009), (d) number of transactions, (e) average check or amount per dinner, (f) sales volume, (g) net income, (h) installed capacity (Cousins et al., 2019), (i) average spend per diner or average sale per customer, (j) sales mix, (k) seat turnover per shift, (l) sale per available seat in the period (Davis et al., 2012), (m) sale per hour of operation, (n) sale per employee, (o) number of diners per waiter, (p) sale per table (KPI Institute, 2012c), (q) ratio of food or beverage to total sales (Schmidgail, Hayes, & Ninemeir, 2002), and (r) discount level (Jin et al., 2010).

Some organizations do not manage to implement a PMS, but they can align different indicators to form GIs with which they seek to represent and regulate the specific functions of a process (Franceschini et al., 2007). In the case of the restaurant industry, the Revenue Per Available Seat Hour (RevPASH) can be considered a GIs, since it is integrated by four indicators to measure the restaurant's revenue (KPI Institute, 2012c), the indicators used are: (a) available seats per hour, (b) volume of available seats per hour, (c) number of hours of operation, and (d) average spend per diner (Kimes et al., 2012).

Following one of the trends of the last decade in the design of PMSs, there is a need to use specific indicators related to the performance of each specific industry sector to meet their information needs, so the KPI Institute designed the Restaurant Performance Management System Toolkit as a PMS for restaurants (KPI Institute, 2021). This system was formed at its base to run

the performance measurement by the indicators proposed by this institute in its publication "Top 25 restaurant KPI´s of 2011-2012" (KPI Institute, 2012c). This PMS was designed based on the four perspectives proposed by the BSC model. The system explains the processes and connections between them; and, at the same time, it also presents the graphic visualization of the results obtained by the indicators in a scorecard.

3.   Case study: The Hard Rock Cafe Mexico restaurant franchise

        In Mexico, the brands of the most representative TRs in the United States were legally owned by a single company for 24 years, Grupo ECE S.A. de C.V. (being the exclusive franchisee in Mexico of HRC, PH, RFC, and Official All-Star Café) (Bolsa Mexicana de Valores [BMV], 2007). The HRC brand opened restaurants in different cities in Mexico: Acapulco was the first (1989), followed by Puerto Vallarta (1990), Tijuana (1992), Cancun (1992), Mexico City (1993), Cozumel (1994), Cabo San Lucas (1995) and Guadalajara (1998).

        In the period from 20XA to 20XD -the following nomenclature was assigned to the years studied: 20XA, 20XB, 20XC, and 20XD to maintain data confidentiality without sacrificing scientific accuracy (American Psychological Association, 2019); 20XA is the first year, and 20XD is the last-, Grupo ECE obtained $97.5 million dollars in revenue generated by its eight restaurants. Just two units generated over 40.00% of this revenue: HRC Cancun and HRC Cabo San Lucas. Concerning the gross profit reported in the same period (20XA-20XD), the most significant contribution was obtained in HRC Cancun, the only unit that exceeded $19.1 million dollars, followed by HRC Cabo San Lucas, with $12.9 million dollars, refer to Table 1.

Table 1. *Hard Rock Cafe Mexico theme restaurants revenues and gross profit in four years*

Unit			20XD	20XC	20XB	20XA	Global 20XD-20XA	%
HRC Acapulco	HRC ACA	Revenues	$3,850	$3,425	$2,748	$2,689	$12,712	13.03%
		Gross profit	*$3,034*	*$2,675*	*$2,052*	*$2,001*	*$9,763*	*12.85%*
HRC Cabo San Lucas	HRC CAB	Revenues	$5,608	$4,847	$3,537	$2,613	$16,605	17.02%
		Gross profit	*$4,475*	*$3,820*	*$2,677*	*$1,975*	*$12,947*	*17.05%*
HRC Cancun	HRC CAN	Revenues	$6,572	$5,529	$6,210	$6,286	$24,598	25.22%
		Gross profit	*$5,242*	*$4,350*	*$4,777*	*$4,787*	*$19,156*	*25.22%*
HRC Cozumel	HRC COZ	Revenues	$2,794	$2,739	$2,207	$2,407	$10,147	10.40%
		Gross profit	*$2,201*	*$2,139*	*$1,679*	*$1,841*	*$7,860*	*10.35%*
HRC Guadalajara	HRC GDL	Revenues	$1,392	$1,453	$1,238	$1,280	$5,363	5.50%
		Gross profit	*$1,118*	*$1,158*	*$950*	*$985*	*$4,212*	*5.55%*
HRC Distrito Federal	HRC CDMX	Revenues	$3,876	$3,619	$2,985	$2,887	$13,367	13.70%
		Gross profit	*$3,127*	*$2,905*	*$2,288*	*$2,218*	*$10,538*	*13.87%*
HRC Tijuana	HRC TIJ	Revenues	$803	$957	$932	$984	$3,675	3.77%
		Gross profit	*$646*	*$767*	*$733*	*$767*	*$2,913*	*3.83%*
HRC Vallarta	HRC VALL	Revenues	$3,207	$3,315	$2,433	$2,122	$11,077	11.36%
		Gross profit	*$2,508*	*$2,593*	*$1,852*	*$1,610*	*$8,563*	*11.27%*
Global HRC Mexico	**HRC MEX**	**Revenues**	**$28,102**	**$25,884**	**$22,289**	**$21,268**	**$97,543**	**100.00%**
		Gross profit	*$22,351*	*$20,407*	*$17,008*	*$16,185*	*$75,951*	*100%*

Note: amounts presented in millions of dollars/1000. The results of each restaurant's revenues and gross profit were calculated with the data of the next sources: Micros software system financial report information (point-of-sale software), the annual budgets, and the evaluating results of the *Grupo ECE* budget (elaborated in Excel), and the Covers report (summary report presented in Excel).

Grupo ECE had to give up the rights to use the HRC brand in 2013, after losing a series of lawsuits against HRI. In 2015, a new company acquired the HRC franchise's rights and opened two new units in Cozumel and Cancun; and acquired HRC Playa del Carmen in 2019.

4.   Methodology

This research was designed with a qualitative approach so that it was possible to obtain greater depth in the data. It also allows an interpretation and contextualization of the environment enriched with details of the lived experiences of organizations or units of analysis. The research is based on logic and inductive process (through exploration and description that allow theoretical perspectives) until an explanatory scope is defined, which would support the understanding of the meaning that organizations are giving to the phenomenon of interest (Crowe et al., 2011; Hernández et al., 2014).

This qualitative research's interpretative framework (or typology) was the collective case study that involved multiple cases analyzed simultaneously to generate a greater appreciation of the phenomenon: the PM (Crowe et al., 2011). Essentially, it is an instrumental study, extended to several cases that manifest some common characteristics, since a better understanding, and

perhaps formulation, of the theory is expected (Denzin & Lincoln, 2013). That could be more extensive based on the form the selected units fit into broad constructs; actually, this theory supports them (Yin, 2009).

The sample is purpose-oriented, intending to formulate analytical generalizations derived from the study of data obtained from key informants and the documents, i.e., a case-by-case information transfer (Collins, 2010, cited by Hernández et al., 2014). For this reason, TRs of the HRC Mexico brand was chosen, a franchise that was considered an outstanding object for understanding the construct under study. The different analysis units were the eight restaurants in different parts of the Mexican Country: Acapulco, Puerto Vallarta, Tijuana, Cancun, Mexico City, Cozumel, Cabo San Lucas, and Guadalajara.

A process that was undoubtedly progressive based on the descriptive information that contributed to the inductive analysis would allow its association with the theoretical reference models (Hernández et al., 2014), BSC, PRISM, KBEMS.

To design the PMS-BEREST, a method composed of six steps was determined: (*S.1.*) Modeling the sales process in the TRs, (*S.2.*) Preparation of the strategic map of the sales process in the TRs, (*S.3.*) The base architecture was designed with the indicators, (*S.4.*) Design of the indicators, (*S.5.*) Definition of reference points, and (*S.6.*) Design of indicators life sheet.

5.   Results

Result S.1. HRC TRs used six operating manuals to train staff working in their branded restaurants: busser (Hard Rock International, 2008a), kitchen (Hard Rock International, 2008b), host (Hard Rock International, 2008c), bartender (Hard Rock International, 2008d), retail (Hard Rock International, 2008e), and server (Hard Rock International, 2008f). The last four manuals contain staff activities directly related to the sales process, which affect financial results. The sales process is achieved by executing several related functions from various positions in different restaurant areas. After identifying the functions, they are assigned a code, refer to Figure 1.
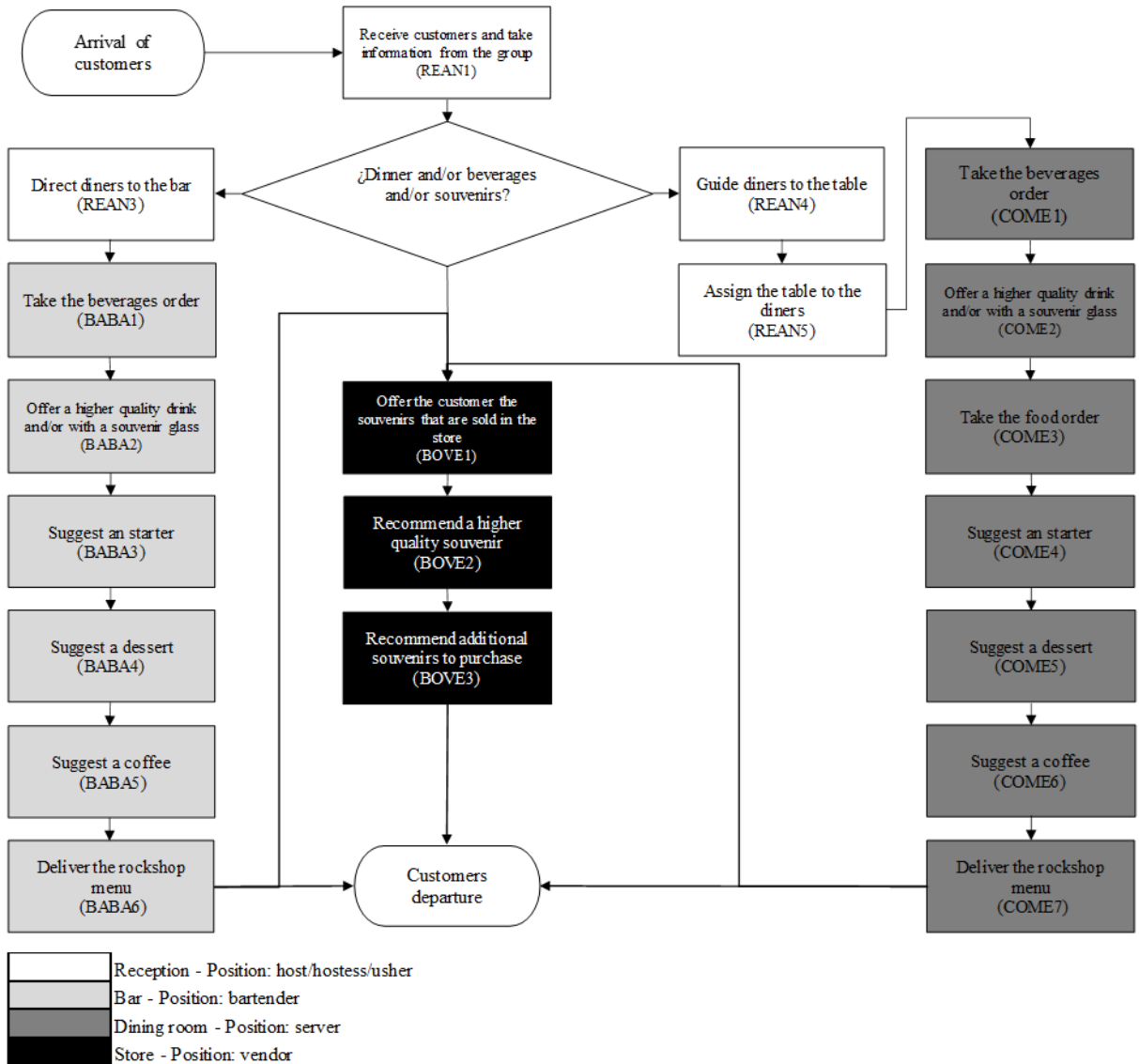
Figure 1. Coded flow chart of sales process activities in restaurants Hard Rock Cafe. The shades of white, gray, and black represent the areas where the various activities of the sales process are executed that have an effect on the financial results.

Result S.2. According to their performance perspective (finance, customers, and processes), specific strategic objectives were displayed on the strategic map. These objectives were assigned a code, refer to Figure 2.
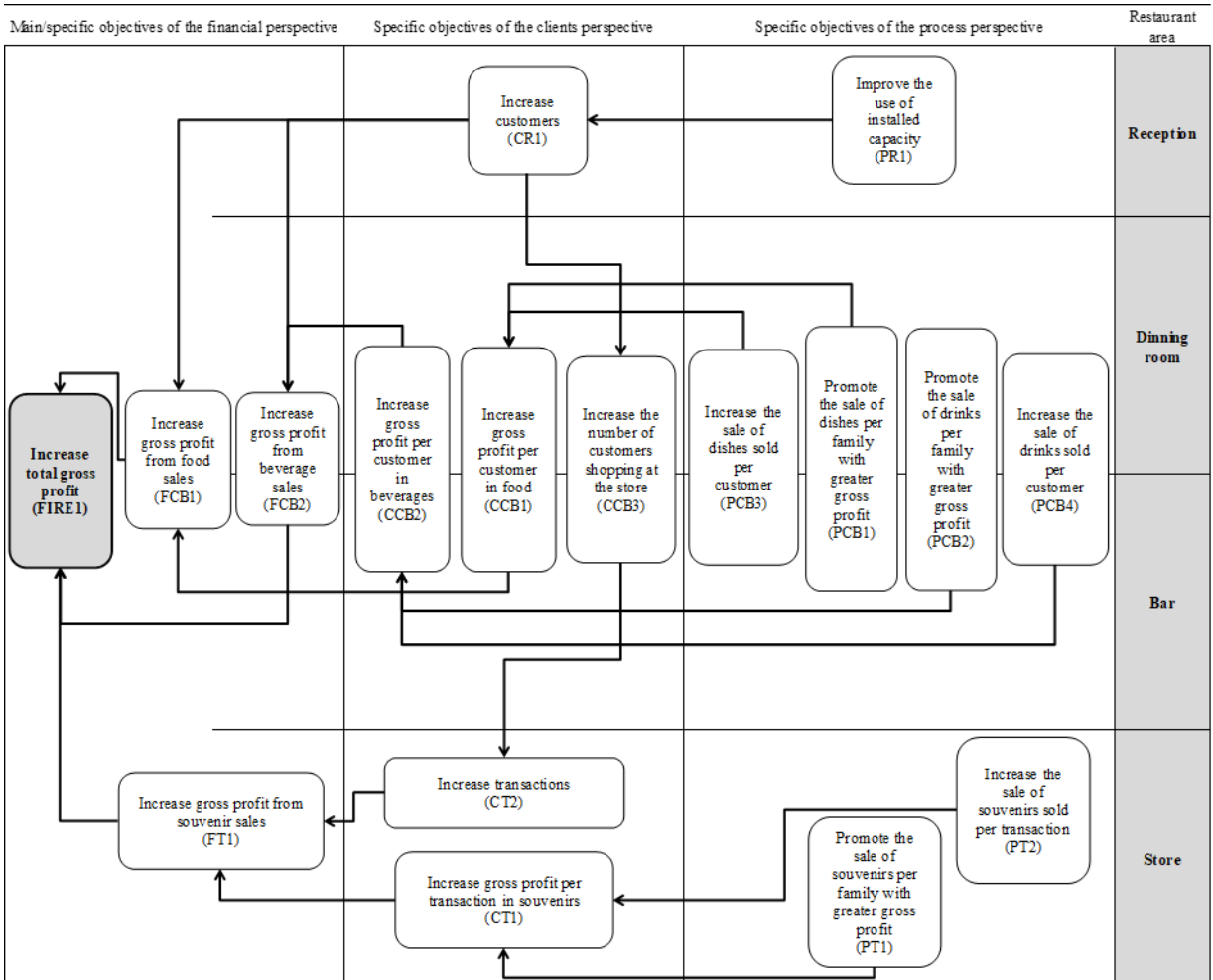
Figure 2. Main objective related to specific objectives by performance perspective and operating area.

As a next step, the specific objectives were aligned with the sales process activities; an indicator and its corresponding type were assigned to each relationship, refer to Figure 3.
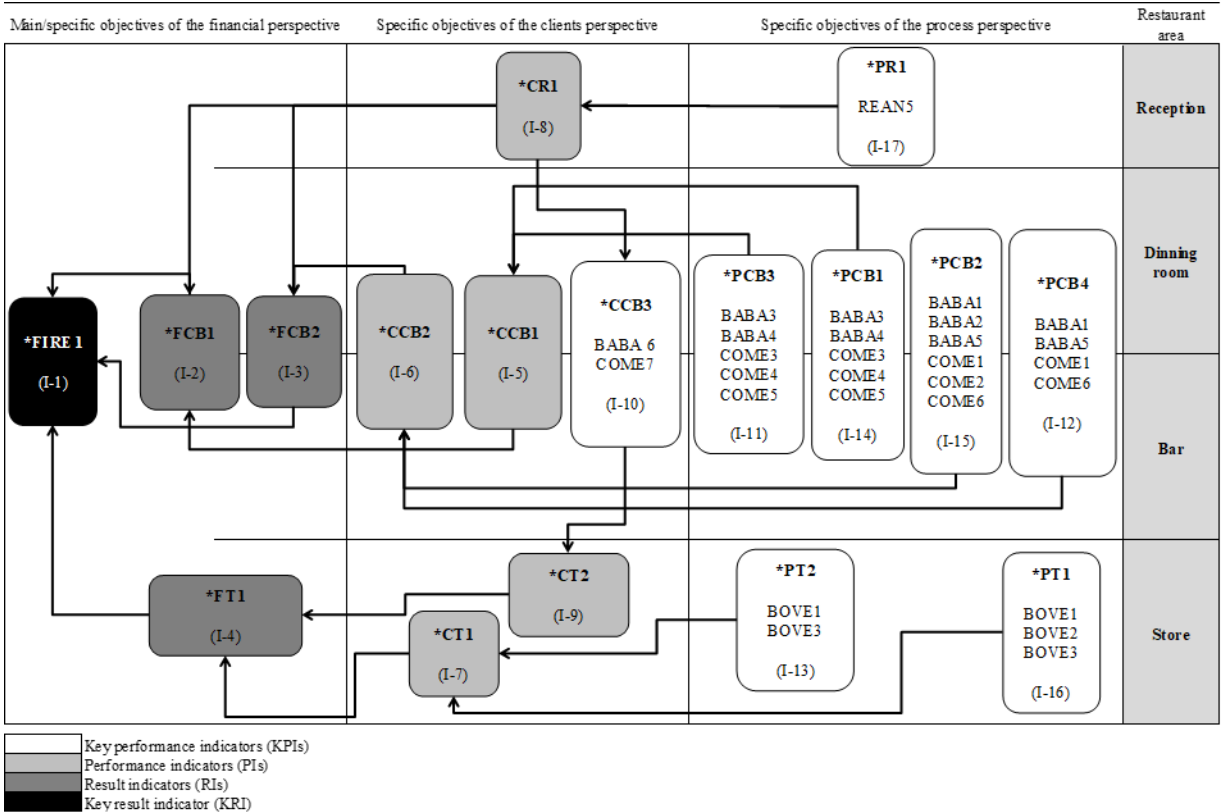
Figure 3. Codification of the specific and main objectives, activities of the sales process, and indicators that will measure their performance. The codes in bold with * refer to the specific objectives and the main objective. The codes without * and parentheses refer to the activities carried out by the staff during the sales process (some activities can contribute to meeting two objectives). The acronyms of the indicators proposed to integrate the PMS are: (I-1) % var TGP, Total Gross Profit Variation; (I-2) % var FGP, Variation of Gross Profit in Food; (I-3) % var BGP, Variation of Gross Profit in Beverages; (I-4) % var SGP, Variation of Gross Profit in Souvenirs; (I-5) $ diff PCF, Gross Profit Difference per Cover in Food; (I-6) $ diff PCB, Difference of Gross Profit per Cover in Beverages; (I-7) $ diff PT, Difference of Gross Profit per Transaction; (I-8) # diff C, Covers Difference; (I-9) # diff T, Difference of Transactions; (I-10) # diff RTC, Difference in the Transactions/Covers Ratio; (I-11) # diff FPC, Difference in Food Perfect Cover; (I-12) # diff BPC, Difference in Beverages Perfect Cover; (I-13) # diff ST, Difference of Souvenir per Transacion; (I-14) % var MPF, Variation of Maximization of Profit in Food; (I-15) % var MPB, Variation of Maximization of Profit in Beverages; (I-16) % var MPS, Variation of Maximization of Profit in Souvenirs; (I-17) % diff UC, Difference in Used Capacity.

Result S.3. Using the strategic map allowed the design of the PMS-BEREST architecture to be obtained; it also made it possible to distinguish which indicators make it up, refer to Figure 4.
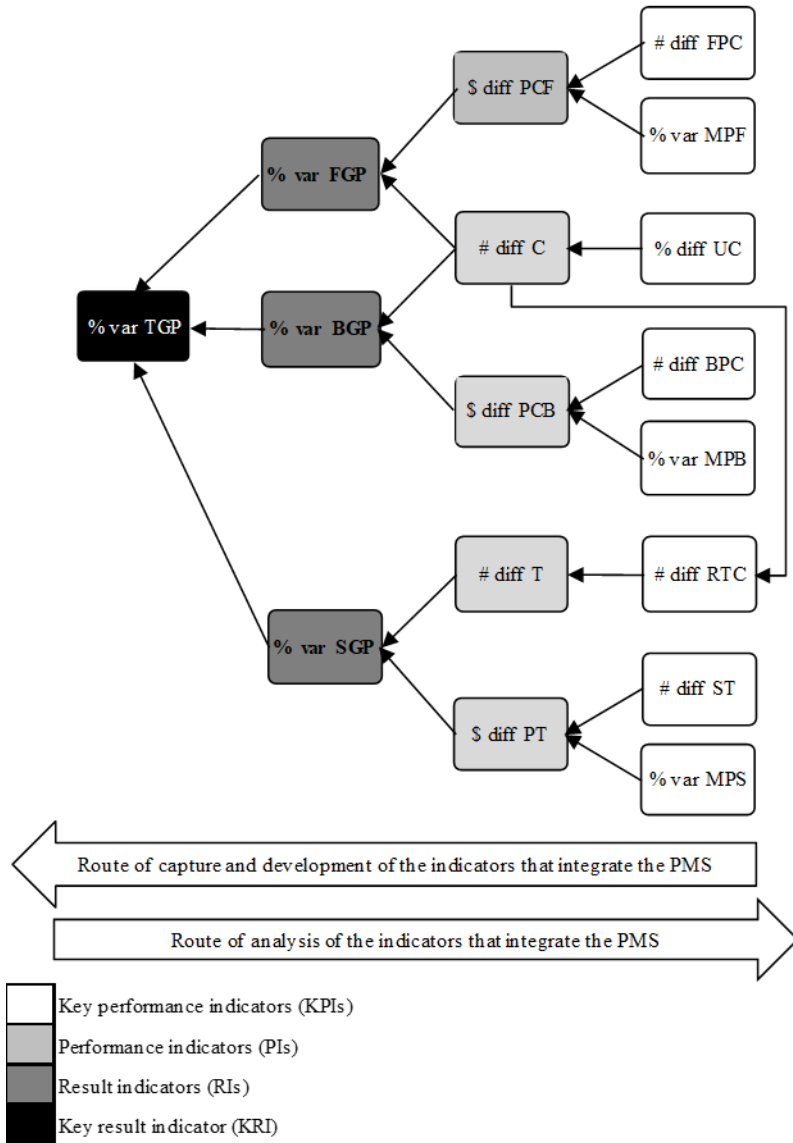
Figure 4. Structure of the PMS-BEREST. % var TGP, Total Gross Profit Variation; % var FGP, Variation of Gross Profit in Food; % var BGP, Variation of Gross Profit in Beverages; % var SGP, Variation of Gross Profit in Souvenirs; $ diff PCF, Gross Profit Difference per Cover in Food; # diff C, Covers Difference; $ diff PCB, Difference of Gross Profit per Cover in Beverages; # diff T, Difference of Transactions; $ diff PT, Difference of Gross Profit per Transaction; # diff FPC, Difference in Food Perfect Cover; % var MPF, Variation of Maximization of Profit in Food; % diff UC, Difference in Used Capacity; # diff BPC, Difference in Beverages Perfect Cover; % var MPB, Variation of Maximization of Profit in Beverages; # diff RTC, Difference in the Transactions/Covers Ratio; # diff ST, Difference of Souvenir per Transaction; % var MPS, Variation of Maximization of Profit in Souvenirs.

Result S.4. Design of the indicators. The results obtained from the indicators' design with the components that would apply in the same way during the PM equally for each indicator were integrated into the generic information record sheet, refer to Table 2.

Table 2. *Generic information for the indicator record sheet*

Indicator general information			
Industry	Restaurant		
Subcategory	Casual restaurants / Theme restaurants		
Type of data	Quantitative		
Period of validity	Anual		
Periodicity	Register: Diary		
	Report: Diary		
Responsible for measurement	Strategic: Manager of Corporate Financial Analysis		
	Operative: Assistant General Manager of each HRC restaurant		
Performance measurement at the corporate / divisional strategic level			
Owner of the corporate indicator	Grupo ECE Chief Executive Officer	Inside stakeholders	Grupo ECE: (a) Chief Financial Officer, (b) Chief Operational Officer, and (c) Chief Strategy Officer
Owner of the divisional indicator	Grupo ECE Chief Operating Officer	Outside stakeholders	HRI: (a) Vicepresident of Operations, and (b) Director of Latin America Operations
Performance measurement at a functional / operational strategic level			
Owner of the functional indicator	Operations Manager of the HRC Mexico brand	Inside stakeholders	Restaurants HRC Mexico: (a) Area Operational Managers, y (b) Operating staff
Owner of the operating indicator	General Manager of each restaurant in the HRC Mexico franchise	Outside stakeholders	HRI: Director of Latin America Operations
General variables in the goal of the indicators			
% LR = % of low outstanding range limit	% LR = The policy of the strategy in which it is declared in what percentage of 100% of the budget result from the maximum range of the low outstanding range will be established		
% MR = % of moderate outstanding range limit	% MR = The policy of the strategy in which it is declared in what percentage of 100% of the budget result from the maximum range of the moderate outstanding range will be established		

The results corresponding to each indicator were integrated into their specific record sheet. The % var TGP (Total Gross Profit Variation) indicator measures the result of the total gross profit account obtained by the execution of the activities of the sales process in the reception, dining room, bar, and boutique areas of the restaurant; it calculates the variation that exists between the actual total gross profit against the total budgeted gross profit, and against the maximum possible total gross profit, refers Table 3.

Table 3. *Specific information for the indicator record sheet % var TGP*

Indicator control information				
Indicator name:	Total Gross Profit Variation	Relationship with other indicators in other perspectives:	Financial:	% var FGP, % var BGP and % var SGP
Abbreviation:	% var TGP		Clients:	-
Functional area:	Restaurant		Processes:	-
Indicator type:	KRI	Graphics Type:	Stacked bars	
Performance perspective:	Financial		Arrow icons with chart	
Measurement focus:	Money	Result in:	Percentage	

Calculation

Result formula

$$\% \ var \ TGP = (TGP \ actual \ / \ TGP \ budget) - 1$$

Output formula

$$TGP \ actual = \sum FGP \ actual + \sum BGP \ actual + \sum SGP \ actual$$

$$TGP \ budget = \sum FGP \ budget + \sum BGP \ budget + \sum SGP \ budget$$

Variables	Data source
Σ FGP actual, Σ BGP actual and Σ SGP actual	Profit and Loss Statement of each HRC restaurant
Σ FGP budget, Σ BGP budget and Σ SGP budget	Annual budget of each HRC restaurant

Note: TGP, Total Gross Profit; KRI, Key Result Indicator; FGP, Food Gross Profit; BGP, Beverages Gross Profit; SGP, Souvenirs Gross Profit; var, variation.

The % var FGP (Variation of Gross Profit in Food) indicator measures the result of the food gross profit account obtained by the execution of the sales process activities in the dining room and bar areas of the restaurant; it calculates the variation between the actual gross profit in food versus the budgeted gross profit in food, and against the maximum possible gross profit in food, refer Table 4.

Table 4. *Specific information for the indicator record sheet % var FGP*

Indicator control information				
Indicator name:	Variation of Gross Profit in Food	Relationship with other indicators in other perspectives:	Financial:	% var TGP
Abbreviation:	% var FGP		Clients:	# diff C and $ diff PCF
Functional area:	Restaurant		Processes:	-
Indicator type:	RI	Graphics Type:	Stacked bars	
Performance perspective:	Financial		Arrow icons with chart	
Measurement focus:	Money	Result in:	Percentage	

Calculation

Result formula

$$\% \ var \ FGP = (FGP \ actual \ / \ FGP \ budget) - 1$$

Output formula

$$FGP \ actual = \sum (PCF \ actual * C \ actual)$$

$$FGP \ budget = \sum (PCF \ budget * C \ budget)$$

Variables	Data source
FGP actual	Profit and Loss Statement of each HRC restaurant
PCF actual and C actual	System financial report of each HRC restaurant
FGP budget, PCF budget and C budget	Annual budget of each HRC restaurant

Note: FGP, Food Gross Profit; RI, Result Indicator; TGP, Total Gross Profit; C, Covers; PCF, Gross Profit per Cover in Food; var, variation; diff, difference.

The % var BGP (Variation of Gross Profit in Beverages) indicator measures the result of the beverages gross profit account obtained by the

execution of the sales process activities in the dining room and bar areas of the restaurant; it calculates the variation between the actual gross profit in beverages versus the budgeted gross profit in beverages, and against the maximum possible gross profit in beverages, refer Table 5.

Table 5. *Specific information for the indicator record sheet % var BGP*

Indicator control information				
Indicator name:	Variation of Gross Profit in Beverages	Relationship with other indicators in other perspectives:	Financial:	% var TGP
Abbreviation:	% var BGP		Clients:	# diff C and $ diff PCB
Functional area:	Restaurant		Processes:	-
Indicator type:	RI	Graphics Type:	Stacked bars	
Performance perspective:	Financial		Arrow icons with chart	
Measurement focus:	Money	Result in:	Percentage	

Calculation
Result formula
% var BGP = (BGP actual / BGP budget) - 1
Output formula
BGP actual = ∑ (PCB actual * C actual)
BGP budget = ∑ (PCB budget * C budget)

Variables	Data source
BGP actual	Profit and Loss Statement of each HRC restaurant
PCB actual and C actual	System financial report of each HRC restaurant
BGP budget, PCB budget and C budget	Annual budget of each HRC restaurant

Note: BGP, Beverages Gross Profit; RI, Result Indicator; TGP, Total Gross Profit; C, Covers; PCB, Gross Profit per Cover in Beverages; var, variation; diff, difference.

The % var SGP (Variation of Gross Profit in Souvenirs) indicator measures the result of the souvenirs gross profit account obtained by the execution of the sales process activities in the store of the restaurant; it calculates the variation between the actual gross profit in souvenir versus the budgeted gross profit in souvenirs and against the maximum possible gross profit in souvenirs, refer Table 6.

Table 6. *Specific information for the indicator record sheet % var SGP*

Indicator control information				
Indicator name:	Variation of Gross Profit in Souvenirs	Relationship with other indicators in other perspectives:	Financial: Clients: Processes:	% var TGP # diff T and $ diff PT -
Abbreviation:	% var SGP			
Functional area:	Store of the restaurant			
Indicator type:	RI	Graphics Type:	Stacked bars Arrow icons with chart	
Performance perspective:	Financial			
Measurement focus:	Money	Result in:	Percentage	

Calculation

Result formula

% var SGP = (SGP actual / SGP budget) - 1

Output formula

SGP actual = ∑ (PT actual * T actual)

SGP budget = ∑ (PT budget * T budget)

Variables	Data source
SGP actual	Profit and Loss Statement of each HRC restaurant
PT actual and T actual	System financial report of each HRC restaurant
SGP budget, PT budget and T budget	Annual budget of each HRC restaurant

Note: SGP, Souvenirs Gross Profit; RI, Result Indicator; TGP, Total Gross Profit; T, Transactions; PT, Gross Profit per Transaction; var, variation; diff, difference.

The $ diff PCF (Gross Profit Difference per Cover in Food) indicator measures the resulting gross profit in food for each restaurant cover, generated by the sales activity focused on offering the products with the highest gross profit margin of each food family; It calculates the difference between the actual profit per cover in food versus the profit per cover in budgeted food and against the maximum possible profit per cover in food, refers Table 7.

Table 7. *Specific information for the indicator record sheet $ diff PCF*

Indicator control information				
Indicator name:	Gross Profit Difference per Cover in Food	Relationship with other indicators in other perspectives:	Financial: Clients: Processes:	% var FGP - # diff FPC and % var MPF
Abbreviation:	$ diff PCF			
Functional area:	Dining room and bar			
Indicator type:	PI	Graphics Type:	Lines Arrow icons with chart	
Performance perspective:	Clients			
Measurement focus:	Money	Result in:	Number	

Calculation

Result formula

$ diff PCF = PCF actual - PCF budget

Output formula

PCF actual = Σ FGP actual / Σ C actual

PCF budget = Σ FGP budget / Σ C budget

Variables	Data source
Σ FGP actual and Σ C actual	System financial report of each HRC restaurant
Σ FGP budget and Σ C budget	Annual budget of each HRC restaurant

Note: PCF, Gross Profit per Cover in Food; PI, Performance Indicator; FGP, Food Gross Profit; FPC, Food Perfect Cover; MPF, Maximization of Profit in Food; C, Covers; var, variation; diff, difference.

The # diff C (Covers Difference) indicator measures the number of diners who consumed a main dish in the restaurant; it calculates the difference between the real covers against the budgeted covers and the maximum possible cover, refer to Table 8.

Table 8. *Specific information for the indicator record sheet # diff C*

Indicator control information				
Indicator name:	Covers difference	Relationship with other indicators in other perspectives:	Financial:	% var FGP and % var BGP
Abbreviation:	# diff C		Clients:	-
Functional area:	Reception		Processes:	% diff UC and # diff RTC
Indicator type:	PI	Graphics Type:	Stacked bars	
Performance perspective:	Clients		Arrow icons with chart	
Measurement focus:	Volume	Result in:	Number	

Calculation
Result formula
 # diff C = C actual - C budget
Output formula
C rea l= Σ C actual
C budget = Σ C budget

Variables	Data source
Σ C actual	System financial report of each HRC restaurant
Σ C budget	Annual budget of each HRC restaurant

Note: C, Cover; PI, Performance Indicator; FGP, Food Gross Profit; BGP, Beverages Gross Profit; UC, Used Capacity; RTC, Transactions/Covers Ratio; var, variation; diff, difference.

The $ diff PCB (Difference of Gross Profit per Cover in Beverages) indicator measures the resulting gross profit in beverages for each restaurant cover, generated by the sales activity focused on offering the products with the highest gross profit margin of each beverage family; it calculates the difference between the actual profit per cover on beverages versus the profit per cover on budgeted beverages and against the maximum possible profit per cover on beverages, refers Table 9.

Table 9. *Specific information for the indicator record sheet $ diff PCB*

Indicator control information				
Indicator name:	Difference of Gross Profit per Cover in Beverages	Relationship with other indicators in other perspectives:	Financial:	% var BGP
Abbreviation:	$ diff PCB		Clients:	-
Functional area:	Dining room and bar		Processes:	# diff BPC and % var MPB
Indicator type:	PI	Graphics Type:	Lines	
Performance perspective:	Clients		Arrow icons with chart	
Measurement focus:	Money	Result in:	Number	

Calculation
Result formula
$ diff PCB = PCB actual - PCB budget
Output formula
PCB actual = Σ BGP actual / Σ C actual
PCB budget = Σ BGP budget / Σ C budget

Variables	Data source
Σ BGP actual and Σ C actual	System financial report of each HRC restaurant
Σ BGP budget and Σ C budget	Annual budget of each HRC restaurant

Note: PCB, Gross Profit per Cover in Beverages; PI, Performance Indicator; BGP, Beverages Gross Profit; BPC, Beverages Perfect Cover; MPB, Maximization of Profit in Beverages; C, Covers; var, variation; diff, difference.

The # diff T (Difference of Transactions) indicator measures the number of transactions that were made in the restaurant store; it calculates the difference between the actual transactions versus the budgeted transactions and against the maximum possible transactions, refers to Table 10.

Table 10. *Specific information for the indicator record sheet # diff T*

Indicator control information				
Indicator name:	Difference of Transactions	Relationship with other indicators in other perspectives:	Financial:	% var SGP
Abbreviation:	# diff T		Clients:	-
Functional area:	Store of the restaurant		Processes:	# diff RTC
Indicator type:	PI	Graphics Type:	Stacked bars	
Performance perspective:	Clients		Arrow icons with chart	
Measurement focus:	Volume	Result in:	Number	

Calculation
Result formula
 # diff T = T actual - T budget
Output formula
T actual = Σ T actual
T budget = Σ T budget

Variables	Data source
Σ T actual	System financial report of each HRC restaurant
Σ T budget	Annual budget of each HRC restaurant

Note: T, Transactions; PI, Performance Indicator; SGP, Food Gross Profit; RTC, Transactions/Cover Ratio; diff, difference; var, variation.

The $ diff PT (Difference of Gross Profit per Transaction) indicator measures the resulting gross profit in souvenirs for each transaction carried out in the restaurant's store, generated by the sales activity focused on offering the products with the highest gross profit margin of each family in the store; it

calculates the difference between the actual profit per transaction versus the budgeted profit per transaction and against the maximum possible profit per transaction, refer Table 11.

Table 11. *Specific information for the indicator record sheet $ diff PT*

Indicator control information				
Indicator name:	Difference of Gross Profit per Transaction	Relationship with other indicators in other perspectives:	Financial:	% var SGP
Abbreviation:	$ diff PT		Clients:	-
Functional area:	Store of the restaurant		Processes:	# diff ST and % var MPS
Indicator type:	PI	Graphics Type:	Lines	
Performance perspective:	Clients		Arrow icons with chart	
Measurement focus:	Money	Result in:	Number	

Calculation
Result formula
$ diff PT = PT actual - PT budget
Output formula
PT actual = Σ SGP actual / Σ T actual
PT budget = Σ SGP budget / Σ T budget

Variables	Data source
Σ SGP actual and Σ T actual	System financial report of each HRC restaurant
Σ SGP budget and Σ T budget	Annual budget of each HRC restaurant

Note: PT, Gross Profit per Transaction; PI, Performance Indicator; SGP, Souvenirs Gross Profit; ST, Souvenirs per Transaction; MPS, Maximization of Profit in Souvenirs; T, Transactions; var, variation; diff, difference.

The # diff FPC (Difference in Food Perfect Cover) indicator measures the number of starters, desserts, and extras sold in addition to the main course to the diner; it calculates the difference between the actual perfect cover in food versus the budgeted perfect cover in food and against the perfect cover in food maximum possible, refers Table 12.

Table 12. *Specific information for the indicator record sheet # diff FPC*

Indicator control information				
Indicator name:	Difference in Food Perfect Cover	Relationship with other indicators in other perspectives:	Financial:	-
Abbreviation:	# diff FPC		Clients:	$ diff PCF
Functional area:	Dinning room and bar		Processes:	-
Indicator type:	KPI	Graphics Type:	Lines	
Performance perspective:	Processes		Arrow icons with chart	
Measurement focus:	Volume	Result in:	Number	

Calculation
Result formula
 # diff FPC = FPC actual - FPC budget
Output formula
FPC actual = (Σ starters sold actual / Σ C actual) + (Σ desserts sold actual / Σ C actual) + (Σ extras sold actual / Σ C actual)
FPC budget = (Σ starters sold budget / Σ C budget) + (Σ desserts sold budget / Σ C budget) + (Σ extras sold budget / Σ C budget)

Variables	Data source
Σ starters sold actual, Σ desserts sold actual, Σ extras sold actual and Σ C actual	System financial report of each HRC restaurant
Σ starters sold budget, Σ desserts sold budget, Σ extras sold budget and Σ C budget	Annual budget of each HRC restaurant

Note: FPC, Food Perfect Cover; KPI, Key Performance Indicator; PCF, Gross Profit per Cover in Food; C, Cover; diff, difference.

The % var MPF (Variation of Maximization of Profit in Food) indicator measures how the sale of the dishes that generate the highest profit in each food family is promoted; it calculates the percentage variation between the actual maximum profit per dish against the budgeted maximum profit per dish and the maximum profit possible per dish, refer Table 13.

Table 13. *Specific information for the indicator record sheet % var MPF*

Indicator control information				
Indicator name:	Variation of Maximization of Profit in Food	Relationship with other indicators in other perspectives:	Financial:	-
Abbreviation:	% var MPF		Clients:	$ diff PCF
Functional area:	Dinning room and bar		Processes:	-
Indicator type:	KPI	Graphics Type:	Stacked bars and lines	
Performance perspective:	Processes		Arrow icons with chart	
Measurement focus:	Money	Result in:	Percentage	

Calculation
Result formula
% var MPF = (MPF actual / MPF budget) - 1
Output formula
MPF actual = Σ FGP actual / Σ # of dishes sold actual
MPF budget = Σ FGP budget / Σ # of dishes sold budget

Variables	Data source
Σ FGP actual	Profit and Loss Statement of each HRC restaurant
Σ # of dishes sold actual	System financial report of each HRC restaurant
Σ FGP budget and Σ # of dishes sold budget	Annual budget of each HRC restaurant

Note: MPF, Maximization of Profit in Food; KPI, Key Performance Indicator; PCF, Gross Profit per Cover in Food; FGP, Food Gross Profit; var, variation; diff, difference.

The % diff UC (Difference in Used Capacity) indicator measures the percentage of seats used by the diners against the seats available during the restaurant's busiest operating hours; it calculates the difference between the actual used capacity versus the budgeted used capacity and against the maximum possible used capacity, refer Table 14.

Table 14. *Specific information for the indicator record sheet % diff UC*

Indicator control information			
Indicator name:	Difference in Used Capacity	Relationship with other indicators in other perspectives:	Financial: -
Abbreviation:	% diff UC		Clients: # diff C
Functional area:	Reception		Processes: -
Indicator type:	KPI	Graphics Type:	Stacked bars and lines
Performance perspective:	Processes		Arrow icons with chart
Measurement focus:	Volume	Result in:	Percentage

Calculation

Result formula

% diff UC = % UC actual - % UC budget

Output formula

*% UC actual = (Σ C actual during peak operating shifts) / (Σ peak operating shifts actual * Σ available seats actual)*

*% UC budget = (Σ C budget during peak operating shifts) / (Σ peak operating shifts budget * Σ available seats budget)*

Variables	Data source
Σ C actual during peak operating shifts	Profit and Loss Statement of each HRC restaurant
Σ peak operating shifts actual and Σ available seats actual	System financial report of each HRC restaurant
Σ C budget during peak operating shifts, Σ peak operating shifts budget and Σ available seats budget	Annual budget of each HRC restaurant

Note: UC, Used Capacity; KPI, Key Performance Indicator; C, Covers; diff, difference.

The # diff BPC (Difference in Beverages Perfect Cover) indicator measures the number of additional drinks sold to a diner; it calculates the difference between the actual perfect cover in beverages versus the budgeted perfect cover in beverages and against the perfect cover in beverages maximum possible, refers Table 15.

Table 15. *Specific information for the indicator record sheet # diff BPC*

Indicator control information			
Indicator name:	Difference in Beverages Perfect Cover	Relationship with other indicators in other perspectives:	Financial: -
Abbreviation:	# diff BPC		Clients: $ diff PCB
Functional area:	Dinning room and bar		Processes: -
Indicator type:	KPI	Graphics Type:	Lines
Performance perspective:	Processes		Arrow icons with chart
Measurement focus:	Volume	Result in:	Number

Calculation

Result formula

 # diff BPC = BPC actual - BPC budget

Output formula

BPC actual = Σ drinks sold actual / Σ C actual

BPC budget = Σ drinks sold budget / Σ C budget

Variables	Data source
Σ drinks sold actual and Σ C actual	System financial report of each HRC restaurant
Σ drinks sold budget and Σ C budget	Annual budget of each HRC restaurant

Note: BPC, Beverages Perfect Cover; KPI, Key Performance Indicator; PCB, Gross Profit per Cover in Beverages; C, Cover; diff, difference.

The % var MPB (Variation of Maximization of Profit in Beverages) indicator measures how the sale of the drinks that generate the highest profit in each beverage family is promoted; it calculates the percentage variation that exists between the actual maximum profit per drink against the budgeted

maximum profit per drink and the maximum profit possible per drink, refers Table 16.

Table 16. *Specific information for the indicator record sheet % var MPB*

Indicator control information				
Indicator name:	Variation of Maximization of Profit in Beverages	Relationship with other indicators in other perspectives:	Financial:	-
Abbreviation:	% var MPB		Clients:	$ diff PCB
Functional area:	Dinning room and bar		Processes:	-
Indicator type:	KPI	Graphics Type:	Stacked bars and lines	
Performance perspective:	Processes		Arrow icons with chart	
Measurement focus:	Money	Result in:	Percentage	

Calculation
Result formula
% var MPB = (MPB actual / MPB budget) – 1
Output formula
MPB actual = Σ BGP actual / Σ # of drinks sold actual
MPB budget = Σ BGP budget / Σ # of drinks sold budget

Variables	Data source
Σ BGP actual	Profit and Loss Statement of each HRC restaurant
Σ # of drinks sold actual	System financial report of each HRC restaurant
Σ BGP budget and Σ # of drinks sold budget	Annual budget of each HRC restaurant

Note: MPB, Maximization of Profit in Beverages; KPI, Key Performance Indicator; PCB, Gross Profit per Cover in Beverages; BGP, Beverages Gross Profit; var, variation; diff, difference.

The # diff RTC (Difference in the Transactions/Covers Ratio) indicator measures the ratio of covers who consumed in the restaurant and then made a purchase in the store; it calculates the difference between the ratio of actual transactions with covers against the ratio of transactions with covers budgeted and against the ratio of transactions with covers maximum possible, refers Table 17.

Table 17. *Specific information for the indicator record sheet # diff RTC*

Indicator control information				
Indicator name:	Difference in the Transactions/Covers Ratio	Relationship with other indicators in other perspectives:	Financial:	-
Abbreviation:	# diff RTC		Clients:	# diff C and # diff T
Functional area:	Dinning room, bar and store of the restaurant		Processes:	-
Indicator type:	KPI	Graphics Type:	Stacked bars and lines	
Performance perspective:	Clients		Arrow icons with chart	
Measurement focus:	Volume	Result in:	Number	

Calculation
Result formula
 # diff RTC = RTC actual - RTC budget
Output formula
RTC actual = Σ T actual / Σ C actual
RTC budget = Σ T budget / Σ C budget

Variables	Data source
Σ T actual and Σ C actual	System financial report of each HRC restaurant
Σ T budget and Σ C budget	Annual budget of each HRC restaurant

Note: RTC, Transactions/Covers Ratio; KPI, Key Performance Indicator; C, Covers; T, Transactions; diff, difference.

The # diff ST (Difference of Souvenir per Transaction) indicator measures the number of souvenirs that were purchased in a transaction; it calculates the difference between the actual souvenirs sold per transaction versus the budgeted souvenirs sold per transaction and against the maximum possible souvenirs sold per transaction, refer Table 18.

Table 18. *Specific information for the indicator record sheet # diff ST*

Indicator control information			
Indicator name:	Difference of Souvenirs per Transaction	Relationship with other indicators in other perspectives:	Financial: - Clients: $ diff PT Processes: -
Abbreviation:	# diff ST		
Functional area:	Store of the restaurant		
Indicator type:	KPI	Graphics Type:	Lines
Performance perspective:	Processes		Arrow icons with chart
Measurement focus:	Volume	Result in:	Number
Calculation			
Result formula			
# diff ST = ST actual - ST budget			
Output formula			
ST actual = Σ souvenirs sold actual / Σ T actual			
ST budget = Σ souvenirs sold budget / Σ T budget			
Variables		**Data source**	
Σ souvenirs sold actual and Σ T actual		System financial report of each HRC restaurant	
Σ souvenirs sold budget and Σ T budget		Annual budget of each HRC restaurant	

Note: ST, Souvenirs per Transaction; KPI, Key Performance Indicator; PT, Gross Profit per Transaction; T, Transactions; diff, difference.

The % var MPS (Variation of Maximization of Profit in Souvenirs) indicator measures how the sale of souvenirs that generate the highest profit in each beverage family is promoted; it calculates the percentage variation between the actual maximum profit per souvenir against the budgeted maximum profit per souvenir and the maximum profit possible per souvenir, refer Table 19.

Table 19. *Specific information for the indicator record sheet % var MPS*

Indicator control information				
Indicator name:	Variation of Maximization of Profit in Souvenirs	Relationship with other indicators in other perspectives:	Financial:	-
Abbreviation:	% var MPS		Clients:	$ diff PT
Functional area:	Store of the restaurant		Processes:	-
Indicator type:	KPI	Graphics Type:	Stacked bars and lines	
Performance perspective:	Processes		Arrow icons with chart	
Measurement focus:	Money	Result in:	Percentage	
Calculation				

Result formula

$$\% \text{ var } MPS = (MPS \text{ actual} / MPS \text{ budget}) - 1$$

Output formula

$$MPS \text{ actual} = \Sigma SGP \text{ actual} / \Sigma \# \text{ of souvenirs sold actual}$$

$$MPS \text{ budget} = \Sigma SGP \text{ budget} / \Sigma \# \text{ of souvenirs sold budget}$$

Variables	Data source
Σ SGP actual	Profit and Loss Statement of each HRC restaurant
Σ # of souvenirs sold actual	System financial report of each HRC restaurant
Σ SGP budget and Σ # of souvenirs sold budget	Annual budget of each HRC restaurant

Note: MPS, Maximization of Profit in Souvenirs; KPI, Key Performance Indicator; PT, Gross Profit per Transaction; SGP, Souvenirs Gross Profit; var, variation; diff, difference.

Result S.5. The formulas for the reference points to evaluate the operations' actual performance (not acceptable, acceptable, low outstanding, moderate outstanding, and high outstanding) are also part of the PMS-BEREST and are presented in Figure 5.
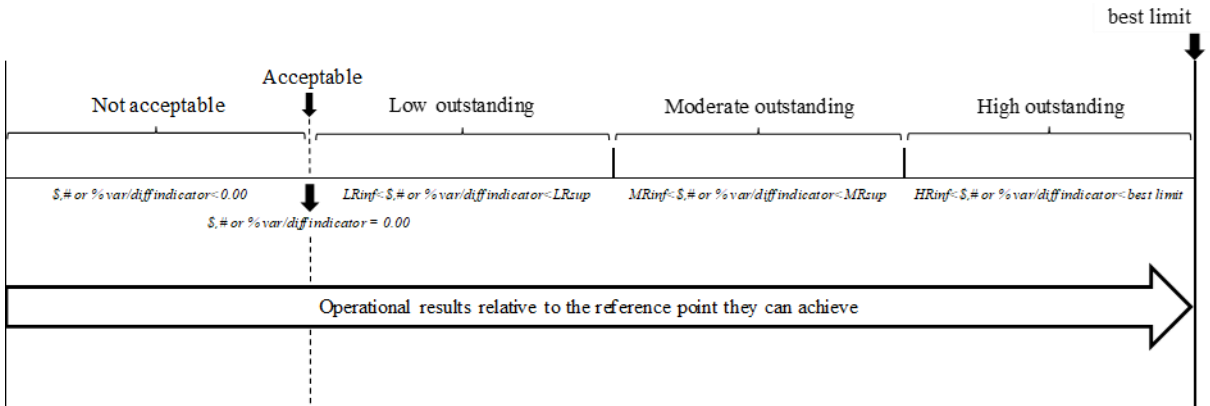
Figure 5. Reference points to measure the quality of the performance obtained. Var, variation; diff, difference; LR_{inf}, Low outstanding inferior Range; LR_{sup}, Low outstanding superior Range; MR_{inf}, Moderate outstanding inferior Range; MR_{sup}, Moderate outstanding superior Range; HR_{inf}, High outstanding inferior Range.

Result S.6. The indicator's life sheet was integrated with: (a) Name of the indicator, (b) period evaluated, (c) result of the PM (not acceptable, acceptable, low outstanding, moderate outstanding, and high outstanding), and (d) qualitative aspects related to the performance of that indicator, refer Table 20.

Table 20. *Indicator life sheet for the registration of qualitative aspects*

Indicator:	Indicator result		
Period evaluated	Quality level	% or $ or #	Qualitative aspects
Daily Day 1 … Day n			
Week to date Week 1 … Week n			
Month to date January … Month n			
Year to date Year 1 … Year n			

Discussion
Conclusion

As there is no theoretical framework or model of PMS that all organizations could implement, there was a need to design them with the approach of organization measurement according to its size and the economic sector in which it develops or competes. Since 2000, the design of PMSs took more strength, which allowed research in three areas: (a) the conditions in which the PMS is used, (b) the benefits provided by IT to facilitate its use, and (c) the development of PMSs tailored to each industrial sector (design of the PMS).

This research is focused on the second stage of a PMS life cycle, the design. The first three steps of the method made it possible to obtain the PMS-BEREST architecture, which is aligned with the strategy, the TRs' sales process, and the stakeholders' requirements. The PMS-BEREST is balanced: it uses results indicators (financial or retroactive) and performance indicators (non-financial or predictive) in different performance perspectives oriented to managing the TRs' sales process.

The following fourth step allowed the design of each of the indicators to be integrated into the PMS to evaluate the sales process's financial result at a strategic level in the total gross profit account of a TR. As a result were obtained ten new indicators ($ diff PCF, $ diff PCB, $ diff PT, # diff FPC, % var MPF, % var UC, # diff BPC, % var MPB, # diff ST and % var MPS) with the purpose to increase gross profit instead of net income, which generates more benefit for the restaurant. Seventeen indicators integrated the PMS-

BEREST; the HRC brand was already using seven (one KPI, three RIs, two PIs, and one KPI), and ten were newly constructed (three PIs and seven KPIs).

Regarding the reference point definition for each indicator, PMS-BEREST proposes five instead of the three that are regularly included in any PMS. These are: not accepted, accepted, and three levels of results range when exceeding the budget limit (low outstanding, moderate outstanding, and high outstanding) to stimulate performance when strategy and stakeholder expectations have been exceeded. These three outstanding limits were obtained by establishing a limit with the maximum possible results for restaurants to achieve in operation (best limit).

The indicators' life sheet enables the recording of qualitative events and how they influenced the quantitative results, an element not customarily considered in the PMS design process.

The sales process in the TRs has particular characteristics in its execution, so it is impossible to measure it using the generic indicators customary in most restaurants. Hence, it is necessary to adjust each indicator to assertively measure each of the activities, functions, and initiatives part of the sales process in this type of restaurant. It is also necessary to consider that the sales made in their store generate a substantial part of the income and to measure this, other types of indicators are required. The gap of knowledge that closes this research in the design stage of a PMS for a TR can be evidenced by comparing the results obtained in PMS-BEREST against the options of existing models and theoretical frameworks for the individual indicators, GIs, and PMSs for the sales process assessment in restaurants.

First, it is necessary to compare the PMS-BEREST against the use of the indicators individually to measure the performance in the sales process in a TR; using them individually does not allow for relating the strategic objectives of the organization with the expected performance; this happens because when the indicators are not aligned using a strategic map, only the indicators that are known or used only by the experience of each decision-maker are used since they consider that they are adequate, this usually does not allow to connect one indicator with another, which compromises the expected results. Another relevant point is that in the restaurant management literature when the use of individual indicators is proposed, there is no way to visualize them graphically; the graphic proposal to visualize the indicators used for PM in restaurants has only been made by the KPI Institute (KPI Institute, 2012c).

Regarding the differences that exist between the PMS-BEREST and RevPASH in the measurement of the sales process of a TR, it should be noted that RevPash focuses on using the seats as the available inventory in a restaurant, so its objective is to increase the use of these seats in periods of hours, that is, to increase the use of the installed capacity of the seats that exist

in the business during the hours in which the restaurant is open to the public. PMS-BEREST, on the other hand, focuses on measuring performance in a broader process (sales), which includes the relationship between sales and costs to obtain a higher gross profit.

Concerning the PMS proposed by The KPI Institute, the Restaurant Performance Management System Toolkit, one of the differences with the PMS-BEREST is that the latter is designed in its architecture to close the relationship between the sales process and the cost of sales in its measurement. The difference between the indicators that integrate the Restaurant Performance Management System architecture and the PMS-BEREST architecture can be seen in the following: the KRIs and RIs of $ sales volume, $ food sales and beverages sales are not the main focus of performance measurement for PMS-BEREST, so are used % var TGP, % var BGP, and % var SGP (exclusive indicator for the TRs); the KPIs and PIs of $ RevPash, $ sales per labor hour, $ Revenue per available square meter, $ Restaurant revenue per employee, $ Revenue per table, are not related to the main measurement objective of the PMS-BEREST (gross profit), so $ diff PCF, $ diff PCB and $ diff PT (exclusive indicator for the TRs) are used; These other indicators measure how many products a server, a bartender and a vendor must sell to achieve their gross profit goal in relation to the number of products they must sell to each client (# diff FPC, # diff BPC and # diff ST), which in turn are multiplied by the dishes, beverages and merchandise sold that generate the highest profit for each family (% var MPF, % var MPB and % var MPS).

The contribution that the PMS-BEREST makes to knowledge is that it aligns, through the use of strategic maps, the sales strategy of the TRs, making evident the connections between indicators, which makes it possible to distinguish how the change in a KPI is immediately reflected in the subsequent PIs, RIs, and KRIs. Also, the PMS and each indicator are designed following the indications of the theoretical frameworks of the BSC, PRISM, and KBEMS. The following was taken as a base: from the BSC, applying its proposal of performance dimensions for the elaboration of strategic maps; from the PRISM, for the evaluation of the requirements of the PMSs, the requirements of the indicators, its proposal in the scope of the PM and in the indicator registry sheets (which include the elements that must meet each indicator individually and within a PMS); while from the KBEMS, was generated the idea of being able to measure the results superior to an acceptable PM in three outstanding ranges (low, moderate and high). The aforementioned is evident in the indicator record sheet format, showing: the name of the indicator, its code, functional area, type of indicator, performance perspective, measurement focus, relationship to the indicators with those of other performance perspectives, type of graphs, how to reflect the result, and the formulas for its calculation.

Future research

From the results obtained in this study, the following possible future lines of research emerged:

To apply the PMS-BEREST to non-theme restaurants but with table service (even if they do not have a store), the objective is to establish the indicators used in the dining room as generic indicators of the restaurant industry.

To analyze the PMS-BEREST functionality in stages of the life cycle not covered here (implementation, operation, or use and updating) to qualitatively assess the effects (positive or negative) that it could generate in the TRs operation.

To adjust the indicators that measure the performance of transactions and souvenirs to use them in restaurants that do not have a store and have a high volume of wines or cigars. It would extend the scope of the PMS-BEREST to other types of restaurants.

To continue this research, the quantitative approach to be published will disseminate the results obtained with the PMS-BEREST during implementation, a stage of the life cycle after the design of PMS. Some software had to be chosen to implement the PM. The correlations of these results were statistically validated.

Practical implications

As a practical effect in a restaurant, it would imply a series of changes in its sales process; the first should be set as a new objective for servers and bartenders to offer as the first alternative the products that generate the highest profit of each family of food and beverages, in the same way, they should do it for the vendors in the store, which implies training the staff to achieve this purpose. Second, the food and beverage menu and the visual elements in the store should be reinforced with photographs that only show the images of the dishes, beverages, and merchandise that generate the highest gross profit; in addition, in the food and beverage menu and the price list in the store, the first products to be presented will be those that generate the highest gross profit.

Limitations

PMS proposed in this study has as a limit in its scope the measurement of the effect of performance of sales process activities and its effect on the gross profit account of a TR, so it will not serve to measure the processes related to the expenses of the restaurant. Due to the system's flexibility, these processes could be integrated into the model with the proper investigations and tests' exemption.

In contrast to the existing models, the PMS-BEREST is based on different life stages (evaluation, design, implementation, daily use, and updating) for which a PMS has to be tested to be considered functional. Each of these stages implies a challenge for the organization to put into practice. There are risks in each step since if they are not correctly performed, they could cause the PMS to generate more problems than benefits.

Lastly, data in other types of restaurants may not be as easy to obtain as in the TRs, which generally use specialized and standardized software and hardware. The lack of assertive data could make the PMS more of a problem than a restaurant's benefit.

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Processus de Vieillissement actif : cas des pratiques de protection sociale des travailleurs informels du secteur des transports routiers urbains d'Adjamé (commune d'Abidjan Côte d'Ivoire)

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Résumé

La présente étude vise à comprendre, les pratiques de protection sociale des travailleurs informels du secteur des transports routiers urbains d'Adjamé (commune d'Abidjan Côte d'Ivoire) dans le processus du vieillissement actif. Dans une approche interactionniste, la théorie de la stratégie d'ajustement de R.Lazarus et S.Folkman (1984) a été mobilisée en vue d'évaluer les risques liés au vieillissement de cette catégorie socio-professionnelle avant de saisir leurs stratégies d'ajustement au vieillissement actif. Partant, l'approche qualitative à travers des entretiens semi directifs, des observations directes, la recherche documentaire et la technique d'échantillonnage à choix raisonné, a permis de collecter des données et d'aboutir aux résultats suivants : d'abord, le vieillissement est perçu par les travailleurs informels comme une incapacité socio-économique et physique. Ils y voient comme une sorte de mort sociale. En outre, ces travailleurs, pour faire face aux risques liés au vieillissement, ils disposent des ressources physiques et socio-affectives conséquentes. Enfin, la solidarité intergénérationnelle et l'approche préventive par l'investissement social sont pour ceux-ci des ressources résilientes qu'ils mobilisent pour favoriser leurs

vieillissements actifs.

Active Ageing Process: Case of Social Protection Practices of Informal Workers in the Urban Transport Sector of Adjamé (Abidjan Cote d'Ivoire)

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Abstract

This study aims to understand, in the process of active ageing, the social protection practices of informal workers in the urban road transport sector of Adjamé (Abidjan, Côte d'Ivoire). In an interactionist approach, the adjustment strategy theory of R. Lazarus and S. Folkman (1984) was mobilised in order to evaluate the risks linked to ageing in this socio-professional category before understanding their adjustment strategies to active ageing. Accordingly, the qualitative approach through semi-structured interviews, direct observations, documentary research and the purposive sampling technique made it possible to collect data and to arrive at the following results: firstly, ageing is perceived by these informal workers as a socio-economic and physical incapacity, or even social death. Second, they have the physical and socio-emotional resources to cope with the risks associated with ageing. Finally, their strategies for adjusting to active ageing are based on intergenerational solidarity on the one hand and the preventive approach through social investment on the other.

Keywords: Social protection, active ageing, informal worker, urban road transport, adjustment strategy

Introduction

En Côte d'Ivoire, le vieillissement de la population est une réalité. Si bien qu'en 2018 environs 1.200 000 personnes âgées de plus de 65 ans ont été enregistrés dans le pays (Sylver Eco, 2016). Ainsi, face au vieillissement, les pouvoirs publics ont mis en place des services publics de la prévoyance sociale en faveur de tous les travailleurs du secteur privé. L'objectif étant de fournir aux bénéficiaires des prestations à l'effet de palier les conséquences

financière de certains risques tels que la vieillisse et l'invalidité. Les services publics sont gérés par des Institutions de Prévoyance Sociale (IPS) notamment la Caisse Nationale de Prévoyance Sociale (CNPS) et la Caisse Générale de Retraite des Agents de l'État (CGRAE). L'affiliation à ces différentes IPS est sous conditions. En effet, l'IPS-CGRAE est ouverte aux fonctionnaires et agents de l'État. Tandis que, l'IPS-CNPS est destinée aux travailleurs du secteur privé et assimilé.

En 2014, avec une population active[1] estimée à 12 692 981 d'habitants, la CGRAE a réalisé un taux de couverture sociale de 1.76% tandis que la CNPS en a réalisé 4,91% (Rapport Cipres[2], 2014). Les taux de couverture sociale affichés par les services publics de prévoyance sociale sont dus à la non-couverture de la plupart des travailleurs issus du secteur informel. En fait, les travailleurs du secteur formel y sont privilégiés à partir des conditions d'affiliations. Or le marché ivoirien du travail est dominé par des emplois de l'économie informelle (J. Charmes & P. Adair, 2014 ; F. Roubaud, 2014, INS, 2002).

Dans le district d'Abidjan, la part des emplois engendrés par le secteur informel est estimée à plus de 74% (J-L., Lognon, 2010). Le travailleur informel n'a pas accès aussi facilement aux services publics de prévoyance sociale y compris les travailleurs du secteur artisanal (informel) du transport urbain[3].

En plus, ils appartiennent à la cohorte socio-professionnelle qui vit au mépris des dispositions de la législation du travail en vigueur. Ils sont soumis à des conditions de travail et de salaire non conforme aux dispositions du titre troisième[4] du code du travail ivoirien. En effet, les travailleurs artisanaux ou informels du transport urbain d'Adjamé exercent dans des conditions caractérisées entre autres par une instabilité du travail sans contrat de travail, mode de rémunération au comptant, absence de salaire fixe etc. Toute cette situation les expose davantage à la vulnérabilité aux risques socio-professionnels sans protection sociale formelle.

Dès lors, comment les travailleurs informels préparent-ils leur vieillissement en bonne santé tout en restant actif ? Cette question centrale peut être opérationnalisée à travers trois (03) questions subsidiaires. Alors, quelle est leur perception du vieillissement ? Quelles sont les ressources

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[1] La population active est la tranche d'âge de 14-64 ans.

[2] C.I.PRE.S : Conférence Interafricaine de la Prévoyance Sociale

[3] Le secteur des transports urbain fait partie du secteur « service » qui est le deuxième pourvoyeur d'emploi après le secteur des activités commerciales (INS, 2002).

[4] Titre 3 du code de travail ivoirien Edition 2017 relatif au salaire. Article 31.1 : "Par rémunération ou salaire, il faut entendre le salaire minimum catégoriel et ses accessoires ainsi que tous les autres avantages, payés directement ou indirectement, en espèce ou en nature, par l'employeur au travailleur en raison de l'emploi de ce dernier. Il ne peut être inférieur au salaire minimum catégoriel fixé par convention ou accord ou à défaut par voie règlementaire »

mobilisées par les travailleurs informels du secteur des transports urbains d'Adjamé pour faire face au vieillissement pathologique ? Quelles sont leurs stratégies d'ajustement face au déficit de protection sociale institutionnelle afin d'espérer un vieillissement actif ?

Cette étude a pour objectif de comprendre les pratiques de protection sociale des travailleurs informels du secteur de transports routier d'Adjamé en lien avec le vieillissement actif.

1. Démarche méthodologique
1.1. Présentation de la zone de l'étude

L'étude se déroule dans la ville d'Abidjan précisément dans les gares spontanées de la commune d'Adjamé. Ces gares sont des espaces exploités par les véhicules de transport routier urbain collectif de personnes notamment les minicars appelés « Gbaka », les taxis communaux « wôrô-wôrô », et les taxis intercommunaux « les banan-banan ».

Les populations concernées par cette étude sont essentiellement composées d'acteurs intervenant comme travailleurs informels dans le secteur du transport routier urbains installés sur le périmètre des gares routières de la commune d'Adjamé. Il s'agit notamment de :
- Chauffeurs roulants (les chauffeurs titulaires[5] ou « embauchés », les chauffeurs en second[6] et les chauffeurs contractuels[7] ou temporaires)
- Des chargeurs (apprentis ou convoyeurs, les apporteurs de clients ou « coxers » ; les agents de syndicat appelés les « gnambros »)
- Les responsables (chefs de gares, chef des syndicats, agent de la protection sociale)

Tableau 1 : Tableau récapitulatif des enquêtés par catégories socio-professionnelles

Catégories professionnelles		Effectif
Chauffeurs	Titulaire	3
	Second	2
	Contractuel	4
Chargeurs	Apprentis balanceur	4
	Coxer (apporteur d'affaire)	4
	Agent de syndicat (Gnambros)	3

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[5] Le chauffeur titulaire est le chauffeur à qui le propriétaire (le transporteur) a confié le véhicule de transport et qui bénéficie d'une rémunération. Celui-ci est chargé du versement de la recette journalière.

[6] Le chauffeur en second est une aide ou un deuxième chauffeur recruté par le chauffeur titulaire comme un remplaçant. Le mode rémunération de celui-ci est défini par le chauffeur titulaire.

[7] Le chauffeur contractuel est un chauffeur qui, n'ayant pas de véhicule fixe, par solidarité de ses collègues bénéficie de quelques moments de travail. Celui-ci tire sa rémunération du surplus de la recette journalière qui lui est imposée.

	Responsables des gares	5
Responsables	Responsables syndicaux	4
	Responsables de la protection sociale	2
Total		31

Source : DAPA Kouadio Christian, Enquête 2020

1.2. Collectes des données et cadre de référence théorique

L'étude s'inscrit dans une approche qualitative. La théorie de la stratégie d'ajustement[8] de R. Lazarus & S. Folkman (1984) est convoquée pour appréhender le vieillissement comme un processus qui recouvre des implications à la fois sociale et économique, capables de susciter une situation stressante chez les travailleurs informels du secteur de transport routier urbain collectif d'Adjamé. Selon cette théorie, les travailleurs adoptent deux (2) postures. D'abord, à partir de la représentation qu'ils font des risques associés au processus du vieillissement, ils évaluent les ressources disponibles (sociale, économique et culturelle) et dont ils ont la capacité de mobiliser pour en faire face. Puis à partir de ces ressources, ils développent des stratégies d'ajustement ou d'adaptation basées sur le contournement ou l'évitement des risques liés aux activités dans le secteur des transports urbains collectifs en vue de combler le déficit institutionnel de protection sociale.

La collecte des données a nécessité l'utilisation de la revue documentaire, des interviews semi-structurés et de l'observation directe. Les interviews semi-structurées ont été réalisées auprès des travailleurs informels notamment les chauffeurs, les chargeurs, et les responsables syndicaux et des gares spontanées avec l'aide d'un guide d'entretien. Au total, 31 personnes ont été interrogées au cours de cette étude dont 9 chauffeurs, 11 chargeurs[9] , 9 responsables syndicaux et des gares, et 2 agents des services de protection sociale. Le choix des personnes interrogées était selon des critères d'inclusion. En effet, ces critères sont entre autres : être reconnu travailleurs régulièrement pendant au moins deux (2) ans dans la zone de l'étude, être chauffeur ou travailleur dans le secteur de transport routier urbain collectif et être âgé de 18 ans minimum. Cependant, la technique de l'échantillonnage étant le choix raisonné, la taille de notre échantillon a été déterminée en appliquant le principe de la saturation. À partir de 31 enquêtés, la saturation des données est atteinte car les données recueillies ne fournissaient plus d'éléments nouveaux à l'étude.

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[8] « La stratégie d'ajustement » est la traduction française de la théorie du stress et coping des auteurs R. Lazarus et R. Folkman, 1984.

[9] Dans cette étude, les chargeurs sont l'ensemble des apprentis ou convoyeurs appelés les « balanceurs », des agents des syndicats, appelé « gnambros » en malinké, et les apporteur de client appelés « coxeurs ».

1.3.   Analyse des données

Après l'enquête, les entretiens ont été rassemblés et codifiés. Par exemple, pour rendre compte de la formation comme facteur d'insertion professionnelle des potentiels aidants familiaux, le code FOR est employé. Cette opération avait pour but d'isoler chaque entretien afin d'en faciliter l'analyse. Par la suite, les informations sont regroupées par thèmes (PER= Perception du vieillissement) afin de structurer les récits et de dégager la fréquence des thèmes manifestes qui y sont repérables.

Enfin, une analyse des contenus manifestes a été faite, ultimes révélateurs du sens exact du phénomène étudié, et des contenus latents car selon R. L'Ecuyer (1990), elle permet d'accéder au sens caché potentiellement véhiculé par les informations.

2.   Résultats
2.1.   Perception des travailleurs informels relative au risque du vieillissement dans le secteur des transports routiers urbains collectifs
2.1.1.   Vieillissement perçu comme facteur de pauvreté

Pour les enquêtés, beaucoup d'entre eux vieillissent dans des conditions de pauvreté. Les raisons évoquées portent à la fois sur le niveau d'instruction des travailleurs et les conditions de travail. En effet, les activités de transport urbain dans la commune d'Adjamé sont exécutées *« en majorité par des travailleurs illettrés »* qui ont du mal à accéder aux informations fiables relatives à la prévoyance vieillesse. Aussi, l'organisation du secteur d'activités et le mode de rémunération[10] sont-ils des facteurs non favorables à l'épargne. Si bien que la majorité des enquêtés (soit 21 sur les 31 enquêtés) n'a pas d'épargne c'est-à-dire qu'ils ne disposent pas de compte bancaire proprement dit. Ils vivent au jour le jour sans précaution pour l'avenir. En fait, sans salaire formellement prédéfini, ils tirent leurs revenus sur le terrain en fonction de leur rendement quotidien. Dans ces conditions, il est difficile pour cette majorité de prendre des dispositions de prévoyance sociale pour prévenir le vieillissement dans la précarité financière. D'où pour survivre à un certain âge, « *beaucoup (…) sont obligés de venir se promener dans les gares comme des mendiants. Par solidarité on leur donne quelques choses pour pouvoir manger»*.   *(Chauffeur, 41 ans, niveau 3ᵉ ,entretien réalisé le 20 juillet 2020 à Adjamé gare CIE)*

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[10] La plupart des travailleurs du secteur de transport ne perçoivent pas de salaire régulier. Ceux qui en ont sont payés au comptant. Ils sont payés au rendement. La rémunération dépend de facteurs aléatoires notamment de la performance du travailleur, de la fluidité de la circulation, du temps, l'état du véhicule, etc.

2.1.2. Vieillissement accéléré par la pénibilité du travail associée à la consommation de substance psychoactives

Selon les travailleurs interrogés, ils affirment que les conditions de travail précaire et difficile accélèrent « *la perte de la force physique* ». En effet, les activités du secteur sont exécutées sous pressions en vue d'augmenter le gain quotidien. C'est pour cela, beaucoup d'entre eux ont recours au dopage par la consommation de substances psychoactives en l'occurrence des produits énergétiques à savoir l'alcool, les drogues, le tabac etc. Cependant, la consommation de ces substances a, à long terme, des répercussions sur leurs états de santé. Cet abus de consommation crée une situation de dépendance qui se constate dans leur quotidien. Dans le domaine des transports urbains à Adjamé, la retraite survient lorsque le travailleur ne dispose plus de ses capacités physiques et mentales pour tenir dans les activités. Cet état de fait est attesté par un acteur du secteur qui dit en substance « « *Je suis même plus en forme que certains jeunes de 30 ans (…) quand j'étais jeune je ne m'adonnais pas à certains produits comme la drogue, l'alcool, la cigarette ou autres. Tu vois j'ai 75 ans. Mais je continue de travailler* ». Alors, estime-t-il que la consommation de telles substances participe au vieillissement accéléré et fragilisé. (*Chef de gare, 75 ans, entretien réalisé le 28 juillet 2020 à Adjamé gare Gbaka de Port-Bouet 2*)

2.1.3. Déficit de privilège institutionnel de couverture sociale participe au vieillissement avec incapacité sociale et physique des travailleurs du secteur des transports.

Selon les enquêtés, la qualité des emplois du secteur de transport ne garantit pas un « *bon vieillissemen*t ». Si bien que la majorité (27 enquêtés sur 31) (tous les chauffeurs et chargeurs) est sans couverture sociale formelle. Les raisons identifiées portent essentiellement entre autre sur l'organisation informelle du secteur avec ses corollaires comme l'irrégularité des salaires, l'instabilité du travail due à l'absence de contrat de travail, etc. Dès lors, les barrières qui se présentent aux travailleurs informels sont perçues comme une inégalité sociale qui se mue en sorte d'exclusion sociale. En effet, le déficit institutionnel est le facteur déclencheur de cette inégalité sociale représentée par les acteurs du secteur. Il n'y a pas de cadre adéquat pour un vieillissement encadré et sécurisé. Cette situation trouve son fondement par la non reconnaissance par « le gouvernement » de leur statut de travailleur. C'est pourquoi, à leur vieil âge, ils sont rejetés par leurs entourages. Ainsi, V.Caradec, 2009 parle de « mort sociale ». Pour ces acteurs du transports urbains, l'Etat accorde plus d'importance aux travailleurs du secteur formel par des offres de couvertures sociales telles que « *les assurances pour se soigner et pour préparer la retraite* »(*Ancien chauffeur et chef de gare, 56 ans*, *entretien réalisé le 11 août 2020 à Adjamé gare centrale de Bingerville).*

2.2.   Ressources d'ajustement au vieillissement
2.2.1.   Effort physique lié à l'activité du transport influe la bonne santé

Les travailleurs du secteur des transports urbains d'Adjamé travaillent dans des conditions qui exigent l'effort physique. Ces efforts physique portent sur des tâches exécutées en position debout pour certaines et en mouvement (va-et-vient), de manutention, etc., pour d'autres. *« Les paresseux ne peuvent pas faire ce que nous faisons ici. Parce qu'il faut s'arrêter longtemps. On court pour chercher les clients. On porte les bagages des clients aussi. Donc tous ces mouvements sont beaucoup physiques »* (*Apprenti gbaka, 19 ans) entretien réalisé le 8 août 2020 à Adjamé gare d'Abobo BC*). Partant, les activités physiques quotidiennes sont représentatives d'une bonne santé. Par ricochet, celles-ci influent sur leur «bien-vieillir ». En d'autres termes, les efforts physiques réguliers que consacrent les activités de transports accroissent la longévité et contribue au bon vieillissement. (M.Campo et Al, 2015).

2.2.1.1. Famille : un comprimé affectif pour le travailleur

Face au risque du vieillissement pathologique[11], la famille est le premier recours des travailleurs en termes de protection sociale. Essentiellement pour les personnes âgées, l'entraide familiale est l'une des pratiques de protection sociale qui permet aux membres d'être solidaires entre eux. (B. Lecestre-Rollie, 2004 cité par S. Rozez.2020). Elle s'appuie sur l'entourage du travailleur notamment les enfants, les conjointes et les parents proches. Les réseaux familiaux demeurent le plus souvent aux côtés du travailleur dans les situations heureuses ou moins heureuses. Comme en témoigne ce travailleur : *« Sans ma famille je ne suis rien. Aujourd'hui, je ne peux plus travailler comme il se doit. Ce sont mes enfants et d'autres membres de ma famille qui me prennent en charges. Ils font tout pour moi. Grâce à eux, je vis bien ».* (*Responsable de gare, 75 ans, entretien réalisé à Adjamé gare de Port-Bouet 2*). La famille nucléaire du travailleur devient l'espace social la plus susceptible de lui offrir une sécurité sociale alternative dans la vieillesse. Cette entraide familiale intervient généralement pour faire face à des situations telles la maladie, la vieillesse, la perte d'emploi, etc. Ainsi, le soutien apporté est généralement sous forme financière (achat de médicament, apport financier, prise en charges de certaines dépenses du ménage), affective (accompagnement en cas d'incapacité physique occasionnée par la maladie ou l'avancée en âge).

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[11] Vieillissement qui s'accompagne de la maladie, de l'incapacité physique, sociale et financière. Voire un vieillissement des travailleurs informels dans une incapacité physique et financière leur dispensant de leurs responsabilités familiales et/ou sociales habituelles

2.2.1.2. Vie associative participant à l'épanouissement des travailleurs informels

Les travailleurs informels disposent des ressources sociales qui émergent de leur appartenance à des associations (professionnelles, communautaires etc.). Ainsi, les travailleurs interrogés ont une bonne perception de la vie associative. Pour eux, participer à une association de collègue, de ressortissant, de voisinage etc., permet de trouver un autre cadre de couverture de certains besoins. Ainsi, les travailleurs se servent de cette solidarité en guise de stratégie pour combler le déficit institutionnel de couverture sociale. L'appartenance à une association est considérée comme une offre de protection sociale alternative par le biais des relations d'entraide qui s'y développent. Elle crée des liens forts entre les membres et les renforce davantage. Cette vie associative offre aux travailleurs-adhérents une nouvelle forme de sécurité sociale.

Au-delà de l'aspect solidarité qui sous-tend leur appartenance, les associations représentent des cadres de socialisation. En effet, l'avantage de l'appartenance à ces réseaux partage des savoirs, des expériences et l'apprentissage de certaine règle de vie sociale et professionnelle. La participation régulière des activités telles que les réunions, les visites et les évènements particuliers est une occasion de *« se frotter aux anciens »*. Les rapports qui se créent au contact des « aînés » leur permet de s'approprier des rouages et des mécanismes de « réussite » dans le secteur d'activités qui est les leurs c'est-à-dire le secteur des transports routier urbain. En d'autre termes, le rapprochement avec les anciens a l'avantage de leur « *apprendre comment travailler pour être heureux demain dans la vieillesse* ». *(Chauffeur et propriétaire de « woro woro », 58 ans, entretien réalisé le 23 juillet 2020 à Adjamé gare « woro woro » saint Michel).*

En définitive, la capacité d'appartenance à un réseau social (groupement d'ami, de voisinage, association communautaire ou professionnelle, etc.) est une ressource sociale (capital social) des travailleurs informels. L'interaction dans ces réseaux sociaux produit pour ces travailleurs informels, un espace social de protection et de solidarité.

2.3.   Stratégie d'ajustement aux risques liés au processus du vieillissement des travailleurs informels
2.3.1. Stratégie des travailleurs informels basée sur l'existence de solidarité entre les générations dans la famille

Selon les travailleurs informels interrogés, il existe une solidarité entre les générations dans la famille. Les plus jeunes soutiennent les aînés et vis-versa. C'est une alternative de prévoyance sociale. La solidarité telle qu'elle existait jadis est quelque peu impactée par des mutations sociales survenues du fait de la modernité comme le soutient S. Pin (2005). Cependant

dans le secteur des transports urbains, elle demeure un instrument efficace en termes d'adaptation et de résistance au risque du vieillissement pathologique ou de la déprise².

2.3.2. Offre d'emploi par transmission familiale : une alternative pour les travailleurs informels en vue de préparer leurs vieillissements en activité

Selon les enquêtés, les aînés ayant une activité dans le secteur des transports urbains (propriétaire de véhicule de transports, responsable d'une organisation syndicale, chauffeurs, chefs de gares, etc.) identifient généralement dans la lignée familiale quelques jeunes en vue de leur donner une formation sur le tas par le mécanisme d'apprentissage informel. Ces nouveaux apprentis apprennent aux côtés des aînés dans le métier. Cette formation sur le tas vise fondamentalement à assurer la relève en vue de pérenniser l'activité familiale. Au fur et à mesure de cet apprentissage, les bénéficiaires acquièrent de nouvelles aptitudes professionnelles dans le seul but d'occuper cette responsabilité plus tard. Par-delà, ils assimilent à la fois, par l'appropriation des mécanismes du métier que par la maitrise des rouages du secteur des transports urbains. Dans la mesure où les employés (actifs) d'aujourd'hui deviennent un secours pour les vieillards de demain. Aussi, le choix stratégique basé sur l'offre d'emploi à un proche, a-t-il l'avantage de réduire le temps d'activité des travailleurs âgés. Car le travailleur qui a pris la précaution de transmettre son savoir-faire à une jeune génération se décharge d'une lourde responsabilité quand *« il sera fatigué à cause de l'âge »* car ce sont « *ses petits formés* » qui vont désormais assurer la continuité de l'activité. C'est une alternative pour un vieillissement actif. *(Chauffeur et propriétaire de véhicule de transport, 42 ans, entretien réalisé le 15 août 2020 à Adjamé gare Djeni Kobina*)

2.3.3. Investissement dans l'éducation des enfants : un mécanisme de prévention des risques liés au vieillissement des travailleurs informels

L'éducation des enfants a deux (2) fondements : l'éducation à travers la transmission des valeurs sociales et culturelles par le canal de l'institution éducative familiale d'une part, et l'investissement basé sur l'instruction et la formation des enfants par les structures de formation scolaire et professionnelle, d'autre part.

2.3.3.1. Education de base assurée par la famille

Pour les acteurs des transports interrogés, l'investissement dans l'éducation des enfants est une mesure de sécurité sociale. En effet, il est important que les us et coutumes soient inculqués aux enfants. Ainsi,

l'éducation est convoquée pour faciliter la transmission des valeurs culturelles notamment l'altruiste et la solidarité aux enfants dès le bas-âge. Cette éducation va conduire à une reproduction des valeurs familiales dans une société de plus en plus urbanisée. En effet, le référent éducatif dans notre contemporanéité est guidé par des canaux d'informations publics notamment les medias, les réseaux sociaux, les sites web, etc.

2.3.3.2. Investissement dans la formation des enfants

Les travailleurs interrogés estiment que *« mettre son enfant à l'école ou lui permettre d'apprendre un métier est une stratégie de préparer sa vieillesse »*. (*Chauffeur et propriétaire, 52 ans, entretien réalisé le 21 juillet 2020 à Adjamé gare Texaco*). En fait, il ressort de cette déclaration que la scolarisation des enfants est perçue comme une stratégie d'ajustement face à la perte d'autonomie physique et financière associée au processus de leur vieillissement. En effet, la formation est facteur d'insertion professionnelle des enfants qui sont des potentiels aidants familiaux. En d'autres termes, la formation diplômante est le sésame pour accéder à un emploi décent. Du coup, face aux défis du vieillissement, l'investissement dans la formation de ses enfants représente pour les travailleurs informels une prévoyance sociale. La vocation du système éducatif est de former en vue de conférer des habilités aux individus dès leur jeune âge. Par cette habilité acquise au cours de la formation, l'école ouvre l'accès à l'employabilité des futurs aidants dans les entreprises formelles (C. Trottier, 2001).

En définitive, l'investissement dans l'éducation des enfants est une stratégie d'ajustement en termes de prévention des risques liés au processus du vieillissement. Selon eux, il est constaté dans la société contemporaine africaine que le vieux pauvre et malade est représenté comme « *un sorcier* ». Par conséquent, ils s'exposent au rejet dans sa communauté.

Pour faire face à ce « désastre social » dont les ainés en sont victimes, le travailleur prend la précaution d'investir dans l'éducation de ses enfants. Car de tel investissement a pour but de préparer et d'accompagner les individus dans leur parcours de vie. (B.Palier et alii, 2017).

2.3.4. Changement d'activités en vue d'améliorer leur condition de vie

Pour les travailleurs informels, les activités dans le domaine des transports routiers se déroulent dans des conditions très risquées. Ces emplois sont très instables. En effet, il n'y a aucune garantie de sécurité sociale. Parce que les risques de pertes d'emploi et de chômages s'effilochent permanemment. Face à cette éventuelle insécurité se profilant à l'horizon, ils adoptent des stratégies de contournement. Il s'agit notamment de :
- trouver un emploi dans une entreprise formelle avec possibilité d'être embauché ;

- trouver des moyens pour avoir son propre véhicule de transport avec l'avantage d'être propriétaire « djoulatchê »
- trouver des possibilités pour l'aventure hors du pays ou l'immigration
- investir dans d'autres domaines autres que le transport.

Cette stratégie des travailleurs visent à développer des activités susceptibles de les rendre autonome d'une activité peu garantie.

2.4. Discussion des résultats

Le vieillissement est perçu différemment selon les sociétés et les époques. Dans le cadre de ce présent travail, les perceptions globales des travailleurs relativement au processus du vieillissement sont « négatives ». En effet, plusieurs auteurs (B. Ennuyer, 2020 ; M. Marchand, 2008) ont relevé cet aspect dans leurs écrits surtout dans les travaux du secteur informel. Cependant comme le dit V. Caredec (2009), le vieillissement est appréhendé en termes de « construction sociale ». Ainsi, la perception « négative » du processus du vieillissement n'est pas figée. Elle peut être corrélée positivement en fonction de l'amélioration des conditions de vie du travailleur informel.

Face au déficit institutionnel de protection sociale dans le secteur des transports urbains, les travailleurs mobilisent des ressources d'ajustement. En effet, pour M.Anaut (2009, les travailleurs mobilisent de ressources externes disponibles dans l'environnement social et familial. Tout en abordant le sujet sur le même angle, les auteurs M. Gangbè et F. Ducharme (2006), arguent que les individus et groupes sociaux peuvent compter sur ces ressources pour faire face aux circonstances difficiles de la vie.

Quant aux stratégies d'ajustement dans le cadre de ce travail, elles sont basées d'une part sur « l'investissement social » et l'amélioration des condition de travail (F-X. Merrien, 2013, A. M. Guiellemard, 2004). Toutefois, il est fréquent de constater des travailleurs se maintenir dans l'activité en dépit de l'âge et des conditions pénible de travail parce qu'ils n'ont pas de garantie sociale (M. Guiellemard, op-cit). La plus-value dans ce volet est que la transmission des valeurs culturelles et la conscience d'investissement éducatif dans un secteur où les travailleurs sont moins alphabétisés, dénotent un fait dynamisant.

Conclusion

De cette étude, il ressort que les travailleurs informels sont avertis du risque de vieillissement pathologique et dépendant auquel ils sont exposés. Toutefois, leurs conditions de travail ne sont pas favorables à une couverture de protection sociale formelle et institutionnelle. Pour cela, dans une perspective de résilience, ils développent plusieurs pratiques de protection

sociale notamment informelles comme stratégies d'ajustement au déficit de couverture institutionnelle. En effet, ces stratégies sont basées exclusivement sur l'investissement social (éducation primaire et secondaire) dans l'objectif d'une éventuelle prévention du vieillissement pathologique et dépendant. L'ensemble de ces pratiques constitue pour les travailleurs, des dispositions pour se maintenir en activité et en bonne santé en dépit de l'avancement en âge.

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Macro-Economic, Corporate Governance Factors and the Financial Performance of Listed Firms on Nairobi Securities Exchange

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Abstract

The main goal of many listed firms at NSE is to grow and sustain growth in financial performance. Internal factors and external factors are viewed as critical drivers for the financial performance of listed firms on NSE. This paper focuses on investigating the influence of macro-economics and corporate governance factors on the financial performance of listed firms at NSE. The review of earlier studies in this field has shown lack of consensus on the effect of corporate governance and macro-economic factors on the financial performance of listed firms at NSE, thus the need for this study. The population of this study comprised of all the sixty-three (63) listed firms at NSE in Kenya and licensed by the Central Bank of Kenya (CBK) as at December 2017. The study used Panel data covering a period of seven (7) years from 2011 to 2017. The data was collected from, KNBS, CBK published financial annual supervisory reports, and published annual financial reports for the fifty-five (55) firms which were consistently listed at NSE and whose data was available. The study used correlation and multiple linear regression to analyze the data. The study established that the macro-economic and corporate governance factors accounted for 99.5% of the financial performance of listed firms in Kenya ($R^2 = 0.995$). Additionally, the study established that the macro-economic factors had a negative significant

influence on the financial performance of listed firms at NSE, which is specified by a strong statistically significant negative relationship ($r = -0.495$, $p < 0.05$). Comparatively, the findings of the study revealed that corporate governance factors had a significant positive influence on the financial performance of listed firms at NSE (specified by $r = 0.551$, $p < 0.05$). In conclusion, macro-economic and corporate governance factors have a statistically significant influence on the financial performance of listed firms at NSE. The study recommends further research on other macro-economic and corporate governance factors not included in the study to determine their influence on the financial performance of listed firms at NSE. Some of the macro-economic factors of interest for future research include but not limited to the level of unemployment in the economy, the level of stock market, and money supply. On the other hand, corporate governance factors include the board composition in terms of age, ethnicity, race, profession, experience, frequency of holding board meetings, and number of board committee.

Keywords: Macro-Economic, Corporate Governance, Financial Performance

Introduction

Globally, securities markets have been the yard sticks for measuring nations' fiscal health as the markets show the general treads in the domestic economies. These markets also act as intermediaries for large and small investors seeking to profit by investing their savings. According to Stock Trading Infocentre (2018), securities markets play an important role by providing specialized financial services ranging from mobilizing large amount of funds for investment, creating diverse investment opportunities for investors, creating a platform for profit sharing, and enabling governments to raise capital for development projects. Securities markets have also acted as a catalyst for improved corporate governance due to stringent regulatory requirements for firms to be listed.

Since the performance of securities market can be regarded as the sum total performance of all the firms listed in that market as is measured using stock indexes (Hosseini, 2011; Okonkwo, 2014), it is therefore important to know the factors that influence the financial performance of the firms listed in the market. In spite of the role played by securities market in the stability of the Kenyan economy, little is known on how both macro-economic (external) and corporate governance (internal) factors influence the financial performance of listed firms on the Nairobi Securities Exchange (NSE). Profit is the essential pre-requisite for the survival, growth, and competitiveness of the listed firms. Nonetheless, investments by business firms are exposed to both firm and industry specific factors which may influence their financial performance (Murungi, 2014). The macro-economic factors affect the

economy as a whole, rather than individual sectors (Murungi, 2014). In contrast, corporate governance factors like board size and board composition are specific and unique for each firm.

Earlier studies have either focused on how macro-economic or corporate governance factors are related to financial performance. Mutugi (2012) examined the effect of exchange rate, lending interest rates, inflation rate, and GDP growth rate on the financial performance of life assurance firms. Wabita (2013) examined how growth, leverage, liquidity, and amount of tangible assets of the firm affect its financial performance. Opanga (2013) studied how board size, number of resolutions, number of committees, and the frequency of holding meetings relate to the return on assets (ROA) of registered insurance firms. Murungi (2014) investigated the relationship between interest rate, inflation rate, exchange rate, money supply, GDP, claim ratio, expense ratio, size of the asset, and ROA of insurance firms in Kenya. Mwangi and Murigu (2015) investigated the determinants of financial performance in general insurance firms in Kenya. Kemuma (2015) evaluated the impact of foreign exchange rate volatility on ROA. Kibet (2016) examined the relationship between Macro-economic factors and the financial performance of agribusiness firms listed at the NSE.

Most of the existing studies in Kenya have generally used Return on Assets (ROA) or Return on Equity (ROE) to measure performance (Illo, 2012; Opanga, 2013; Wanyama & Olwenyi, 2013; Murungi, 2014; Mwangi & Murigu, 2015) with few using other performance parameters like stock market returns (Olweny & Omondi, 2011), share prices (Muchiri, 2012), and annual profits (Osoro & Ogeto, 2012). This study is however different in that it examined how factors of both macro-economic and corporate governance influenced the financial performance of listed firms on NSE as measured by Return on Assets (ROA).

Statement of the Problem

Globally, the financial performance of securities markets has been used to gauge the nations' fiscal health. In Africa, the stock markets have been under-developed and therefore face a number of challenges including inefficiencies and lack of real-time market information, manual trading and undeveloped settlement infrastructure, fragmented financial services sector, high transaction costs among others as observed in a presentation by Benimadhu (2013). The adoption of technology on the NSE platform has however facilitated internet trading, improved integrity, and greater access to reliable first-hand information about the securities market trading in Kenya.

The Kenyan government on the other hand has been keen in enhancing trading at NSE by promoting fairness and ensuring that investors on NSE are protected from unethical activities like development of pyramid schemes, late-

day trading, trading based on false information or insider information, and pump-and-dump of shares among other illegal activities. The government has also put in place structures to protect minority shareholders from exploitation (Mocha, 2014). It has been able to achieve this through the establishment of Capital Market Authority (CMA) using Act of Parliament, Cap 485 A, under The National Treasury and Planning which came into being in 1989. On its website, www.cma.or.ke, CMA is a regulating body charged with the following responsibilities: *Licensing and supervising all the capital market intermediaries, Ensuring proper conduct of all licensed persons and market institutions, Regulating the issuance of the capital market products (bonds, shares etc.), Promoting market development through research on new products and institutions, Promoting investor education and public awareness, Protecting investors' interest and guiding on the composition corporate Boards.* Nairobi Security Exchange performance-based research is therefore very important in assisting the government set policies and investors in making informed decisions. Available studies on the security markets financial performance as influenced by macro-economic and corporate governance factors have in contrary produced conflicting findings that makes it difficult for users to make informed decisions.

For instance, Illo (2012) found that interest rates influenced financial performance positively but Osoro and Ogeto (2012) found a negative relationship. Muchiri (2012) found a positive relationship between inflation and financial performance, while Issahaku et al. (2013) found a negative relationship. Rao (2016) found a positive relationship between exchange rate and financial performance, while Olweny (2011) found a negative relationship. Gul et al. (2011) found a positive relationship between GDP and financial performance, while Osoro and Ogeto (2012) found no relationship. Nthama (2010) and Yasser et al. (2011) found a positive relationship between board size and financial performance, while Wanyama (2013) found a negative relationship. Firm financial performance as earlier studies confirm is influenced by both internal and external factors but many earlier research work have studied these factors separately, perhaps, leading to these notable inconsistencies in the findings. This study, therefore, sought to establish whether the macro-economic factors and corporate governance factors jointly influence the financial performance of listed firms on NSE as measured using return on assets (ROA).

Objective of the Study

The main objective of this study is to determine the joint influence of macro-economic and corporate governance factors on the financial performance of listed firms on NSE.

Research Hypothesis

Ho. Macro-economic and corporate governance factors have no joint significant influence on the financial performance of listed firms on NSE.

Significance of the Study

Earlier studies have focused on either the relationship between macro-economic factors and financial performance or between corporate governance factors and financial performance. With the new perspective of combining these factors to assess their influence on the financial performance of listed firms in Kenya, the findings of this study will play a key role in opening a new angle in making informed decisions concerning investments in NSE. The corporate directors and executives of the listed firms can make use of the findings of this study to strengthen their competitive edge in the market. NSE will use the findings in setting and reviewing requirements for the current and future listing of firms in the market while CMA can be used in regulating and monitoring the performance of listed firms. The government through the relevant agencies will also use the findings in planning and policy development to bring about equity and fairness in the market.

Consequently, the owners and managers of these firms have a major interest in the better performance of their organizations. They will make use of the findings of this study in understanding how these factors influence their performance and, therefore, make right decisions to take advantage of positive and mitigate negative effects. Investors and policy holders are more concerned about the current and future returns of their investments and therefore will need the data in deciding how and where to secure their investments. Finally, the research findings and recommendations will enrich the available literature on developing countries like Kenya.

Literature Review

This study developed its argument from three theories, namely; Random Walk Hypothesis, Agency theory, and Stakeholders theory.

The Macro-economic Factors

This study adopted the four macro-economic factors used in the Kenya Economic Outlook 2016 report by Deloitte, which are Gross domestic product, interest rate, inflation, and exchange rate where their data is readily available. Hence, the researcher believes they carry more weight in influencing the financial performance of firms listed on Kenyan stock market, while all other factors are kept constant. Gross Domestic Product (GDP) is a measure of the country's overall economic performance. According to Singh (1993), GDP is the total market value of the goods or services produced by the economy of a

country as well as the total income earned by the people living in that country. A rise in GDP would be an indicator of improved financial performance leading to improved market conditions while a decline in GDP portrays worsening economic conditions that may lead to poor financial performance. This study measured GDP as the annual percentage growth rate as provided by Kenya National Bureau of Statistics (KNBS).

Interest rate is the price a borrower pays for the use of money they borrow from a lender/financial institutions or fee paid on borrowed assets (Crowley, 2007; Ng'etich, 2011). While interest rates represent an income to the lender, it is a cost to the borrower. Interest rate influences the overall level of economic activity, flow of goods and services, and financial assets within the economy (Saunders, 1999). Thus, this means that high lending rates may result into depressed demand for credit especially for businesses. Government activities and policies like the level of borrowing and control of inflation rates would have a direct impact on the level of interest rates in the economy. This study employed commercial bank average lending rates as provided by CBK.

Inflation is the persistent increase in general price levels in an economy over time (Jhingan, 2002). According to Akers (2013), inflation rate measures changes in the average price level based on a price index. The most commonly known index is the Consumer Price Index (CPI). CPI measures the average retail prices that consumers pay for goods and services. Low or medium-level inflation has a positive effect on the business sector in that it acts as an incentive to production. However, high inflation rate may reduce the amount of disposable income for households and businesses which may lead to decreased economic activities. Annual average CPI was used for this study.

The exchange rate is the value of two currencies relative to each other. In the Kenyan market, these rates reflects the average buying and selling rates of the major participants in the foreign exchange market at the open of trade every day. They are thus good indicators for any interested party on the value of the shilling on any particular day. Martin and Mauer (2003) indicates that exposure of foreign exchange risk to a firm can affect its valuation and profitability. Listed firms conducting businesses in foreign countries should consider the application of suitable hedging strategies like swaps and options to ease the adverse effects of currency movements (EIOPA, 2015; Mbogo, 2015). This study used US Dollar- Kenya shilling mean exchange rate for each year.

Macro-economic factors affecting an economy are however many and not limited to the four factors considered in this study. As observed by Zarnowitz (1992), how the economy moves over time depends on its structures, institutions, and policies, all of which are subject to large historical changes. The area of macro-economic is wide and cannot be exhaustively

covered in this study. Some other major macro-economic factors not studied and held constant as per this study are hereby highlighted.

Unemployment rate is that fraction of the workforce that is jobless. For a person to be considered unemployed, the person must want to work and be actively looking for that job of interest. Unemployment rate is equal to the number of unemployed people divided by the workforce. The workforce is the total number of those who are employed and those who are unemployed. The unemployment rate is the best indicator of how well the economy is doing relative to its productive potential. Indeed, Congressional Research Service (CRS) report (2016) refers to unemployment rate as a vital measure of economic performance. Unemployment rate keeps on changing given the existing economic conditions. For a healthy economy, there should be some level of unemployment where firms can draw workforce as and when required. This ensured the firm has the right caliber of staff and at a considerable cost.

Another economic indicator is the level of stock markets. According to Arestis (2001), various stock market development indicators have been found to explain part of the variations in economic growth rates across countries, in some cases exceeding the banking sector. The level of stock markets is measured using indexes which investors use to track the performance of the stock market. In Kenyan securities market, a 20 share index and all share index are among the indexes used to assess the performance of NSE (Osoro, 2013). The NSE 20 share index is a price weight index calculated as a mean of the shares of 20 public listed firms. The 20 firms are selected based on a weighted market performance during the period under review to represent the entire stock market. Due to the shortcoming of the Nairobi 20 share index, NSE introduced Nairobi All Share Index (NASI) in February 2008 to complement NSE 20 share index (Osoro, 2013). A high value index is an indicator of a bullish market which means that investors expect economic growth to be rapid, profits to be high and unemployment rate to be low, while low value indicates a gloomy future economic performance.

Money supply according to Lumen (2022) is the total value of monetary assets available in an economy at a specific time. Money supply usually includes currency in circulation and demand deposits. The government will regulate the level of money supply in the economy through sound monetary policy that may involve regulating banks reserve deposits, controlling interest rates, level of government internal borrowing, printing money among other means in order to ensure money supply is consistent with growth and price objectives (Prableen, 2021). The Central Bank of Kenya on its website, www.centralbank.go.ke, records and publishes money supply data on a monthly basis under monetary and finance statistics. This data is very important to both public and private sector because changes in the money

supply is bound to affect the price level, inflation, exchange rate, and the business cycle.

In light of the fact that it may not be practically possible to exhaustively study all the macro-economic factors in one study, this study focuses on four main macro-economic factors as derived from Kenya Economic Outlook 2016 report by Deloitte. The data on these factors was also found to be readily available and the researcher believes they carry more weight in influencing the financial performance of Kenyan market. However, further studies were recommended to assess how other macro-economic factors not considered in this study affect financial performance in Kenya.

Corporate Governance Factors

Corporate governance is a framework of rules, relationships, systems, and processes within and by which authority is exercised and controlled within corporations and includes mechanisms by which the firms and those who control them are held accountable (Council, 2007). Okiro (2015) observed that sound corporate governance mechanisms helps in giving assurance to investors that, beyond receiving adequate returns, they have higher chances of getting back their investments. The researcher also concluded that the adoption of corporate principles safeguards against corruption and mismanagement, promotes transparency in economic life, and attracts more investment.

Corporate governance should go beyond the economic agenda of the firm but also incorporate social and environmental considerations in strategy formulation (Lekone, 2014). The Capital Markets Act (2002), Cap. 485A, states that one of the principles of good corporate governance practices is that every public listed company should be headed by an effective board that offers strategic guidance, leads and controls the company, and is accountable to the shareholders. A corporate board is made up of individuals who are elected or appointed by shareholders and given powers, duties, and responsibilities to act on their behalf to steer the firm forward both economically and socially. Kakanda, Salim and Chandren (2017) observed that a good corporate governance is vital in obtaining market confidence for long-term international investment.

The biggest question today is whether there is an optimal board size. Some earlier studies have found a negative relationship between board size and firm's performance implying that as the number of board members increase, its effectiveness diminishes (Yermack, 1996; Guest, 2009; Mak & Kusnadi, 2005). Coles et al. (2008) concluded that an optimal board size will depend on the size or complexity of the firm. Board size in this study is the total number of sitting board members appointed or nominated from within or

outside the firm. The data was sourced from listed firms' published annual reports.

Appointment of board of directors should consider people with different professional backgrounds, levels of independence, age, gender, and ethnicity (Walt & Ingley, 2003). An independent director plays a critical role by providing expertise and in monitoring and oversight role (Zahra & Pearce, 1989; Markarian & Parbonetti, 2007). Board independence in this study was measured by the percentage of independent directors in the board as indicated in firms' published annual reports.

Gender diversity has also attracted the attention of many countries prompting numerous legislations to ensure inclusion of women in management of organizations. Article 27 of the Constitution of Kenya (2010), Equality and freedom from discrimination, clause 8, provides that not more than two-thirds of the members of elective or appointive bodies shall be of the same gender. This provision which falls under basic human rights is aimed at facilitating gender mainstreaming in national development. This study will assess applicability of this constitutional requirement in appointment of board members of listed firms on NSE and whether women in the board have an impact in the financial performance of these firms. Gender diversity in this study was measured by the percentage of women in the board. The data was sourced from firms' published annual reports.

Firm size, according to Murungi (2014), may influence financial performance. Large firms are able to utilize economies of scale making them more competitive over small firms. They also enjoy goodwill from customers which they have gained over time. Earlier studies have not been able to clearly link size of the firm to board size as observed by Eisenberg (1998) that factors that determine the choice of board size in small firms may differ from those that is influencing board size in large firms. Since some of the listed firms in NSE are young and small while others are mature and large, size of the firm as measured by total assets was also considered in this study. The data was sourced from firms' published annual reports.

This study focused on four (4) main elements of corporate governance which are board size, board independence, gender diversity, and firm size. The factors were arrived at through purposeful sampling where the researcher considered them as having more weight in influencing financial performance. Their data was also easily available in the annual financial reports presented by the firms. There are however other elements of corporate governance which were held constant as per this study. Thus, this included the board composition in terms of age, ethnicity, race, profession, experience, frequency of holding board meetings, and number of board committee. Further studies were also recommended.

Financial Performance Factors

Kibet (2016) opines that firm's financial performance is determined by profitability, growth of dividend over time, market share, size, return on equity, turnover in sales and asset base, and growth. However, the primary objective of shareholders in a business is wealth maximization. Shareholders are concerned with current and future earnings, dividend policy, and relative risk of their investments which are all driven by financial performance. Their concerns are therefore whether they are making profits, whether their continued existence is guaranteed, and whether their business is growing. Many studies in Kenya like Wachudi and Mboya (2012), Wanyama and Olwenyi (2013), Wetukha (2013), and Ongore et al. (2015) focusing on related topics in Kenya have used Return on Assets (ROA) to measure financial performance. Since ROA has been generally used and accepted as a good measure of financial performance, this study also adopted it in measuring financial performance.

Return on Assets (ROA) is a good indicator of organization's profitability in relation to the assets that have been applied to generate that profit. In this case, ROA is arrived at by dividing net income by average total assets. Return on Assets show how efficient the organization is in utilizing its invested assets profitably. Unlike other variables, ROA takes into consideration the organization debt. Net income used in calculating ROA is the balance of sales after taking care of cost of sales, selling costs, administrative and operating expenses, depreciation, interest, taxes among other expenses. An organization with a higher ROA is considered more efficient because it is able to generate more income from fewer investments (Marshall Hargrave, 2021). Using ROA to compare all the firms in the NSE also has its own shortfall because all the firms do not require the same application of assets. Some organizations like those in manufacturing industry are capital intensive as compared to service industry like banking sector. However, in general, ROA is a good variable in the assessment of organizations' performance.

Nairobi Securities Exchange

In Africa, securities markets dates as far back as 19th Century with South African Johannesburg Stock Exchange Limited being the oldest existing stocks market. Nairobi Securities Exchange Limited (NSE) in Kenya was established in 1954 as Nairobi Stock Exchange. NSE is tasked with overseeing the listing, delisting, and regulation of trading of financial securities in Kenya (Barasa, 2014). According to NSE website, www.nse.co.ke, there are sixty-three (63) firms listed under thirteen sectors of the Kenyan economy as of 31st December 2017, with automobiles and accessories, investment services, telecommunication and technology, real estate investment trust and exchange

traded fund sectors each having a single listed firm under them while construction and allied, energy and petroleum and investment sectors each having five firms each. Insurance sector and Agricultural sector have six firms each listed under them. Manufacturing and allied sector has eight firms, eleven firms in banking sector, and commercial and services sector being the highly listed with twelve firms. NSE is regulated by Capital Market Authority of Kenya.

Research Methodology

The study utilized causal research design aimed at determining the influence of selected macro-economic factors and corporate governance factors on the financial performance of listed firms in Kenya. The research design was adopted because this research postulate that changes in the selected independent variable (macro-economic factors and corporate governance variables) were responsible for the observed changes in the dependent variable (financial performance) as measured using ROA. This is with all other variables held constant.

The population of the study was sixty-three (63) firms listed under the 13 sectors of the Kenyan economy at the NSE as of 31st December, 2017. However, the following 7 listed firms had insufficient data of interest because they were listed at NSE after 2011: Atlas Development and Support Services, Deacons (East Africa), Kurwitu Ventures, Nairobi Securities Exchange Ltd, Flame Tree Group Holdings Ltd, Stanlib Fahari I-REIT, and New Gold Issuer (RP) Ltd. The sort data for the seven years of study was therefore not available to support their study. Umeme Ltd on the other hand was also excluded from the study because its financial reports, unlike the other listed firms, were presented in Ugandan shillings and is therefore not comparable. This left a balance of fifty-five (55) listed firms to be studied. Target population for this study is therefore made up of the fifty-five (55) listed firms that were consistently listed for a period of seven (7) years from 2011 to 2017, and data was available and comparable thus increasing the validity of the results.

Since the larger the sample size, the more accurate the results are likely to be (Kothari, 2008), this study adopted census survey by focusing on the all the fifty-five (55) firms that were consistently listed at NSE for the entire seven (7) year period of the study from 2011 to 2017. The research used secondary data where data on macro-economic, corporate governance and financial performance factors were collected. Data on both corporate governance and financial performance was collected from the published annual reports obtained from the firms' websites, NSE handbooks or CMA website, while data on macro-economic factors were obtained from CBK and KNBS databases.

The data was first tabulated in excel sheet. Descriptive statistics were conducted to get the basic characteristics of the data in terms of mean, minimum, maximum, standard deviation, and probability distribution and were presented in tables and graphs. Multiple regression analysis was used to test the hypotheses of the study at significant level of a= 0.05. Statistical Package for Social Sciences (SPSS) software version 26 was used for statistical analysis based on the research objectives. The following regression equations were used to address the research objective:

$$Y = \beta_0 + \beta_1 INT + \beta_2 INF + \beta_3 EXR + \beta_4 GDP + \varepsilon \text{----------------------------------} 1$$

Where: Y = Financial performance (ROA), β_0 = Constant level of performance

β_1-β_4 = Coefficients of the explanatory variables for Macro-economic factors

INT = Annual average lending interest rate, INF = Inflation rate

EXR = Annual exchange rate, GDP = Gross domestic product growth

ε = Error term

$$Y = \beta_0 + \beta_1 BDS + \beta_2 GED + \beta_3 BDI + \beta_4 FMS + \varepsilon \text{----------------------------------} 2$$

Where: Y = Financial performance (ROA), β_0 = Constant level of performance

β_1-β_4 = Coefficients of the explanatory variables for corporate governance

BDS = Board size, GED = Gender diversity, BDI = Board independence

FMS = Firm size, ε = Error term

$$Y = \beta_0 + \beta_1 INT + \beta_2 INF + \beta_3 EXR + \beta_4 GDP + \beta_5 BDS + \beta_6 GED + \beta_7 BDI + \beta_8 FMS + \varepsilon \text{--} 3$$

Where: Y = Financial performance (ROA), β_0 = Constant level of performance

β_1-β_8 = Coefficients of the explanatory variables for macro-economic and corporate governance, INT = Annual average lending interest rate

INF = Inflation rate, EXR = Annual exchange rate

GDP = Gross domestic product growth, BDS = Board size, GED =Gender diversity

BDI = Board independence, FMS = Firm size, ε = Error term

Results and Discussion
Descriptive Statistics
Macro-economic Factors

The following macro-economic factors were considered in the study: Inflation rate, interest rate, GDP, and exchange rate. Table 1 shows the overall descriptive statistical results of the respective macro-economic factors for the 55 listed firms at NSE, Kenya, as at 31st December 2017 from 2011.

Table 1. Macro-economic Factors Overall Descriptive Statistics Results as at 31st December 2017

	N	Min	Max	Mean	Std. E	Std. D
Exchange rate	55	84.520	103.250	92.939	2.956	7.820
Gross Domestic Product	55	0.030	0.050	0.037	0.004	0.010
Inflation rate	55	5.700	14.000	8.129	1.082	2.863
Interest rate	55	13.670	19.650	16.419	0.703	1.860

Based on the descriptive results of the study on Table 1, the average value of exchange rate is 92.94 with minimum and maximum exchange rates being 84.52 and 103.25 respectively. The average value of GDP is 0.037 with minimum and maximum GDP being 0.03 and 0.05 respectively. The average inflation rate is 8.129 with minimum and maximum inflation rates being 5.7 and 14.00 respectively. The annual average commercial banks' lending interest rate is 16.419 with minimum and maximum interest rates being 13.67 and 19.65 respectively. Table 2 shows macro-economic factors year by year mean of the 55 listed firms at NSE, Kenya, as at 31st December 2017.

Table 2. Macro-economics Factors Year by Year Mean as at 31st December 2017

Year\Variable	2011	2012	2013	2014	2015	2016	2017
Inflation rate	14.0	9.40	5.70	6.90	6.60	6.30	8.00
Interest rate	15.05	19.65	17.31	16.51	16.1	16.58	13.67
GDP	41.95	50.33	55.1	61.45	64	70.88	74.94
Exchange rate	88.87	84.52	86.13	87.92	98.6	101.2	103.25

Source: CBK annual supervisory reports, 2011-2017

The results in Table 2 indicate the average mean per year for the selected macro-economic factors (Inflation rate, Interest rate, GDP and Exchange rate) from the year 2011 to 2017.

Corporate Governance Factors

The following corporate governance factors were considered in the study: Board independence, Board size, Firm size in Ksh trillions, and Gender diversity. Table 3 shows corporate governance factors overall descriptive statistics results for 55 listed firms at NSE, Kenya, from 2011 to 2017.

Table 3. Corporate Governance Factors Overall Descriptive Statistics Results

	N	Min	Max	Mean	Std. D
Board Independence	55	0.280	0.320	0.303	0.013
Board Size	55	0.030	0.310	0.243	0.096
Firm Size in Ksh trillion	55	0.020	0.060	0.036	0.015
Gender diversity	55	0.150	0.170	0.157	0.010

The descriptive results on Table 3 show the average board independence as 0.303 with minimum and maximum board independence being 0.28 and 0.32 respectively. The average value of board size is 0.243 with minimum and maximum board size being 0.03 and 0.31 respectively. The average firm size was 0.036 with minimum and maximum firm size being 0.02 and 0.06 correspondingly. The average gender diversity is 0.157 with minimum and maximum gender diversity being 0.15 and 0.17 respectively. Table 4 shows corporate governance factors year by year mean for 55 listed firms at NSE, Kenya, as at 31st December 2017.

Table 4. Corporate Governance Factors Year by Year Mean as at 31st December 2017

Year\Variable	2011	2012	2013	2014	2015	2016	2017
Board Independence (BDI)	0.32	0.28	0.30	0.31	0.31	0.30	0.30
Board Size (BDS)	8.15	8.53	8.60	8.58	8.62	8.40	8.22
Firm Size (FMS) in Ksh Trillion	0.02	0.02	0.04	0.05	0.06	0.03	0.03
Gender diversity (GED)	0.15	0.15	0.15	0.15	0.16	0.17	0.17

The results in Table 4 show the average mean per year for selected corporate governance factors (Board independence, board size, firm size and gender diversity) from the year 2011 to 2017.

Financial Performance

The study used ROA to measure the financial performance of listed firms at NSE. Descriptive statistics results for financial performance (ROA) of fifty-five (55) listed firms at NSE, Kenya, as at 31st December 2017 from 2011 were presented.

Financial Performance Specific Factor

Table 5. Financial Performance.

	N	Min	Max	Mean	Std. D
Financial Performance	55	0.06	0.26	0.14	0.07

The descriptive results on Table 5 indicate that the average financial performance of the listed firms is 0.14 with minimum and maximum financial performance being 0.06 and 0.26 respectively. This suggests that the average

performance in financial terms of listed firms is 14%. Table 6 shows financial performance (ROA) year by year mean results for 55 listed firms at NSE, Kenya, as at 31st December 2017 from 2011.

Table 6. Financial Performance Year by Year Mean as at 31st December 2017

Year\Variable	2011	2012	2013	2014	2015	2016	2017
Financial performance	0.06	0.08	0.18	0.26	0.16	0.11	0.10

Source: CBK annual supervisory reports, 2011-2017

The results in Table 6 designate the average mean of financial performance (ROA) per year from the year 2011 to 2017.

Inferential Statistics

The study used inferential statistics (Pearson correlation and multiple linear regression) to analyze the research objectives.

Correlation Matrix

The main objective of the study was to determine the effect of macro-economic and corporate governance factors on the financial performance of listed firms at NSE. The study used Pearson Correlation analysis to establish the kind of relationship that exists between the variables (macro-economic factors, corporate governance factors and financial performance) of listed firms at NSE. Table 7 shows the Pearson correlation analysis of the relationship between corporate governance factors, macro-economic factors, and financial performance of listed firms at NSE.

Table 7. Correlation Matrix

		Board Independence	Board Size	Firm Size	Gender diversity	Gross Domestic Product	Inflation rate	Interest rate	Exchange rate	Macroeconomics	Corporate governance	Financial performance
Board Independence	Pearson Correlation	1	-.147	.339	-.060	-.479	.299	-.669	.159	.135	-.234	.208
	Sig. (2-tailed)		.753	.457	.898	.277	.515	.100	.734	.773	.614	.654
	N	7	7	7	7	7	7	7	7	7	7	7
Board Size	Pearson Correlation	-.147	1	-.578	-.118	.212	.141	.012	-.288	-.290	-.117	.005
	Sig. (2-tailed)	.753		.174	.802	.648	.763	.979	.531	.528	.803	.992
	N	7	7	7	7	7	7	7	7	7	7	7
Firm Size	Pearson Correlation	.339	-.578	1	.017	-.447	-.640	-.093	.178	-.098	.360	.791[*]
	Sig. (2-tailed)	.457	.174		.972	.315	.122	.843	.703	.834	.427	.034
	N	7	7	7	7	7	7	7	7	7	7	7
Gender diversity	Pearson Correlation	-.060	-.118	.017	1	-.658	-.333	-.512	.774	.893[**]	-.671	-.249
	Sig. (2-tailed)	.898	.802	.972		.108	.465	.240	.121	.007	.099	.590
	N	7	7	7	7	7	7	7	7	7	7	7

Gross Domestic Product	Pearson Correlation	-.479	.212	-.447	-.658	1	.218	.648	-.774	-.669	.263	-.249
	Sig. (2-tailed)	.277	.648	.315	.108		.639	.116	.121	.100	.568	.590
	N	7	7	7	7	7	7	7	7	7	7	7
Inflation rate	Pearson Correlation	.299	.141	-.640	-.333	.218	1	-.180	-.276	.059	-.193	-.640
	Sig. (2-tailed)	.515	.763	.122	.465	.639		.699	.549	.900	.678	.122
	N	7	7	7	7	7	7	7	7	7	7	7
Interest rate	Pearson Correlation	-.669	.012	-.093	-.512	.648	-.180	1	-.649	-.592	.754	.080
	Sig. (2-tailed)	.100	.979	.843	.240	.116	.699		.115	.162	.050	.864
	N	7	7	7	7	7	7	7	7	7	7	7
Exchange rate	Pearson Correlation	.159	-.288	.178	.963**	-.774*	-.276	-.649	1	.723	-.668	-.183
	Sig. (2-tailed)	.734	.531	.703	.001	.041	.549	.115		.121	.101	.695
	N	7	7	7	7	7	7	7	7	7	7	7
Financial performance	Pearson Correlation	.208	.005	.791*	-.249	-.249	-.640	.080	-.183	-.495	.551	1
	Sig. (2-tailed)	.654	.992	.034	.590	.590	.122	.864	.695	.259	.199	
	N	7	7	7	7	7	7	7	7	7	7	7

* Correlation is significant at the 0.05 level (2-tailed)

Based on the results in Table 7, the study revealed that there was a statistically significant negative relationship (r = - 0.791, p < 0.05) between firm size and the financial performance of listed firms at NSE. This result confirms the influence of firm size on financial performance of listed firms on NSE. This echoes the study carried out by Omar (2015) on the relationship between firm size and financial performance of microfinance banks in Kenya where the findings of the study established that firm size significantly affect financial performance of microfinance banks in Kenya. Consequently, board independence, board size, gender diversity, gross domestic product, inflation rate, annual average lending interest rate, and annual exchange rate did have significant influence (r = - 0.208, p > 0.05, r = - 0.005, p > 0.05, r = - 0.249, p > 0.05, r = - 0.248, p > 0.05, r = - 0.640, p > 0.05, r = - 0.080, p > 0.05 and r = - 0.183, p > 0.05 respectively) on the financial performance of listed firms on NSE.

Based on the results in Table 7, the study revealed that there was a statistically significant negative relationship (r = - 0.495, p < 0.05) between macro-economic factors and financial performance of listed firms at NSE. This result confirms the influence of macro-economic factors on financial performance of listed firms on NSE. The result echoes the study carried out by Kimeu (2017) on the effect macro-economic factors on financial performance of commercial banks in Kenya where the findings of the study established that macro-economic factors significantly affect banks' financial performance in developing economies. In terms of corporate governance, the results in Table 7 revealed a statistically significant positive relationship (r = 0.551, p < 0.05) between corporate governance and financial performance of listed firms at NSE. Consequently, this confirms the influence of corporate governance on the financial performance of listed firms on NSE.

Regression Analysis

The study used multiple linear regression analysis to determine the influence of macro-economic and corporate governance factors on financial performance of listed firms at NSE.

Influence of the Macro-economic Factors on Financial Performance of Listed Firms on NSE

The first objective of the study was to determine the influence of the macro-economic factors on financial performance of listed firms at NSE. The selected macro-economic factors considered in the study include: Gross Domestic Product, inflation rate, interest rate, and exchange rate. The study used multiple linear regressions to determine the effect of macro-economic factors on financial performance of listed firms at NSE, Kenya. The multiple linear regression results are shown in Table 8 to Table 10.

Table 8. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.997a	0.993	0.980	0.00975

a. Dependent Variable: Financial performance.
b. Predictors: (Constant), Exchange rate, Gross Domestic Product, Interest rate and Inflation rate.

Table 9. ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	0.029	4	0.007	75.219	0.013
	Residual	0.000	2	0.000		
	Total	0.029	6			

a. Dependent Variable: Financial performance.
b. Predictors: (Constant), Exchange rate, Gross Domestic Product, Interest rate and Inflation rate.

Table 10. Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
	B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound
1 (Constant)	1.893	0.133		14.183	0.005	1.319	2.467
Gross Domestic Product	-5.890	0.705	-0.809	-8.356	0.014	-8.923	-2.857
Inflation rate	-0.022	0.002	-0.909	-13.017	0.006	-0.029	-0.015
Interest rate	-0.016	0.003	-0.426	-4.600	0.044	-0.031	-0.001
Exchange rate - Kes/US Dollar	-0.012	0.001	-1.336	-13.106	0.006	-0.016	-0.008

a. Dependent Variable: Financial performance.
b. Predictors: (Constant), Exchange rate, Gross Domestic Product, Interest rate and Inflation rate.

The results of the study in Table 8, macro-economic factors (GDP, inflation rate, interest rate and exchange rate), accounted for 99.3% of the financial performance of listed firms at NSE ($R^2 = 0.993$).

Based on the ANOVA results of the study in Table 9, the significance value was 0.013 with an F value of 75.219. Thus, this shows that there is a statistical significant relationship between macro-economic factors and the financial performance of listed firms at NSE because the significance value of 0.013 is less than 0.05. Hence, the null hypothesis (Ho1) which states that there is no significant relationship between macro-economic factors and the financial performance of listed firms at NSE was rejected and an alternative hypothesis which states that there is a significant influence of macro-economic factors on the financial performance of listed firms at NSE was accepted. This is because the results from Table 10 indicate that the level of significance was 0.013 with an F value of 75.219 which is less than 0.05 (0.013, $p<0.05$), i.e., the significant level of the study. This confirms the significant influence of macro-economic factors on the financial performance of listed firms at NSE.

The results of the study conform to the findings of the study carried out by Masoumi, Azar, RezaPour and Mehrara (2019) on economic and non-economic determinants of Iranian pharmaceutical firms' financial performance where they found out that economic (Macro-economic factors) determinants significantly influence the financial performance of Iranian pharmaceutical firms.

Grounded on the regression coefficients results of the study in Table 10, the unstandardized beta coefficients indicate that annual exchange rate (β = -0.012, $p < 0.05$) and interest rate (β = -0.016, $p < 0.05$) were the robust macro-economic predictors of the financial performance of listed firms at NSE when compared to GDP (β = -5.890, $p < 0.05$) and annual average lending rate (β = -0.016, $p < 0.05$) which was the least predictors of the financial performance of listed firms at NSE. Therefore, the multiple linear regression results indicate that macro-economic factors have a statistical significant influence on the financial performance of listed firms at NSE.

Guided by equation 1 and values in Table 10, the following multiple regression model was specified.

$$Y = 1.893 - 0.016\,X_1 - 0.022\,X_2 - 0.012\,X_3 - 5.890\,X_4 + \varepsilon$$

When there is a unit increase in interest rate, financial performance of listed firms at NSE will decrease by 0.016 units; when there is a unit increase in inflation rate, financial performance of listed firms at NSE will decrease by 0.022 units; when there is a unit increase in exchange rate, financial performance of listed firms at NSE will decrease by 0.012 units; and when there is a unit decrease in GDP, financial performance of listed firms at NSE will decrease by 5.890 units.

Influence of the Corporate Governance Factors on the Financial Performance of Listed Firms at NSE

The second objective of the study was to determine the influence of the corporate governance factors on the financial performance of listed firms at NSE. The corporate governance factors considered in the study include; Board independence, Board size, Firm size in Ksh trillion, and Gender diversity. The study used multiple linear regression to determine the influence of corporate governance on the financial performance of listed firms at NSE. Table 11 to Table 13 shows the result of multiple linear regression for the influence of corporate governance on the financial performance of listed firms at NSE.

Table 11. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.997a	0.995	0.985	0.0086

   a. Dependent Variable: Financial performance

   b. Predictors: (Constant), Board Size, Board Independence, Gender diversity and Firm Size.

Table 12. ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	0.029	4	0.007	96.747	0.010
	Residual	0.000	2	0.000		
	Total	0.029	6			

   a. Dependent Variable: Financial performance.

   b. Predictors: (Constant), Board Size, Board Independence, Gender diversity and Firm Size.

Table 13. Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
	B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
1 (Constant)	0.245	0.110		2.217	0.015	-0.230	0.719
Board Independence (BDI)	-0.661	0.299	-0.120	-2.210	0.158	-1.947	0.626
Board Size (BDS)	0.485	0.045	0.670	10.672	0.009	0.289	0.680
Firm Size (FMS)	5.598	0.300	1.222	18.658	0.003	4.307	6.889
Gender diversity (GED)	-1.441	0.373	-0.198	-3.862	0.061	-3.047	0.164

   a. Dependent Variable: Financial performance.

   b. Predictors: (Constant), Board Size, Board Independence, Gender diversity and Firm Size.

Based on the results of the study in Table 11, board independence, board size, firm size in Ksh trillion, and gender diversity accounted for 99.5% of the financial performance of listed firms at NSE ($R^2 = 0.995$). Grounded on ANOVA results in Table 12, the level of significance was 0.010 with an F value of 96.747 which indicate a statistically significant influence of corporate governance factors on the financial performance of listed firms at NSE because the P value of 0.010 is less than 0.05 (0.010 $p < 0.05$). Hence, the null hypothesis (Ho2) which states that there is no significant relationship between corporate governance variables and the financial performance of listed firms on NSE was rejected and an alternative hypothesis which states that there is significant influence of corporate governance variables on the financial performance of listed firms on NSE was accepted. This is because the results from Table 12 show that the level of significance was 0.010 which is less than 0.05 (0.010 $p < 0.05$), i.e., the significant level of the study. This confirms the significant influence of corporate governance on financial performance of listed firms at NSE. The results of the study conform to the study carried out

by Karanja (2017) on the effect of corporate governance on financial performance of Commercial Banks listed at the Nairobi Securities Exchange (NSE). Here, the results of the study established a significant effect of corporate governance on financial performance of Commercial Banks.

The unstandardized beta coefficients in Table 13 indicate that board size ($\beta = 0.485$, $p < 0.05$) and firm size ($\beta = 5.598$, $p < 0.05$) were the robust predictors of the financial performance of listed firms at NSE. Gender diversity ($\beta = -1.441$, $p > 0.05$) and board independence ($\beta = -0.661$, $p < 0.05$) were the least predictors of the financial performance of listed firms at NSE. Therefore, the multiple regression results in Table 13 discretely indicate that BDS and FMS have a statistical positive significant influence on financial performance of listed firms at NSE.

Guided by equation 2 and the results in Table 13, the following multiple regression model was specified.

$$Y = 0.245 + 0.485\,X_1 - 1.441\,X_2 - 0.661\,X_3 + 5.598\,X_4 + \varepsilon$$

When there is a unit increase in board size, financial performance of listed firms at NSE will increase by 0.485 units; when there is a unit decrease in gender diversity, financial performance of listed firms at NSE will decrease by 1.441 units; when there is a unit decrease in board independence, financial performance of listed firms at NSE will decrease by 0.661 units; and when there is a unit increase in firm size, financial performance of listed firms at NSE will increase by 5.598 units.

Joint Influence of Macro-economic Factors and Corporate Governance Variables on the Financial Performance of Listed Firms on NSE

The third objective of the study was to determine the joint influence of macro-economic and corporate governance factors on the financial performance of listed firms at NSE. The study used multiple linear regressions to determine the joint macro-economic factors and corporate governance variables on the financial performance of listed firms at NSE. The results are shown in Table 14 to Table 16.

Table 14. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.945[a]	0.892	0.355	0.22097

a. Dependent Variable: Financial performance (ROA).
b. Predictors: (Constant), Exchange rate, Gross domestic product, Interest rate, Inflation rate, Board size Board independence, Gender diversity and Firm size.

Table 15. ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	21.657	5	2.707	19.297	0.000
	Residual	36.334	2	.140		
	Total	57.991	7			

a. Dependent Variable: Financial performance (ROA).

b. Predictors: (Constant), Exchange rate, Gross domestic product, Interest rate, Inflation rate, Board size Board independence, Gender diversity and Firm size.

Table 16. Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B	
	B	Std. Error	Beta	T	Sig.	Lower Bound	Upper Bound
1 (Constant)	2.437	0.123		19.742	0.000	2.194	2.680
Interest rate	0.049	0.024	0.109	2.043	0.042	0.002	0.095
Inflation rate	-0.068	0.027	-0.149	-2.554	0.011	0.016	0.121
Exchange rate - Kes/US Dollar	-0.117	0.027	-0.260	-4.314	0.000	0.064	0.170
Gross domestic product	0.090	0.029	0.193	3.102	0.002	0.033	0.147
Board size	0.033	0.028	0.077	1.183	0.238	-0.022	0.087
Gender diversity	0.031	0.029	0.064	1.042	0.298	-0.027	0.089
Board independence	-0.002	0.031	-0.004	-.065	0.949	-0.063	0.059
Firm size	0.024	0.030	0.051	.786	0.432	-0.036	0.083

a. Dependent Variable: Financial performance (ROA).

b. Predictors: (Constant), Exchange rate, Gross domestic product, Interest rate, Inflation rate, Board size Board independence, Gender diversity and Firm size.

Based on the results of the study in Table 14, joint macro-economics and corporate governance factors accounted for 89.2% of the financial performance of listed firms at NSE ($R^2 = 0.892$). The ANOVA results of the study in Table 15 indicate the level of significance was 0.000 with an F value of 19.297 which shows a statistical significant influence of joint macro-economic and corporate governance factors on financial performance of listed firms at NSE because the P value which is 0.000 is less than 0.05. Hence, the null hypothesis which states that there is no significant joint influence of corporate governance and macro-economic factors on financial performance of listed firms at NSE was rejected and an alternative hypothesis which states that there is significant joint influence of macro-economic and corporate governance variables on financial performance of listed firms at NSE was accepted. This is because the results in Table 15 indicate that the level of significance of 0.000 is less than 0.05 (0.049 p <0.05), i.e., the significant level of the study. This indicates the joint influence of macro-economic and

corporate governance variables on financial performance of listed firms at NSE in Kenya. The results of the study conform to the study carried out by Chalwa (2019) which shows that the determinants of financial performance, which include corporate governance and macro-economic factors, significantly influence the financial performance of listed firms.

Guided by equation 3 and the results in Table 16, the following multiple regression model was specified.

$$Y = 2.437 + 0.049\,X_1 - 0.068\,X_2 - 0.117\,X_3 + 0.090\,X_4 + 0.033\,X_5 + 0.031\,X_6 - 0.002\,X_7 + 0.024\,X_8 + \varepsilon$$

When there is a unit increase in interest rate, financial performance of listed firms at NSE will decrease by 0.049 units; when there is a unit increase in inflation rate, financial performance of listed firms at NSE will decrease by 0.068 units; when there is a unit increase in exchange rate, financial performance of listed firms at NSE will decrease by 0.117 units; and when there is a unit increase in GDP, financial performance of listed firms at NSE will increase by 0.09 units. When there is a unit increase in board size, financial performance of listed firms at NSE will increase by 0.033 units; when there is a unit increase in gender diversity, financial performance of listed firms at NSE will increase by 0.031 units; when there is a unit decrease in board independence, financial performance of listed firms at NSE will decrease by 0.002 units; and when there is a unit increase in firm size, financial performance of listed firms at NSE will increase by 0.024 units.

Conclusion

The main objective of this study was to determine the joint effect of macro-economic and corporate governance factors on financial performance of listed firms in Kenya. The correlation and regression results show a strong statistically significant joint influence of macro-economic and corporate governance factors on financial performance of listed firms on NSE specified by ANOVA results with a significant level of 0.000, P <0.05 and an F value of 19.297. Macro-economic and corporate governance factors were thus found to have a joint significant influence on financial performance of listed firms on NSE. The results of the study conform to the study carried out by Chalwa (2019) where the researcher found that the determinants of financial performance, which include corporate governance and macro-economic factors, significantly influence the financial performance of listed firms.

Recommendations

As indicated from the findings of the study, macro-economic and corporate governance factors jointly and significantly influence the financial performance of listed firms at NSE. It is therefore necessary that the government of Kenya, with aid of CBK and public financial institutions,

should come up with suitable policies that protect the firms at NSE from the negative effects of macro-economic factors in order to guide and support their financial performance. On the other hand, owners and managers of firms have a responsibility of addressing the influence of corporate governance factors by choosing the right mix for their firms in order to enhance the overall financial performance and ensure fairness by and for all actors in the market. Kenyan Capital Market Authority should also play a pivotal role in ensuring the right legislations and governance structures are put in place and applied by owners and managers of these firms. The number of women in boards is still below the constitutional threshold and therefore women should be encouraged to fairly compete for the board positions in order to bring in diversity thereby improving performance.

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Les hôpitaux du Maghreb face au COVID-19 : Etude de la participation des parties prenantes au processus de décision

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Résumé

Le modèle du « *garbage can* » a fait l'objet de plusieurs études, il est associé aux organisations de type anarchie organisée, à l'image des hôpitaux. Cet article s'intéresse à l'influence des parties prenantes externes sur ce modèle décisionnel, sujet de recherche qui a été peu abordé par la littérature. Compte tenu du contexte d'interaction des hôpitaux avec des parties intéressées externes, nous visons à comprendre les articulations exactes se déroulant dans le processus de décision au sein de ces structures de santé. La crise sanitaire mondiale due au COVID-19 a mis les hôpitaux au centre des opérations, et a été marquée par une multitude d'interventions d'acteurs externes, cette situation va constituer notre contexte d'étude. Pour réaliser cette recherche une étude longitudinale de trois hôpitaux en Algérie qui s'appuie sur cinquante-trois entretiens permet de dresser un cadre théorique explicatif. Nous apportons une description processuelle en situation de crise, en considérant le rôle des acteurs en présence. Le processus de décision est décrit en deux phases : (1) une phase d'intelligence où se déroule une coproduction des séquences de décisions entre les hôpitaux et les parties prenantes de l'autorité publique ;(2) une deuxième phase d'interaction où le processus se déroule selon le modèle de la poubelle. Nous identifions aussi les rationalités mises en jeu dans une approche holistique du processus étudié : la rationalité limitée et la rationalité contextuelle.

Maghreb Hospitals Facing COVID-19: Study of Stakeholder Participation in the Decision-Making Process

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Abstract

The garbage can model has been the subject of several studies; it is associated with organizations of the organized anarchy type, such as hospitals. This article focuses on the influence of external stakeholders on this decision-making model, a research topic that has been little addressed in the literature. Given the context of the interaction of hospitals with external interested parties, we aim to understand the exact articulations taking place in the decision-making process within these health structures. The global health crisis due to COVID-19 has put hospitals at the center of operations and has been marked by a multitude of interventions by external actors, this situation will constitute our context of the study. To carry out this research, a longitudinal study of three hospitals in Algeria which is based on fifty-three interviews makes it possible to draw up an explanatory theoretical framework. We provide a procedural description of a crisis situation, considering the role of the actors involved. The decision-making process is described in two phases: (1) an intelligence phase where a co-production of decision sequences takes place between hospitals and public authority stakeholders; (2) a second interaction phase where the process takes place according to the model of the garbage can. We also identify the nationalities involved in a holistic approach to the process studied: limited rationality and contextual rationality.

Keywords: Collegiality, rationality, longitudinal study, garbage can mode

Introduction

De nombreux travaux de recherches scientifiques sur la prise de décision se sont intéressés au modèle de la poubelle, et cela, dans différents secteurs et spécialités (Browing et al., 2006). Ainsi, Lauesen (2015) propose un modèle appelé « Organic Stakeholder Model » qui s'intéresse au processus de prise de décisions éthiques par l'inclusion de multiples parties prenantes. L'étude repose sur l'observation de plusieurs organisations, et conclut à la nécessité d'inclure les parties intéressées dans les processus décisionnels de type poubelle pour arriver à une résolution des problèmes traités. La crise du coronavirus qui secoue le monde depuis 2020 a mis à rude épreuve les systèmes de santé dans plusieurs pays, au centre de ces systèmes les hôpitaux. Ces structures de santé qui dépendent généralement de l'autorité publique,

assument la lourde mission de la prise en charge des malades de la pandémie. La gestion de cette crise mondiale a vu l'intervention des plus hautes autorités publiques dans tous les pays, et cela, pour une prise en charge meilleure de la santé des populations. Ce contexte nous pousse à nous interroger sur le rôle exercé par les parties prenantes externes dans le déroulement du processus de décision au niveau des hôpitaux.Les travaux de Glouberman et Mintzberg (2001) dans les hôpitaux anglais décrivent ces derniers comme des organisations qui interagissent avec de multiples parties prenantes.Dans cette optique, Cohen et al. (2012) expriment leurs visions sur le modèle de la poubelle après quarante ans d'existence, en indiquant que les perspectives de recherche du modèle doivent s'orienter vers les interconnexions existant dans la dynamique du monde actuel. Dans cette recherche, nous visons à comprendre l'implication des parties intéressées externes dans le processus de décision au sein des hôpitaux dans un contexte de crise, l'objet est ici de proposer un cadre théorique capable d'illustrer la prise de décision dans de telles anarchies organisées. Notre article se scinde en deux parties : un exposé théorique des anarchies organisées et du modèle de la poubelle, tout en faisant le lien avec la théorie des parties prenantes. Dans la deuxième partie de l'article, nous menons une recherche empirique dans trois établissements hospitaliers, la méthode longitudinale de l'étude de cas multiples sera mise en application afin de répondre à la problématique (Yin, 2014). Nous exposerons par la suite les résultats de notre enquête.

Revue de littérature
L'organisation vue comme une anarchie organisée
      Les travaux de Cohen et al. (1972) ont permis de caractériser les anarchies organisées, ils résultent de l'étude des universités américaines et qui par la suite ont été généralisées à d'autres types d'organisations. Pour Vallejo et al. (2015), c'est la multiplicité d'acteurs porteurs de décision et qui ne s'alignent pas sur un objectif qui constitue l'une des causes de cette situation Les organisations anarchiques à l'image des hôpitaux et des universités se caractérisent par une incompréhension de leurs membres quant au déroulement du processus. Le traitement des données entrantes se déroule selon une technologie floue, conduisant à des résultats suscitant une interprétation vague des acteurs (Cohen et al., 1972).De même, le processus de transformation qui se produit est le résultat des expériences précédentes, qui sont décrites comme un tâtonnement aboutissant vers une sortie. Ainsi, l'étude de Vallejo et al. (2018) à montrer que même la maîtrise technologique n'est pas capable de dépasser le « slack » dû à la technologie floue, cette recherche sur les pôles d'activité médicale dans un hôpital public à montrer les limites des contrôleurs de gestion qui n'ont pu apporter de solutions pour

une meilleure maîtrise du budget, et ce, malgré la conception d'outils spécifiques aux tâches.

La théorie de la décision et le modèle de la poubelle

A la différence de la théorie du choix rationnel construite autour d'une mobilisation de choix dans un contexte incertain, le modèle de la poubelle est fondé sur la dynamique de l'organisation, basée sur le contexte, avec des choix imprévisibles survenant par accident et selon des intentions individuelles momentanées (Bendor et al., 2001). Selon Desreumaux et Romelaer (2001) la rationalité dans le modèle de la poubelle obéie à des facteurs organisationnels de routines myopes, ces facteurs agissent dans une double complexité interne et externe à l'organisation. Dans un autre registre, Pinfield (1986) élabore une comparaison entre les organisations structurées et les anarchies organisées selon cinq axes : (1) la définition de la décision ; (2) les objectifs ;(3) la participation ;(4) la dépendance contextuelle ;(5) le temps. La comparaison relève le caractère post-factum de la décision au sein des anarchies organisées. Dès lors, la décision n'est pas vue comme une démarche planifiée, mais comme un solutionnement de problèmes surgissant dans l'organisation. Le temps est décrit comme n'étant pas nécessairement séquentiel aux problèmes, choix et actions, et cela, à l'inverse des organisations structurées. Or, selon Huault (2017) et malgré toutes ces descriptions qui reflètent une « non-linéarité », les organisations fonctionnant sous ce modèle ne peuvent obligatoirement être vues comme non performantes. Ainsi, ces cas d'organisation ne relèvent pas de l'anormal ou de cas isolés. De leur côté, Fioretti et Lomi (2008) montrent que dans les organisations de type anarchies organisées, la résolution de problèmes n'est pas effective, ces dernières subsistent toujours, tout en soulignant que ces au niveau des hiérarchies inférieures que se résolvent quelques problèmes. Chatelain-Ponrey et al. (2014) abordent la question de la prise de décision stratégique dans les organisations collégiales à l'image des universités et des hôpitaux, en précisant qu'une influence modérée est à mettre au profit des parties prenantes internes. L'étude souligne que la prise de décision stratégique est centralisée vers la tête de ces organisations créant une marginalisation des autres niveaux hiérarchiques. Dans cette perspective, l'analyse de Chatelain-Ponrey et al. (2014) précise que la décision collective au sein des organisations collégiales se caractérise par une forme non hiérarchisée (Waters, 1989 ; Lazega, 1999 ; Lazega et Wattebled ,2010) et qui obéit au « système d'action collective » ou « système d'échanges généralisé et multiplexe », et cela, pour expliquer la démarche des pairs à l'image des comités scientifiques qui siègent à l'intérieur des universités. De leur côté, Pierre et Peters (2005) apportent un éclairage important pour expliquer les actions des gouvernements, en mettant le modèle du « *garbage can* » au centre

de la gouvernance des pouvoirs publics, tout en expliquant que le concept de la rationalité limité de Simon ne permet pas d'interpréter les prises de décisions des gouvernements.

Pandémie du covid-19 et crise des hôpitaux maghrébins

La pandémie du COVID-19 est déclarée le 11 mars 2020 par l'Organisation mondiale de la santé. En Algérie, le premier cas est découvert officiellement le 25 février 2020 chez un ressortissant italien travaillant dans une importante société pétrolière italienne au sud de l'Algérie. En Tunisie, les 24 gouvernorats du pays sont touchés, le virus est détecté officiellement le 2 mars 2020.Le gouvernement tunisien annonce une série de mesures parmi celles-ci : le confinement et la fermeture des frontières. Le journal Le Monde du 26 juillet 2021 fait état que des hôpitaux sont complètement saturés, et que les moyens de soins sont en manque, ainsi que la présence d'un personnel médical étranger à la rescousse dans certaines structures sanitaires. Au Maroc, la chaîne de télévision France 24 annonce le 20 août 2021 une situation très difficile dans les hôpitaux où des unités opératoires ont été transformées en unités de COVID-19. Le journal Le Monde du 18 novembre 2020 annonce des hôpitaux submergés, où des efforts étaient déployés dans les services de soins et réanimations, afin d'augmenter les capacités d'accueil. Ainsi, une nouvelle organisation apparaît dans les hôpitaux marocains et des décisions sont prises pour faire face à l'ampleur de la pandémie, la situation est décrite comme faisant partie d'une nouvelle forme de pratiques managériales (Elwardi et al., 2021).

Prise de décision et implication des parties prenantes

Waguespack (2006) explique l'influence des parties prenantes externes dans le modèle du « *garbage can* » grâce à une étude portant sur les décisions environnementales dans la gestion des déchets dangereux. Les résultats de l'étude montrent que l'implication d'acteurs externes varie selon l'importance de la décision considérée, et que les décisions qui concernent des affaires complexes suivent le modèle de la poubelle à l'inverse des décisions de faibles ou de très haute importance, qui suivent le modèle rationnel de Simon (1955). La complexité de certains systèmes implique selon Hafsi et al. (2000) la combinaison de différentes conceptions de la rationalité afin d'expliquer les décisions. Ainsi, la rationalité d'un système peut aussi être la décomposition d'une série de rationalités attribuées à différents acteurs (Crozier et Friedberg, 1977). Parmi les variables importantes que nous considérons dans notre recherche, nous citons l'urgence associée à la décision. En effet, la pandémie du coronavirus a soulevé une vague de décision dans tous les secteurs de la vie humaine, il n'existe presque pas de secteurs qui soient restés insensibles au virus du COVID-19. Le concept d'urgence a été

abordé par Mitchell et al. (1997) comme un attribut d'identification de parties prenantes, et qui peut être associé ou dissocié des concepts de pouvoir et de légitimité. Ce concept fait appel au degré de priorité des demandes formulées par les acteurs, il fait aussi référence à la sensibilité du temps de réaction aux requêtes des parties prenantes (Eyestone, 1978), et à la criticité des demandes formulées par les parties intéressées (Hill et Jones,1992).De même, les travaux de Neville et al. (2011) qui placent l'urgence comme une source de dynamisme du modèle de Mitchell et al. (1997), permettant la priorisation des réclamations des parties intéressées. Dans un autre registre, Bouglet et Joffre (2015) proposent un modèle centré sur les attentes qui s'inspire des attributs du modèle de Mitchell en considérant l'attente comme une revendication particulière sur laquelle une partie prenante compte obtenir satisfaction. Dans cette perspective, Bouglet et Joffre (2015) postulent qu'une attente peut être légitime, urgente, et/ou portée par une partie prenante possédant un pouvoir. Ainsi la nature de la partie prenante n'est pas considérée comme objet d'analyse. La participation d'une partie intéressée sous-entend son niveau d'implication dans un processus de décision (Ashmos et al., 1998),et aussi la profondeur de son influence (Edelenbos et Klijn, 2005).

L'analyse précédente permet de relever des aspects de participation des parties intéressées aux processus de décision, cette participation dépendante ou indépendante du pouvoir des acteurs est traitée par la littérature scientifique sous diverses formes, on citera la consultation, la concertation et la négociation (Touzard, 2006). Ainsi, l'interaction entre parties prenantes dans un processus de décision collective peut-être vue comme un système d'articulation englobant les interactions de chacune de ces parties, ce mode de coordination est défini par le concept de concertation (Damart et al., 2001).La pratique de la concertation entre acteurs s'est étendue dans divers secteurs, c'est ainsi que Queste et Wassenaar (2018) présente toute l'importance de la concertation comme une pratique multi-acteurs, et cela, grâce à la diffusion de connaissances et résultats intermédiaires contribuant au développement de la recherche. La crise sanitaire due au COVID-19 a instauré un climat de coopération internationale encouragée par l'organisation mondiale de la santé (Houssin, 2020), cette coopération entre structures sanitaires internationales peut-être relevée par les échanges entre les structures sanitaires dans les domaines des vaccins et des soins.

Méthodologie de la recherche
Le choix d'une approche processuelle

Notre recherche portera sur une étude de cas multiple (Yin, 2003), et cela, dans un souci de réplication des résultats, nous abordons l'objet de recherche par une approche holistique. Notre analyse s'articule sur une étude longitudinale approfondie de 03 centres hospitaliers situés à Alger. Pour cela,

nous avons conduit l'étude en deux étapes (Musca, 2006) : une étape exploratoire où nous avons cherché à recueillir des visions contrastées de la problématique étudiée, et cela, en nous intéressant à toutes les parties concernées, cette étape s'est déroulée pendant les mois de février-mars-avril 2020.Une deuxième étape d'étude intensive à partir du mois d'avril 2020,où nous avons focalisé notre travail de recherche à l'intérieur des hôpitaux .

Collecte et analyse de données

Trois grands centres hospitaliers de la ville d'Alger ont constitué notre terrain d'étude, ainsi que des structures de parties intéressées associées aux décisions. Nous avons dans un premier temps réalisé 12 entretiens non-directifs (Baumard et al., 2014 ; Gavard-Perret et al.,2012) avec des médecins et des responsables locaux impliqués dans la gestion de la crise du COVID-19 (étape exploratoire).Les entretiens ont duré entre une heure et une heure et demie, les échanges ont eu lieu généralement après les réunions de crise. Notre objectif était de comprendre l'interaction entre les parties prenantes externes et les hôpitaux, pour cela, nous nous sommes intéressés à l'objet des réunions avec les structures administratives de santé publique et le travail qui était réalisé au niveau des hôpitaux. L'exploitation du matériau obtenu a permis d'approfondir le sujet étudié et de relever l'influence exercée par les parties prenantes externes dans les prises de décisions au sein des hôpitaux publics. Grâce aux premiers entretiens, notre démarche abductive a permis de faire émerger de nouveaux thèmes qui ont servi à l'élaboration d'un guide d'entretien affiné pour une deuxième phase d'entretiens semi-directifs (Miles et Heberman, 1984). Ces thèmes ont été complétés par ceux de la revue de littérature présentée dans l'actuel article. Dans la seconde étape (étude intense), nous avons réalisé 41 entretiens semi-directifs avec des gestionnaires et des praticiens du corps médical en relation directement avec les processus de décision dans les hôpitaux. Nous avons arrêté les entretiens, une fois que nous avons atteint une saturation dans les réponses (Bloor et Wood, 2006). Nous avons apporté des améliorations au guide d'entretien, le faisant évoluer grâce aux interactions provenant des entretiens non directifs, permettant ainsi, de collecter un matériau empirique riche. Les entretiens ont été espacés les uns des autres afin de procéder à une retranscription du verbatim, le guide a été adapté selon le profil de l'interviewé : gestionnaire ou praticien de la santé. Nous avons enrichi les données primaires par des données secondaires constituées principalement d'article de presse afin d'avoir une vision holistique sur le recueil réalisé pendant presque deux ans. À la fin de la collecte des données, nous sommes arrivés à retracer la monographie du processus et à constituer un corpus de 114 pages regroupant la retranscription des entretiens réalisés et des observations relevées, ainsi que les documents accumulés.
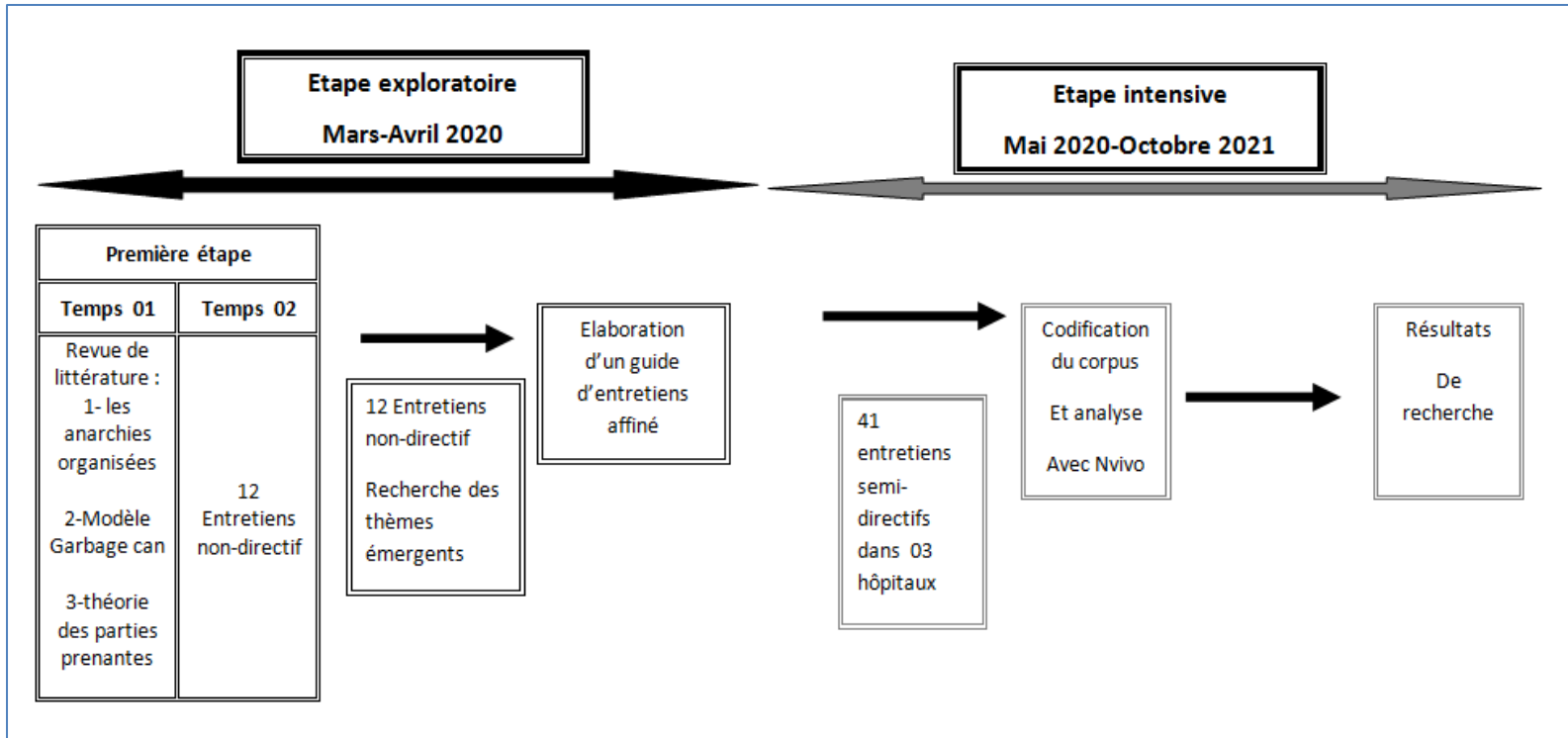
Figures 1 : les étapes de notre recherche
Source : Adapté par Musca (2006) à Yin (2003,p.40).

Aussi, nous sommes parvenus à décomposer le temps pour construire des périodes. Par la suite, nous avons opéré une analyse thématique des entretiens, ce travail d'analyse a commencé par une lecture flottante des textes retranscrits dans le but de relever les récurrences, les liens de causalité, ainsi que les faits marquants, selon les recommandations de Miles et Huberman (2007).Par la suite et afin de cerner le matériau recueilli, nous avons élaboré des fiches de synthèses en une page pour chacun des 53 entretiens réalisés, cela nous a permis de synthétiser les données pour structurer notre réflexion dans l'étape de codage. Par la suite, nous avons défini des phrases issues du découpage du corpus et représentants nos unités d'analyse, pour les affecter dans des catégories (Bardin, 2001).Une approche hybride a été privilégiée entre une thématisation déductive et une thématisation par approche inductive, permettant une démarche rigide et riche en même temps (Paillé et Mucchielli, 2016).Par ailleurs, nous avons opté pour une démarche automatisée à l'aide du logiciel d'analyse qualitative NVivo 12 pour faciliter le processus de gestion et de catégorisation de nos données empiriques, cette démarche nous a permis une visibilité systémique rapide des données textuelles (Gavard-Perret et Helme-Guizon,2012).Ainsi, dans un premier temps, nous avons dressé une liste de thèmes, définie à partir du guide d'entretien, à savoir : organisation des hôpitaux ;interaction avec parties prenantes externes; choix décisionnels. A ces derniers,nous avons fait correspondre des sous-thèmes inspirés de la revue de littérature et centré autour de notre problématique de recherche. Dans un deuxième temps, nous avons repéré des unités d'analyse et qui ont été reliées aux thèmes correspondants pour former une arborescence. Dans un troisième temps, nous avons fait émerger de nouveaux thèmes, à savoir : application des décisions, rationalités des décideurs. L'opération de codage est arrivée à son terme dès que nous sommes parvenus à saturation des sources, caractérisées par l'émergence de régularité (Lincoln et Guba, 1985). Dès lors, nous avons commencé l'interprétation des données en faisant une abstraction de notre travail empirique vers notre cadre d'analyse conceptuel.

Résultats
La première vague du coronavirus : février 2020 à septembre 2020

La première vague du virus est marquée par une incertitude totale quant à la nature du virus : sa transmissibilité, sa mortalité, les moyens de lutte, son traitement. L'ambiguïté au niveau des hôpitaux règne à tous les niveaux, où il n'existe aucune procédure de traitement chez les praticiens. Les services d'urgence sont les premiers à être submergés graduellement par les patients qui affluent. Les symptômes de la maladie ne sont pas encore bien cernés ainsi que les analyses nécessaires pour le dépistage du virus : « Les premiers patients ont commencé à arriver au niveau du service d'urgence, en notre qualité de praticien de la santé, nous étions dans l'expectative , car peu

d'informations étaient connues sur le coronavirus et la peur régnée à tous les niveaux, il n'existait pas de procédures de prise en charge et un état de panique régné ici.» (un médecin de l'hôpital 01).Les pouvoirs publics interviennent par la suite et des comités scientifiques sont installés dans chaque hôpital, ainsi qu'un comité scientifique national au niveau du ministère de la santé. Cela permet de dégeler la situation par la création d'unités spéciales de traitement du COVID-19 à l'intérieur de chaque hôpital: « L'organisation mise en place nous paraît être satisfaisante et acceptée par tout le monde, dans le temps actuel, nous avons agi selon les informations à notre disposition, des comités scientifiques sont en place pour proposer des solutions que nous essayons d'opérationnaliser, beaucoup d'aspects sont pris en considération pour la gestion de cette crise.» (un responsable de l'administration local). Une organisation se met en place par la création d'espaces pour l'accueil des malades qui sont par la suite pris en charge par catégories, cela commence par les cas suspects jusqu'aux cas les plus critiques qui sont admis directement en réanimation. Ainsi, des centres de tri sont mis en place pour détecter les malades au préalable, et cela, après questionnement sur la nature des symptômes qu'ils présentent. Par la suite, les médecins remplissent des formulaires pour une prise en charge appropriée. Le contact n'est pas permis et la communication s'effectue à travers des ouvertures. Les personnes déclarant avoir été en contact avec des malades du coronavirus sont orientées aussi pour effectuer des scanners permettant de relever l'existence de lésions qui indiqueraient une infection au COVID-19.Des espaces d'accueil sont réservés aux malades asymptomatiques, et des décisions sont prises à l'intérieur des hôpitaux pour que les services traitant les maladies pneumologiques soient transformés en unités de traitement du COVID-19,la maladie est perçue comme affectant le système pulmonaire plus que d'autres parties du corps humain. D'autres décisions sont prises au vu de l'affluence importante des malades, ainsi, il est recommandé un confinement à domicile des cas suspects qui n'ont pas subi de dépistage, à cause d'une surcharge des unités COVID-19, cette procédure est surtout recommandée quand la vie du patient n'est pas en danger. Les symptômes les plus récurrents que présentent les malades qui arrivent sont la toux sèche, fièvre et une difficulté dans la respiration. Les tests sont effectués sur les personnes présentant de forts symptômes. D'autres services ont été transformés en espace d'accueil, comme pour l'hôpital 03 où la décision a été prise pour que le service ophtalmologie soit affecté au patient présentant des complications respiratoires et une aggravation de cas : « Nous agissons dans l'urgence, car nous sommes sous pression de la part de la population ainsi que la tutelle, donc des solutions sont trouvées selon le déroulement des événements ,nous devons aussi faire avec les structures en place que nous adaptons aux nouveaux besoins.» (un des gestionnaires de l'hôpital 02). Le choix n'est pas fortuit puisque le service

ophtalmologie se trouve à proximité de la réanimation, ce qui permet un transfert rapide en cas de complication grave pour le malade. Le ministère de la santé intervient pour recommander un traitement thérapeutique sur la base de chloroquine, les médecins traitant au niveau des hôpitaux révèlent que le traitement donne de bons résultats dans beaucoup de cas, il y a aussi le traitement avec antiviraux qui réussit pour d'autres malades: « Le traitement à la chloroquine est destiné à des patients qui ne souffrent pas de maladie cardiovasculaire, aussi les patients présentant une intolérance à ce traitement sont immédiatement exclus, pour ces cas nous préconisons des antiviraux ce protocole a permis de donner de bons résultats pour le moment » (un professeur de l'hôpital 02).Les décisions de réorganisation caractérisées par la création des unités COVID-19 sont initiées à partir du ministère de la santé, ces décisions transitent par la direction de la santé et de la population de la wilaya d'Alger pour être mises en application par les structures de chaque hôpital où la direction des activités médicales et paramédicales est en charge de les appliquer. La maladie encore inconnue impose au personnel médical des hôpitaux de collaborer avec des groupes de références internationales. Ainsi, une concertation se met en place pour développer des protocoles de soins et des pratiques de gestion, l'échange s'effectue directement entre le personnel des hôpitaux et les groupes de référence, le but est d'arriver à standardiser les protocoles de traitement pendant toutes les phases de diagnostic de la maladie. Grâce aux réseaux déjà préexistant entre praticiens de santé, c'est la recherche du protocole standard et des meilleurs pratiques qui constituent l'objectif des médecins soignants, un échange s'installe particulièrement sur les réseaux sociaux, ce qui permet de développer des méthodes d'action: « La collaboration entre médecins a toujours existé, des échanges ont lieu lors des rencontres et séminaires qui sont organisés à l'international, mais avec cette pandémie les choses se sont développées puisque l'échange est devenu plus intense via les réseaux sociaux et les groupes de médecins afin d'affiner notre connaissance du virus et des moyens de lutte à entreprendre tout au long des phases de traitement » (un médecin spécialiste de l'hôpital 03).

La deuxième vague du coronavirus : octobre 2020 à janvier 2021

Après une accalmie dans les services des hôpitaux à la fin de l'été 2020 et le retour de l'espoir d'une vie normale, le nombre de cas atteint du COVID-19 revient à la hausse jusqu'à atteindre le summum en novembre 2020 selon les chiffres officiels. Les services COVID-19 qui commençaient à désemplir se retrouvent à nouveau saturés par un nombre important de malades, les unités de réanimation spécialement aménagée avec des arrivées d'oxygène sont congestionnées, commence alors une nouvelle lutte pour le personnel médical des hôpitaux, qui pointent un relâchement des gestes barrière et des mesures

de prévention de la part de la population après l'accalmie de la première vague. Mais l'organisation est plus stable et l'effet de surprise n'est plus là, les protocoles de traitement sont plus standardisés et le dépistage plus présent que lors de la première vague: « La situation est mieux gérée qu'avant et nous arrivons à canaliser le flux de malade qui arrive à l'hôpital, des automatismes se sont mis en place et le personnel médical connaît mieux ce qu'il doit faire, les décisions sont prises selon la gravité des événements» (un responsable administratif de l'hôpital 01).

La troisième vague du coronavirus : mai 2021 à octobre 2021

Le système sanitaire algérois est submergé par une troisième vague meurtrière liée au variant Delta venu d'Inde, le virus a subi une mutation et le variant est très contagieux, les chiffres officiels annoncent que 70% des malades du COVID-19 sont atteints du nouveau variant. Une demande en oxygène se fait crescendo, et les capacités des hôpitaux sont insuffisantes face à la demande .Les pouvoirs publics interviennent cette fois-ci et les autorités locales représentées par les collectivités territoriales sont responsabilisées pour subvenir aux besoins des hôpitaux, la mise en place d'une logistique capable de distribuer l'oxygène est le cheval de bataille des autorités territoriales. La gestion de l'oxygène est compliquée à l'intérieur des hôpitaux, entre nombres importants de malades, création de nouvelle salle de réanimation et détection des cas prioritaires, le travail du personnel médical s'annonce ardu. La stratégie à suivre selon certains scientifiques est de casser la dynamique du virus et de désengorger les hôpitaux. A l'intérieur, le personnel médical lutte et exprime les besoins, et cela, face à un taux d'hospitalisation important estimé à 75%. Un plan d'urgence consistant à augmenter le nombre de lits est mis en place face à une courbe épidémique qui prend une allure inquiétante. La gestion du personnel médical pose ainsi problème, entre manques d'effectif et obligation d'affecter des médecins et des infirmiers provenant d'autres services vers les unités de traitement de COVID-19, c'est toute une nouvelle organisation qui se met en place dans les hôpitaux. La situation se présente de telle sorte qu'il faut concilier entre les malades des autres services et les malades atteints du coronavirus. L'affectation et l'utilisation du matériel médical posent aussi des soucis, avec des risques importants de contamination. La multiplication des intervenants crée par moments des états d'incompréhension, qu'il s'agisse de la gestion des ressources humaines ou du matériel: « Il n'y a pas qu'un seul intervenant, mais de nombreux avis sont donnés et les choix se font rapidement à cause de l'urgence, il y a même des cafouillages dans l'organisation et l'exécution des tâches, vu que les solutions changent d'un moment à l'autre » (un des médecins de l'hôpital 03).

Discussion des résultats

Notre recherche permet une meilleure compréhension du processus de décision dans les organisations de type anarchie organisée sous influence des parties intéressées. Les résultats de notre recherche corroborent les conclusions de Chatelain-Ponrey et al. (2014) selon lesquelles le modèle de la poubelle est insuffisant pour expliquer le processus décisionnel dans les organisations collégiales à l'image des universités et des hôpitaux. Cependant, nous avons caractérisé le rôle pertinent des parties prenantes externes aux hôpitaux et leurs rôles dans le résultat final de la décision. Une lecture des résultats fait apparaître la participation des pouvoirs publics dans les prises de décision sous un aspect de « collégialité top-down » (Lazega et Wattebled ,2010).Mais la collégialité que nous décrivons est de source externe aux hôpitaux et qui se prolonge à l'intérieur de ces organisations , elle apparaît comme une collégialité imposée par la situation de crise sanitaire nationale et mondiale faisant que les services de l'Etat deviennent parties prenantes dans les décisions prises à l'intérieur des hôpitaux, mais dans une approche bureaucratique.Nos cas montrent que même en présence de cette collégialité dans le processus de décision le modèle de la poubelle reste prédominant dans les services des hôpitaux et l'intervention des parties prenantes s'apparente à une volonté de réduire le Slack organisationnel. Le processus de décision ainsi étudié peut être décrit en deux phases, une phase d'intelligence où se déroule une coproduction des séquences de décisions entre les hôpitaux et les parties prenantes de l'autorité publiques suivie d'une deuxième phase d'interaction où le processus se déroule selon le modèle de la poubelle. Il est à noter que la coproduction de décision a été déjà mise en évidence dans les anarchies organisées (Chatelain-Ponrey et al., 2014) entre la volonté de l'Etat d'autonomiser les universités et la participation de la communauté universitaire aux décisions stratégiques. Au niveau de la phase d'interaction, le personnel médical prône une autre vision dans la gestion hospitalière, c'est un processus de concertation avec les centres hospitaliers de référence à travers le monde qui se met en place, ce processus de concertation peut être inclus comme une composante importante du flou technologique qui caractérise les organisations de type anarchies organisées. Le processus collectif de concertation ainsi présenté fait référence à un partage d'informations et de pratiques (Queste et Wassenaar,2018).Notre étude relève aussi l'état d'incompréhension qui règne au niveau de la base dans l'application des décisions, il apparaît une imprécision dans les résultats des actions menées et la nouvelle organisation n'est pas cernée par l'ensemble des acteurs (Romelaer,1994),créant ainsi un flou organisationnel. Il ressort aussi de nos résultats que la participation aux processus de décision présente des fluctuations surtout après l'association de parties prenantes externes, ce qui a favorisé la multiplication des intervenants (Friedberg, 1993) accentuée par la

situation de crise. Nous avons aussi relevé la persistance des problèmes dans les contextes de décision, et cela, malgré les interventions hiérarchiques, nos travaux démontrent que la résolution partielle des problèmes se déroule plus au niveau de la base de l'organisation où les efforts du personnel médical sont très importants, ce qui rejoint les résultats des travaux de Fioretti et Lomi (2008). L'intervention des pouvoirs publics comme partie prenante se traduit sous une forme d'attente vis-à-vis de la situation vécue par la population, le cas étudié fait apparaître l'attente légitime et urgente des services de l'Etat, qui mobilise les attributs d'urgence et de légitimité, ces deux attributs apparaissent clairement au vu des interventions des structures publiques locales dans la gestion des hôpitaux. Le pouvoir d'intervention stratégique de l'autorité publique sur les hôpitaux fait aussi apparaître une autre attente, mais qui est portée par l'attribut pouvoir, les attentes de ces parties prenantes peuvent être expliquées par le modèle de Bouglet et Joffre (2015). Nos résultats réfutent les travaux de Pierre et Peters (2005) qui soutiennent que le modèle de la poubelle présente des analogies permettant d'expliquer la gouvernance des pouvoirs publics dans les différents secteurs relevant de l'Etat. En effet l'éclairage que nous apportons et spécialement dans la première phase du modèle que nous exposons, fait apparaître une logique de rationalité limitée de la part des pouvoirs publics et qui s'accorde avec le modèle de la rationalité limité de Simon (1955). Ces résultats sont confortés par l'analyse de Waguespack (2006) sur les décisions de haute importance qui suivent le modèle de l'acteur rationnel. Ainsi, il apparaît dans le processus étudié que deux rationalités sont mises en œuvre, celles des acteurs possèdent des attentes du type légitimité et urgence ou porté par le pouvoir qui agissent avec une rationalité limitée et celle des acteurs qui sont dans la partie choix et qui agissent selon une rationalité contextuelle imposée par l'environnement de l'organisation de type anarchie organisée et par la crise sanitaire. Ainsi, deux rationalités combinées peuvent être distinguées : l'une est une rationalité limitée incarnant les choix pouvant être qualifiés de non optimal de la part des pouvoirs publics et l'autre est une rationalité contextuelle incarnant les choix de l'organisation collégiale, cela rejoint la vision de Hafsi et al. (2000) ainsi que celle de Crozier et Friedberg (1977) sur la présence de différentes rationalités dans un même système.Au final, nos résultats rejoignent les conclusions des travaux de Pinfield (1986) sur l'interférence que subissent les flux dans les anarchies organisées. Plus précisément, nous montrons que le flux de participant peut agir sur une organisation anarchique en constituant une porte d'entrée pour les parties prenantes externes.

Conclusion

La recherche conduite au sein des hôpitaux algérois en situation de crise sanitaire mondiale visait un objectif exploratoire en cherchant à

comprendre le rôle des parties prenantes dans le processus de décision. Nous nous sommes intéressés au modèle de la poubelle qui est l'un des plus cités et étudiés dans la littérature scientifique et qui a constitué une rupture avec le modèle linéaire classique de Simon (1955). Notre recherche relève les interactions avec les parties prenantes significatives en s'intéressant au déroulement du processus décisionnel dans une vision holistique. Les précisions qu'apporte cette recherche nous permettent de contribuer significativement à la littérature et aux recherches mobilisant le modèle du « *garbage can* » , en abordant une thématique rarement discutée. La démarche ainsi faite permet une vision holistique générale des inputs/outputs d'une organisation collégiale en situation de crise. L'étude révèle que la participation des pouvoirs publics dans le processus décisionnel des hôpitaux suit une forme collégiale top-down sans pour autant pouvoir reconfigurer l'essence du modèle de la poubelle. L'action collégiale va plus vers une reconfiguration de l'anarchie organisée. A l'échelle bottom up, on relève des actions de concertation avec des parties prenantes externes, ces initiatives permettent de réduire le surplus organisationnel pour une standardisation des actes médicaux et gestionnaires.Notre recherche présente également un apport méthodologique intéressant. Nous avons procédé à l'analyse d'un phénomène par une étude longitudinale sans nous focaliser sur le temps, ainsi ce design a permis de répondre à la problématique de recherche mettant le rôle des parties prenantes au centre du processus étudié. La chronologie utilisée a servi à préciser un ordre d'apparition d'événements.

　　　Au-delà des apports théoriques et méthodologiques, notre recherche éclaire sur des apports managériaux intéressants. En effet, nos résultats permettent de développer un autre angle de vision de la gouvernance au niveau de l'organisation des soins, mettant la lumière sur le rôle des parties prenantes agissant en réseau, ceci permettrait une autre approche dans la formalisation des décisions de la part des cadres du secteur de la santé.Au regard de nos résultats établis en situation de crise sanitaire mondiale, il conviendrait ainsi d'investiguer d'autres modèles de décision en situation de crise. Nous pensons qu'il serait intéressant d'étudier le réseau et le rôle des parties prenantes dans la gouvernance du domaine de la santé.

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Monitoring Budget Allocation on Performance of Socio-Economic Empowerment Projects: A case of Women and Law in Southern Africa Research and Education Trust Project

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Abstract

This study seeks to investigate the influence of the monitoring and evaluation (M&E) budget allocation on the performance of socio-economic empowerment projects. The overarching theoretical framework is the resource-based view theory. The study adopted quantitative approaches to gather an in-depth understanding of the research variables and to allow a researcher to make informed recommendations using both words and numbers. The research site for the study is Women and Law Southern Africa -Lesotho. The target population of 68 project team members. A census method was adopted and the researcher used questionnaires to collect data from 68 respondents. To test reliability the research tools were piloted before actual data collection. Further, Cronbach's alpha coefficient was used to estimate instrument reliability using the pilot responses and it returned 0.818 which was fairly high. Content and face validity were adopted to test instrument validity. Proper authorizations were secured from relevant bodies to conduct the study and SPSS Version 23 data analysis software was deployed to analyze the collected data. The researcher further analyzed the data through descriptive

analysis with means and standard deviation to measure central tendencies and dispersion of the data. The general findings of the study indicated that the response was higher than a composite mean of 4.37 with a standard deviation of 0.745, implying that the study objective; of monitoring budget allocation positively influences the performance of the socio-economic empowerment project. Findings implied that the team should, as part of best practice, maintain the M&E budget separately and promote transparency by issuing the M&E budget performance reports. The study made recommendations for improving M&E budgeting. The study suggests comparative studies to be conducted on other socio-economic empowerment projects and the usage of hybrid approaches of qualitative and quantitative approaches to gather as much information as possible. The study findings conformed to the principles of resource-based view theory that advocates for adequate allocation of resources to enable the monitoring and evaluation team to execute the activities according to plan.

Introduction

A significant role played by monitoring and evaluation in projects and implementation cannot be over-emphasized. The need to deliver socio-economic empowerment projects effectively calls for an improvement in monitoring and evaluation practices to positively influence their performance (Karanja & Yusuf, 2018; W. Muchelule, 2018; Y. Muchelule, Geoffrey, & Saada, 2017). Most countries embarked on numerous socio-economic empowerment projects as part of the sustainable development goal agenda and attainment of their country visions (Uribe Macías, 2020; Watson-Grant, Xiong, & Thomas, 2017). Lesotho is no exception, socio-economic empowerment projects which are predominantly donor-funded are currently implemented in the country (Government of Lesotho, 2020; United Nations, 2017).

Performance failures of a socio-economic empowerment project gauged in terms of the project's inability to deliver desired change, schedule overruns, and poor stakeholder engagements are noted across the globe and are a source of concern for the public and private sector projects. According to Kaula (2020) and Njeru (2018), it is ideal to maintain separate budgets for monitoring and evaluation activities to promote the independence of the monitoring and evaluation activities from the other project activities. Kioko (2017) further asserts that maintaining a separate budget, specifically for monitoring and evaluation activities, signifies an effort to promote the independence of the monitoring and evaluation functions within the project

organization. According to the research by Bundi (2020), the budget allocation significantly reduces the chance of organizations committing the whole budget to other activities and compromising the monitoring and evaluation delivery. Kimatu (2020) concurs with Mushori, (2020) that budget performance of the M&E budget has to be continuously monitored to guard against the risk of budget over-expenditure or under-expenditure. Budget spending should be in line with the detailed activities contained in the monitoring and evaluation plans (Ng'etich, Otieno, Victor, & Otieno, 2017). Globally, Non-Governmental Organisations (NGOs) are appointed to lead the implementation of the socio-economic programs (Rumenya & Kisimbi, 2020). Drawing from project management best practices, schedule overruns, budget overruns, and scope creeps are not acceptable as they denote project failure (Bundi, 2020; W. Muchelule, 2018).

In Africa, countries like Kenya, Namibia, Malawi, and Ghana are party to the sustainable development goals agreement, and numerous socio-economic empowerment projects are implemented to improve the life of the citizens (Buvinic, O'Donnell, Knowles, & Bourgault, 2020; Kaluai & Muathe, 2020; Kanyangi & Okello, 2018). Most African countries have in recent years, appreciated monitoring and evaluation practices and their contribution to the successful implementation of the project. Most of those African countries implement projects using donor funding and increase maturity, in monitoring and evaluation practices in the donor community, which have also increased as they are willing to even allow project managers to budget for monitoring and evaluation activities (Gaibo, 2019; Hussein, 2020). The paper highlight the objectives of the study, research questions, and literature review. The paper further covers the theoretical framework and a conceptual framework that highlights the independent and dependent variables of the study. The research methodology together with the data collection and analysis method is also outlined in the current paper. The paper is concluded with the results of the study followed by the conclusion and recommendations.

Objective of the Study

The study was guided by the following objective: To assess the influence of monitoring and evaluation of budget allocation on the performance of the socio-economic empowerment project: A case of Women and Law in Southern Africa Research and Educational Trust Project.

Research Question

The study sought and answered the following research question: How does the budget allocation influence the performance of the socio-economic empowerment projects?

Literature Review

M&E budget allocation refers to an act of setting aside for undertaking M&E activities. According to Claude and Didace (2020), appropriate budget allocation for monitoring and evaluation activities has to be done during the project feasibility stage as failure to allocate the budget or allocating insufficient budget increases the chance of project failure (Njeru, 2018). M&E budget allocation influences the performance of the project and serves as the basis for measuring performance and proactively managing risk (Gaibo, 2019). Naliaka (2020) returned that M&E budget allocation positively influences the performance of the project. M&E budget needs to be separated from other project budgets for the success of the project. Budget allocation in monitoring and evaluation is a vital ingredient for developing the most effective monitoring and evaluation system (Hussein, 2020; Ng'etich et al., 2017). Monitoring and evaluation activities require a dedicated budget that is kept separate from other project budgets to promote independent usage of the budget (Kimatu, 2020).

The project budget should accommodate a clear and adequate budget for performing monitoring and evaluation activities (Kaula, 2020). According to Tarindwa (2019), the budget allocated for monitoring and evaluation activities can be delineated within the project budget to promote the independence of the function. The budget should further be demarcated within the overall budget to enable the independence of the monitoring and evaluation function (Bundi, 2020). M&E budget allocation and separation of such a budget from the main project are critical for founding sustainable M&E systems and, linking M&E to the project performance (IFAD, 2019). M&E budget needs to be separated from the main project budget to promote the independence of the M&E function as that has a positive influence on the performance of the project (Kaula, 2020).

M&E budget allocation and timeous allocation are key success factors for the project Rumenya & Kisimbi (2020) asserts that budget allocation and timeous allocation of the budget determine what is achieved as far as monitoring and evaluation plan is concerned. The researcher established a positive and significant influence that the monitoring and evaluation-budget allocation have on the performance of the project. In the study conducted by Mushori (2020) budget allocation and timeous allocation were identified as key determinants of effective M&E practices that positively influence the performance of the project.

Project success depended on M&E budget allocation. The budget allocated for monitoring, and evaluation activities should be adequate to effectively implement the monitoring and evaluation approved plan (Maalim, 2017). Failure to allocate a sufficient budget for monitoring and evaluation activities compromises the ability to effectively implement the planned

monitoring and evaluation activities and that increases the probability of failure to monitor or evaluate the project (Molapo, 2019). Rumenya & Kisimbi (2020), further added that, for budget allocation to positively and significantly influence project performance, the sources of finance must be well managed and maintained until the completion of the project.

There is no universally recognized formula for establishing the monitoring and evaluation budget, but some researchers argue that the monitoring and evaluation budget should be around 5-10 percent of the total project budget (Rumenya & Kisimbi, 2020). 5-10 percent allocation however remains subjective and dependent on the nature of the project implementation. M&E budget allocation remains subjective and there is no standard for assessing that adequacy as its dependent on the nature of the projects undertaken and risk-managed (Mushori, 2020). Maalim (2017), assessed the influence that budget allocation has on the performance of projects and found that there is a significant and positive association between the two, however they are undermined by the political influence.

Some research findings returned that there are critical moderating factors that influence the relationship budget allocation has to the performance of the project. Moderating factor returned by Ng'etich et al. (2017) related to the timely disbursement of the budget. They assert that the budget adequacy should be assessed in terms of the availability of allocated funds to cover all planned monitoring and evaluation activities, and timely disbursement of such budgets should also be considered. Lastly, Kioko (2017), recommends that for budget allocation to be able to positively and significantly influence project performance, it should factor in the element of risk. According to Bundi (2020), the monitoring and evaluation budget allocation influences the project performance and visa-versa.

Budget allocation to monitoring and evaluation has been identified as one of the key challenges for the effective implementation of monitoring and evaluation (Callistus & Clinton, 2018). Generally, the reviewed literature reveals the positive and significant influence and other project-specific factors that should be accommodated in the budget allocation process. Mushori (2020) however warns that budget allocation and timeous allocation are threatened by the scarcity of the financial resources and the M&E officers are continually expected to do more with less. None of the studies conducted in Lesotho assessed the influence budget allocation has on the performance of the socio-economic empowerment project and the current study serves to fill the current gap and further reveal some underlying factors that moderate the relationship between budget allocation for monitoring and evaluation activities and performance the socio-economic empowerment projects.

Socio-economic empowerment projects are critical for the achievement of sustainable development goals (Were & Kimaru-Muchai,

2021). The socio-economic empowerment projects are implemented to increase the economic activity of the country and to improve the livelihoods of the citizens. Socio-economic empowerment projects according to Buvinic, O'Donnell, Knowles, & Bourgault, (2020) capacitate citizens to part-take in building the country's economy and promote access to economic resources and income opportunities. Alamanos, Rolston, & Papaioannou, (2021) assert that socio-economic empowerment is a process that develops a sense of autonomy and confidence amongst the citizens. The socio-economic empowerment projects change the social relationship and emancipate the citizen from poverty. Kapur (2018) asserts that those projects further broaden empowerment outcomes for the citizens. Assessing the performance of a project is one of the key activities for monitoring ad evaluation. Numerous research studies assessed the influence of monitoring and evaluation practices on various project success Ivan, 2019 and Kihuha, (2018), and a clear relationship was demonstrated.

Theoretical Framework

This study is over-anchored by resource-based view theory. Welnerfelf, Prahalad and Hamel, and Spender and Grand championed the resource-based view theory. The theory was propounded around the 1980s and 1990s. The resource-based view originated from strategic management research and posits that the project budget is its source of competitive advantages (Ronoh & Kirui, 2020). The theory has two basic assumptions; namely, heterogeneity and immobility of resources. Resources are heterogeneous if different organizations have different sets of skills, resources, and governance structures, thus making each organisation unique. The second assumption of immobility highlights the fact that resources cannot be moved freely from one organization to another. The theory is related to the current study in that the study seeks to assess the influence of monitoring and evaluation budget allocation on the performance of socio-economic, empowerment projects. The resource-based view theory advocates for adequate allocation of resources to enable the monitoring and evaluation team to execute the activities according to the plan.

Conceptual Framework

The following conceptual framework that shows a diagrammatic representation of the relationship between the variables guided this study. This is shown in Figure 1.

Figure 1. Conceptual framework for monitoring and evaluating budget allocation and performance of the socio-economic empowerment project:

Budget Allocation M&E Budget Allocation M&E Timeous Budget Allocation M&E Budget Performance report	**Performance of Socio-Economic Empowerment Projects** Schedule Performance Number of Deliverables Achieved Stakeholder Satisfaction
Independent Variable	**Dependent Variable**
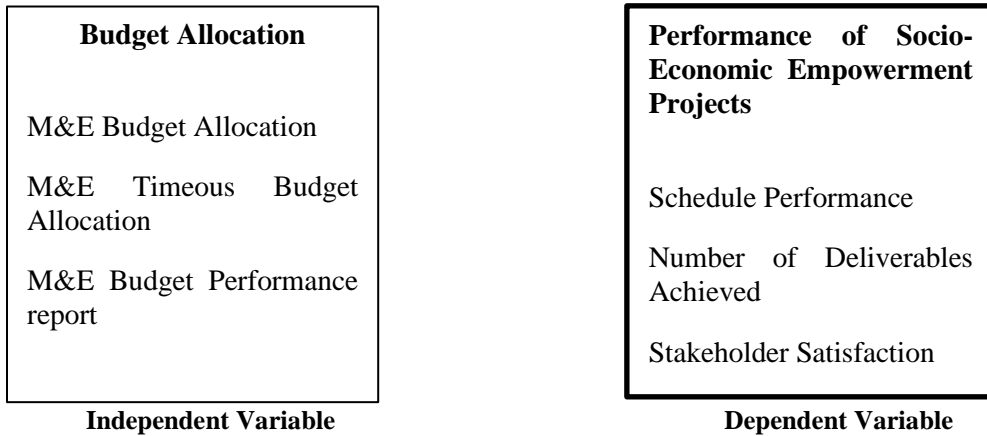
Research Methodology Research Paradigm and Design

The study adopted the descriptive research survey design. The method used for gathering data and instruments was closed-ended questionnaires. The study adopted the descriptive research survey design which has the advantage of clearly portraying the current context of the study (Bundi, 2020). Descriptive research survey design pronounces the properties of a specific phenomenon in a given situation (Karimi, Mulwa, & Kyalo, 2020; Were & Kimaru-Muchai, 2021). According to Bundi (2020), a descriptive research survey design aids the researcher to obtain detailed information given a particular context, and that applies to the current study where information is solicited on the influence of the monitoring and evaluation practices on the performance of the socio-economic empowerment project.

Study Population

The target population of 68 respondents comprised the project team led by WLSA that implemented the socio-economic empowerment project in collaboration with other NGOs.

Sample size

The research design of the current study and the small population size of the 68 respondents motivated the researcher to adopt a census procedure.

Data Collection and administration

Data was collected using an open-ended questionnaire. The design concept of the questionnaire was derived from study objectives and specified indicators for the dependent and independent variables. preparation for the data collection, the researcher sought formal approval from the national

director of WLSA-Lesotho to collect the required data. The scoring determined the significance of each assessed variable in line with identified criteria. There was a balanced mix of qualitative questions to get divergent views on M&E and performance.

The questionnaire was pretested by a researcher's colleagues at the Bank and classmates at Africa Nazarene University and following the pre-testing exercise and improvement, suggestions were rationalized and accommodated in the final questionnaire. The final questionnaire was, thereafter shared with the target population, by email and delivered. The researcher, to a limited, extent, allowed for the self-administration of the question if some respondents prefer that method, and COVID regulations were adhered to during the self-administration of the questionnaire. A research assistant was engaged to help administer the questionnaire to the targeted respondents in some districts.

Validity and reliability of the Instrument

The researcher piloted the questionnaire before using it for the actual collection of data. Even though the team piloting the instrument comprised of colleagues from the Central Bank of Lesotho, classmates from other countries were invited to be part of the pilot team, Nawi, Tambi, Samat, & Mustapha (2020) argue that it is a necessity to compute Cronbach's Alpha Coefficient for the pilot testing phase to assess the strength of consistency. For this study, content and face validity were used to preserve the validity of the findings.

The study adopted a judgmental approach to establish content validity through literature review and the establishment of a panel of subject matter specialists that were used to pilot the data collection questionnaire. There is a limited number of qualified experts in the monitoring and evaluation field in Lesotho as most organizations have not institutionalized monitoring and evaluation and the qualification in monitoring and evaluation is not yet offered in the country

Data presentation Method

Data was presented by the use of tables, which was a clear representation of the Influence of monitoring and evaluation budget allocation on the performance of the socio-economic empowerment project: A case of Women and Law in Southern Africa Research and Educational Trust Project.

Data analysis

The pilot questionnaire responses were coded and analyzed to test for the reliability and consistency of the questionnaire. All eight respondents participated in the pilot. The pilot team comprised one male respondent and seven female respondents. Their age ranged from 31 to 43 The pilot sample

analysis returned the Cronbach's Alpha Coefficient of 0.818 which is considered fairly high according to literature by Basu (2021). Cronbach's alpha is imperative to calculate when using Likert-type scales in the adopted questionnaire. Main questionnaire responses were also coded and analyzed using SPSS 23.

Results of the Study
Monitoring and Evaluation Budget Allocation and Performance of the Socio-Economic Empowerment project

The objective of this study is to assess the influence of monitoring and evaluation budget allocation on the performance of the socio-economic empowerment project. To achieve this, the respondents were asked to give their opinions based on their level of agreement or disagreement with the statements based on a Likert scale of 1-5 where 1=strongly Disagree, 2=Disagree, 3=Neutral, 4=Agree, and 5=Strongly Agree. The results were presented in Table 1.1.

Table 1.1 Monitoring and Evaluation Budget Allocation and Performance of Socio-economic empowerment Projects

Level of Education	(SD) f(%)	(D) f(%)	(N) f(%)	(A) f(%)	(SA) f(%)	Mean	STD
C1 M&E Budget allocation has led to the success of the socio-economic empowerment project	0(0)	2(3)	15(24)	16(25)	30(48)	4.17	0.900
C2 M&E budget needs to be separated from other project budgets for the success of the socio-economic project	0 (0)	0 (0)	0 (0)	0 (0)	63(100)	5.00	0.000
C3 M&E budget allocation and timeous allocation are key success factors for the successful delivery of the socio-economic empowerment project	0(0)	0(0)	13(21)	24(38)	26(41)	4.21	0.759
C4 Socio-economic empowerment project success depends on M&E budget allocation	0(0)	5(8)	14(22)	15(24)	29(46)	4.08	0.997
C5 M&E budget performance reports are key indicators of the performance of the socio-economic empowerment projects	0(0)	0(0)	12(19)	14(22)	37 (59)	4.40	0.788
Composite Mean and Standard Deviation						4.37	0.745

Table 1.1 presents the responses of monitoring and evaluation budget allocation on the performance of the socio-economic empowerment project a case of Women and Law in Southern Africa Research and Education Trust Project. The results were presented using mean and standard deviation. The

five statements were formulated to assess the level of agreement concerning the M&E budget allocation on the performance of the current project under study.

Statement 1 "M&E budget allocation has led to the success of the project", Results indicated that 16(25%) agreed with the statement, 15(24%) were neutral, 30(48%) strongly agreed and a small number of 2(3%) disagreed with the statement. This item had a mean of 4.17 and a standard deviation of 0.900, which is lower than a composite mean of 4.37 with a standard deviation of 0.745, implying that the statement does not positively influence the performance of the socio-economic empowerment project.

Statement 2 "M&E budgets need to be separated from other project budgets for the success of the project". Results indicated that 63(100%) of the respondents strongly agreed with the statement. This item had a mean of 5.00 and a standard deviation of 0.000, which is higher than a composite mean of 4.37 with a standard deviation of 0.745, implying that the statement positively influences the performance of the socio-economic empowerment project.

Statement 3 "M&E budget allocation and timeous allocation are key success factors for the project". Results indicated that 26(41%) strongly agreed, 24(38%) agreed, and 3(21%) remained neutral. None of the respondents disagreed with the statements. Most respondents 50(79%) agree that M&E budget allocation and timeous allocation are key success factors. This item had a mean of 4.21 and a standard deviation of 0.759, which is lower than a composite mean of 4.37 with a standard deviation of 0.745, implying that the statement does not positively influence the performance of the socio-economic empowerment project.

Statement 4 "Socio-economic empowerment project success depends on M&E budget allocation". Results indicated that 29(46%) strongly agreed, 15(24%) agreed, 14(22%) remained neutral, and the remaining 5(8%) disagreed with the statement. A larger proportion adding up to 44(70%) of the respondent agreed with the statement while 19(30%) did not agree with the statement. This item had a mean of 4.08 and the standard deviation of 0.900, which is lower than a composite mean of 4.37 with a standard deviation of 0.745, implying that the statement does not positively influence the performance of the socio-economic empowerment project.

Statement 5 "M&E budget performance reports are key indicators of the performance of the project under study". Results indicated that 37 (59%) strongly agreed with the statement, 14(22%) agreed and 12(19%) remained neutral. This item had a mean of 4.40 and a standard deviation of 0.788, which is higher than a composite mean of 4.37 with a standard deviation of 0.745, implying that the statement positively influences the performance of the socio-economic empowerment project.

Conclusion

The study was guided by the following objective: To assess the influence of Monitoring and evaluation budget allocation on the performance of the socio-economic empowerment project: A case of Women and Law in Southern Africa Research and Educational Trust Project. Following statistical analysis, the study concluded that there is a limited influence that monitoring and evaluation budgeting has on the performance of the socio-economic empowerment project. The resource-based view theory advocates for adequate allocation of resources to enable the monitoring and evaluation team to execute the activities according to plan. The study further inveterate that monitoring and evaluation budget allocation is key for promoting the independence of the monitoring and evaluation function within the organization. Practically, a recommendation is made to maintain a separate budget for the monitoring and evaluation budget and delineate it even at reporting level for transparent independence of the monitoring and evaluation function.

The study was delimited to assess monitoring and evaluation of budget allocation due to the researcher's time and budget constraints. The COVID-19 pandemic further influenced the mode of interaction with the respondents as it influenced the data collection methodology. The reviewed literature revealed a number of monitoring and evaluation practices that have the potential to influence the performance of the socio-economic empowerment projects and that presents a future research opportunity. Further, some researchers returned the moderating factors necessary for monitoring and evaluating budget allocation to influence the performance of the socio-economic empowerment projects.

Recommendations

Based on this finding, the following recommendations were suggested:

    i.   Separate best practices in that area recommend budget from the entire project team to promote independent spending of such a budget Policy actions by the government to incorporate youths to learn project management skills. This specifically includes the financial aspect under mentorship programs from corporations, firms, and other public entities to incubate their skills for effective project performance.

    ii.   Information relating to budget spending can be communicated with relevant stakeholders by way of sharing budget performance reports.

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Effect of Corporate Social Responsibility on Financial Performance in Nigeria

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Abstract

The study examined corporate social responsibility on financial performance of banks in Nigeria by using earning per share, gross earning and profit after tax as measures of financial performance of banks in Nigeria. The study design was ex-post-facto. Pearson correlation and simple regression analysis were the major statistical tools used for the analysis through the application of SPSS version 20.0 and E-View 8.0 software packages. Correlation results showed that whereas the relationship between corporate social responsibility and earning per share was positive but insignificant, it showed strong, positive and significant relationships with gross earning and profit after tax respectively. Similarly, corporate social responsibility expenditure was found to have insignificant effect on earnings per share, it has significant effect on gross earning and profit after tax of the banks in Nigeria. The study recommends among others that corporate organizations should endeavor to give more to the society in CSR and leverage it to enhance the financial performance of their businesses in the country.

Introduction
1.   Background to the Study

Corporate social responsibility (CSP) is a vital component of corporate policies of large scale firms, including multinationals. This is because the host communities are becoming more and more aware of the effects of their (firms) operations on the immediate community. This, coupled with government policies on corporate social responsibility has compelled firms to understand how important it is to give back to host community for mutual relationship to thrive. The term corporate social responsibility encompasses a variety of issues revolving around firms' interaction and relationship with host community (Olaroyeke & Nasieku, 2015). Ordinarily, companies will not want to engage in any corporate responsibility activities but competition and the need to earn the cooperation of members of the society, especially the locality that is hosting the firm, they cannot but get into one form of CSR or the other.

To buttress the point made above further, Benabou and Tirole (2010) noted that firms engage in a wide range of activities such as being employee-friendly, environment-friendly and ready to provide some social amenities in the environment where the business is domiciled just to win peoples' trust and patronage. The practice of corporate social responsibility by firms has brought about some relief to the members of the community where the business is located. This includes their involvement in health care services, educational services and the provision of some physical infrastructures such as classroom blocks, motorized water boreholes, recreational and civic centers among others. The provision and presence of such developmental projects has endeared the businesses and their owners to members of the communities who are direct beneficiaries of such projects (Richard & Okoye, 2013). Some authors among whom were Andriof and Mclntosh (2011) had opined that the only business an enterprise should concern itself with is business; meaning that firms need not border about any additional responsibility since such activities depletes the firms' profit margin. But Doane (2015) contradicts such views and states that a firm is responsible for all its stakeholders including the host community and therefore should take greater responsibility for the society at large as well as seek to solve social and environmental problems within the operating environment because such activities enhances corporate image of the firms.

On the other hand, firms' financial performance which refers to the degree to which financial objectives of firms are being or has been met (Odetayo, Adeyemi & Sajuigbe, 2014), involves a lot of activities. In

particular, the banking sector is a very competitive area and an act of expenditure on peoples' welfare in the name of corporate social responsibility enhances patronage by the immediate community as well as others members of the society. Besides, there is also prospect for long run benefits in terms of stock appreciation (Kipruto, 2014). Similarly, Iya, Badiya and Faiza (2015) have equally observed that businesses, especially commercial businesses such as banks, can increasingly excel if they learn to do good CSR. Therefore, financial performance of banks does not depend totally on efficient core banking activities but also on some element of charity in the nature of CSR. However, opinions are still divided on the relationship between firm's expenditure on corporate social responsibility and its financial performance in Nigeria, especially, as it concerns commercial businesses of which banking sector happens to be one of. Consequently, this study has been designed to investigate the relationship between CSR expenditure and banks' financial performance in Nigeria.

Statement of the Problem

Many businesses in Nigeria are increasingly becoming aware of the need for spending on corporate social responsibility (CSR) in their immediate host communities and even beyond. Not only has it been made a policy option by businesses but there has also been competition among firms in the same industry about who will spend most (Bitros & Santos, 2012). But the CSR activities are financed from the profit of the businesses. Consequently, it is not clear whether such expenditure portend problems for the banks in Nigeria or a boost towards the enhancement of financial performance of the banks. Furthermore, past studies in the area had produced conflicting results. For instance, whereas Ohiokha, Odion and Akhalumeh (2016) found that corporate social spending has little influence on financial performance of the sampled firms, studies by Babatola (2012) and Richard and Okoye (2013) revealed that there is notable, positive and significant relationship between corporate social responsibility spending and firm's financial performance in Nigeria. This unevenness of research findings has aroused interest to undertake further investigation aimed at establishing the real effect of corporate social responsibility spending on banks financial performance in Nigeria.

Objectives of the Study

The broad objective of the study is to examine the effect of corporate social responsibility on firms' financial performance in Nigeria, using selected banks as the study area: specifically, the study intends to;

(i)   Evaluate the effect of expenditure on corporate social responsibility on earning per share of banks in Nigeria.

(ii)   Determine the effect of expenditure on corporate social responsibility on gross earnings of banks in Nigeria.

(iii)   Ascertain the effect of expenditure on corporate social responsibility on profit after tax of banks in Nigeria.

Statement of Hypotheses

The following null hypotheses were formulated to guide the objectives of the study and strengthen the analysis:

(i)   Expenditure on corporate social responsibility does not have significant positive effect on banks' earnings per share in Nigeria.

(ii)   Expenditure on corporate social responsibility does not have significant positive effect on banks' gross earnings in Nigeria.

(iii)   Expenditure on corporate social responsibility does not have significant positive effect on banks' profit after tax in Nigeria.

Scope of the Study

The study covers seven (7) banks in Nigeria and their corporate social responsibility activities for the year ended 2017. It covers also some selected financial indicators of the banks such as gross earnings, earning per share and profit after tax of the same year. The issue under investigation is the effect of expenditures on corporate social responsibility on banks' financial performance as measured by the indicators. The banks were chosen because they carry out more corporate social responsibility.

2.   Review of the Related Literature
Conceptual Review
Corporate Social Responsibility (CSR)

Corporate social responsibility (CSR) as defined by Olaroyeke and Nasieku (2015) encompasses a variety of issues which revolves around firms' interactions with the society. More precisely, it refers to sets of actions/activities that appear to promote the provision of some social goods beyond the interests of the firm and that which is required by law (McWilliams and Siegel, 2000). The underlying factor in the definition is that CSR activities are on a voluntary basis, which surpasses the firm's legal and contractual obligations. In a related development, Bolten (2012) defined CSR as encompassing the legal, ethical, economic and other discretionary responsibilities that firms/institutions render to society. The implication of the above definition is that firms/institutions operating in a society should operate under the dictates of the law prevalent in a society and conduct its operations in a morally acceptable manner by contributing to the economic well-being of the society among other obligations deemed necessary. It is an important

practice by firms (El Mousadik & El Kandoussi, 2017). It improves the relationship between a firm and a host community.

Other scholars like Vitezic (2011) defined CSR on the basis of their perceptions and understanding of the concept. Vitezic observed that CSR concept implies balance between economic, ecological and social goals, which means distribution of assets among several interest groups. In the same vein, Jamali and Mirshak (2011) defined CSR as a concept whereby companies decide voluntarily to contribute to a better society and a cleaner environment or a situation whereby organizations integrate social and environmental concerns into their business operations and in their interaction with their stakeholders on a voluntary basis. CRS disclosure by firms improves the perception of investors (Gitahi, Nasieku, & Memba, 2018). What has featured prominently in all the definitions offered so far for CSR is the fact that it focuses on bettering the lot of the society or host community as well as the environment at large.

Financial Performance

On the other hand, financial performance is a fusion of an organization's financial health, its ability and capacity to meet its long term financial obligations and its commitments to provide services in the foreseeable future (Awan & Nazish, 2016). Long term objectives represent the results expected from pursuing certain strategies which represent actions to be taken to accomplish the long term objectives. It has equally been recommended that the time frame for objectives and strategies should be consistent, usually from two to five years (Paulik, Majkova, Tykva & Cervinka, 2015). To Odetayo et al. (2014), financial performance in a wider perspective refers to the degree to which financial objectives of firms are being or has been accomplished. It is indeed, the process of measuring the results of a firm's policies and operations in monetary terms. They stated that accounting based indicators such as return on assets (ROA), return on equity (ROE), return on investment (ROI), earning per share (EPS) and profit after tax (PAT), captures a firm's internal efficiency. The indicators are used to measure firm's overall financial performance over a given period of time usually, a year. They can also be used to compare performance of similar firms across the same industry.

Theoretical Framework

The underpinning theory for the study is the Stakeholders Theory developed by Edward Freeman in 1984. Freeman had postulated that business organizations apart from their shareholders have different stakeholders which they must seek to satisfy their interest as a matter of obligation. He reiterates that the stakeholders include all those who affect or are affected by the

activities of the organization directly or indirectly, such as shareholders, employees, customers, host community, government, competitors and the environment. For instance, businesses must play an active social role to better the lots of the society in which they operate (Freeman, 1984 cited in Onwe, 2014). Therefore, it is not enough for managers to focus only on the needs of shareholders or the owners of business alone but it is also important for them to engage in CSR activities that promote the interest of other groups, especially those in the host community who equally affect their performance directly or indirectly by their actions. Owing to the fact that stakeholders vary from firm to firm, CSR activities should start with the identification of stakeholders followed by finding the strategy with which to satisfy and harmonize their expectations. A fundamental characteristic of the stakeholders theory is that it tries to identify the individuals and groups that business organizations are accountable to. The interaction between firms and it stakeholders is the essence of stakeholders theory. The theory is of the view that interest of all stakeholders in a firm must be recognized and attended to and not just that of shareholders only.

Theoretical Exposition

In this section of the literature, we made attempt to bring into focus the relationship between corporate social responsibility activities and various financial performance indicators that were identified in the study. It is clear that the main aim of every investor is to make profit on his/her investment. The returns can come in the form of streams of income/dividend payments and/or capital gains arising from appreciation of value of the investment (Onyeka & Nwankwo, 2016). It has been opined that if CSR is well carried out in the affected areas, the performance of the company involved in the CSR activities is always affected positively. This, it was argued, is a result of the fact that stakeholders have confidence and unflinching support for the company that is carrying out the CSR because the company cares about the environment and the society that live in it. The strong support of the stakeholders as a result, in turn, promotes and enhances the value of the company's shares if it is quoted (Hichem and Henda, 2012). They observe that CSR is a mechanism for an organization to voluntarily integrate social and environmental concerns into its operations and interaction with stakeholders which in turn reflects on the financial performance of the organization. In their opinion, earning per share of companies that have good corporate social responsibility image is always attractive to investors.

Earnings per share (EPS), which is the value of income-dividend divided by total shares multiplied by one hundred, is the most sensitive of all the financial ratio analysis (Resturiyani, 2012). He noted further that there is causal relationship between CSR and profitability of banks. He stated that

because cost/expenditure is made in form of CSR, taxes paid by banks are often times reduced and the business environment is made more friendly. Nadeem, Naveed, Naqvi and Skindar (2014) have also observed that donations play an important role in the development of the society and that it ultimately leads to higher returns (i.e.) the donating company's (net profit) as well as that of investors (EPS). Therefore, involvement of firms in the act of CSR in their environment of operation is an open invitation to good fortunes and prospects for the firms.

The relationship between CSR and financial performance of organizations, especially those in the banking sector represents the least understood area of CSR and its benefits (Cornett, Erhemjamts & Tehranian, 2014). Most researchers have argued that good CSR practices bring about positive corporate reputation which infuses strategic value for firms that engage in it (Okwemba, Chitiavi, Egessa, Musiega & Maniagi, 2014). The idea is that CSR practices, over a given period of time serves as a valuable asset to an organization. It contributes to sustainable development (Behringer & Szegedi, 2016). Firms with assets that are valuable and possesses competitive advantage may expect to earn superior returns (Mishra & Suar, 2010). The viewpoint of positive correlation between CSR and gross earnings of companies suggest that explicit costs are opposite of hidden costs of stakeholders (Ofori, Nyuu & S-Darko, 2014). The viewpoint is proposed from the perspective of avoiding costs to major stakeholders and considering their satisfaction (Khanifar, Nazari, Emami & Ali, 2012). But it is equally viewed that commitment to CSR would result to increased costs to competitiveness and decrease the hidden cost of stakeholders. Adebayo and Oluwale (2012) posited that some stakeholders regard CSR as a symbol of reputation and the company's reputation was improved by actions to support the host community resulting in positive influence on overall revenue (gross earnings) of the company.

Okafor (2011) pointed out that the underlying factor for effective financial performance of firms is active participation of firms in CSR activities in and outside their immediate environment of operation. This, in his opinion, is in line with the law of reciprocity in which such active involvement in CSR by the firms reflect on their (firms') market value profitability of average market price per share (AMPPS) earnings per share (EPS), dividend per share (DPS), earning yield (ED) and dividend yield (DY). It has equally been stated that profit oriented companies maximizes their profit when they take into cognizance the relevance of CSR because it has been shown by many studies from both the emerging and developed economies that CSR is one of the companies' activities that usually boost the level of profitability of the organizations (Abdulrahman, 2013). He notes further that many firms which engage in CSR activities do so because of their expectations that apart from

service to the host community, it would in return increase their level of profitability.

Empirical Review

Akinyele and Adedayo (2017) investigated the impact of corporate social responsibility on the profitability of multinational companies in Nigeria. The study was ex-post-factor design. The result showed that there is weak negative correlation between CSR spending and profit after tax. It showed also that CSR spending exerts negative insignificant impact on profit after tax and a unidirectional causal relationship running from CSR spending to profit after tax for Oando PLC among all the selected multinationals in the study. Also, Ohiokha, Odion and Akhalumenh (2016) analyzed the impact of CSR on the financial performance of firms in Nigeria. The study adopted pooled survey research design. From the analysis of 29 firms over a period of 2005 to 2010, the result revealed that CSR spending had little impact on the financial performance of the sampled companies.

In a similar vein, Olaroyeke and Nasieku (2015) carried out a study on the effect of CSR on the performance of listed manufacturing companies in Nigeria. Descriptive techniques were employed. The result showed that CSR activities have moderate positive effect on the performance of manufacturing companies. In another study, Richard and Okoye (2013) examined the impact of corporate social responsibility on deposit money banks in Nigeria. Descriptive survey design was adopted. The results showed that CSR has great impact on the society adding to the infrastructure and hence development of the society. It was equally found that CSR enhances the performance of deposit money banks. Umoren, Isiavwe-Ogbari and Alolagbe (2016) conducted a study on effect of CSR on firms performance in Nigeria, using listed firms in the Nigerian Stock Exchange. Descriptive survey design was adopted and the result revealed that CSR was mainly influenced by company size and audit type and not by profitability. It was also revealed that CSR promotes firms financial perforamcen in Nigeria.

Paulik, Majkova, Tykva and Cervinka (2015) examined the application of CSR measuring model in commercial banks in relation to their financial performance in Czech Republic. The study employed descriptive statistics and Pearson moment correlation. The result of the study showed a positive strong relationship between CSR index and financial performance of the banks. In particular, the correlation coefficient of profit after tax was the highest, 0.969. Okwemba, Chitiavi, Egessa, Musiega and Maniagi (2014) examined the impact of CSR on financial performance of banks in Katamega, Kenya. The study aimed at ascertaining whether embracing CSR practices actually leads to increased gross earnings (GE) and profit after tax (PAT). The study adopted descriptive survey design. The result of the study showed a statistically

significant relationship between CSR practices and financial performance of firms. The study concludes that CSR practices impact gross earnings and profit after tax significantly in the banking industry. In another study, Onyeka and Nwankwo (2016) studied the impact of CSR reporting on profitability of Nigerian manufacturing firms. The study adopted content analysis. The result showed that CSR has significant positive impact on net profit of the manufacturing firms in Nigeria.

3.   Methodology
Research Design
This study adopts ex-post-facto research design. The design is considered appropriate for the study because the independent variables are being studied in retrospect, seeking plausible and possible relations and the likely effects, the changes in independent variables could produce on dependent variable. The independent variables are earnings per share, gross earnings and profit after tax of selected banks in Nigeria.

Sources of Data
The data for the study are secondary data sourced from the 2017 annual returns of the banks in Nigeria. Seven banks were selected through purposive sampling technique. They include Access Bank, Frist Bank, Guaranty Trust Bank (GTB), Stanbic IBTC, United Bank for Africa (UBA), Union Bank and Zenith Bank. Precisely, expenditures on corporate social responsibility of the selected banks were extracted alongside their financial performance represented by earning per share, gross earnings and profit after tax of the banks.

Model Specification
The functional equation is;
$$FP = f(CSR) \qquad (1)$$
Where:
  FP   = Financial Performance of Banks is represented by earning per share (EPS), gross earnings (GE) and Profit after tax (PAT).
  CSR = Expenditure on Corporate Social Responsibility
Specifying the models econometrically, it becomes:
$$EPS = \beta_o + \beta_1 csr + \mu_t \qquad (2)$$
$$GE = \beta_o + \beta_1 csr + \mu_t \qquad (3)$$
$$PAT = \beta_o + \beta_1 csr + \mu_t \qquad (4)$$
and log of the models are specified as:
$$\text{Log eps} = \beta_o + \beta_1 \log csr + \mu_t \qquad (5)$$
$$\text{Log ge} = \beta_o + \beta_1 \log csr + \mu_t \qquad (6)$$

$$\text{Logpat} = \beta_o + \beta_1 \text{logcsr} + \mu_t \qquad (7)$$

Where:

EPS	= Earning per share
GE	= Gross earnings
PAT	= Profit after tax
CSR	= Corporate Social Responsibility
μ_t	= White noise or Stochastic error term
β_o	= The intercept

and $\beta_1 \beta_2$ and β_3 are the parameters (i.e.) coefficients of the independent variables with the *a priori* of $\beta_1 > 0$, $\beta_2 > 0$ and $\beta_3 > 0$.

Analytical Techniques

Correlation and simple regression analysis were employed for the analysis. The correlation analysis helped to determine the relationships between and among variables. The use of simple regression analysis is not only for its optimal properties of linearity, unbiasedness and minimum variance, but also of its computational simplicity (Koutsouylannis, 2003). The econometric view (E-View 8) and SPSS version 20 software packages were used for the analysis at 0.05 level of significance.

4.   Data Presentation and Analysis
4.1.   Data on Corporate Social Responsibility and Performance Indicators of the Banks

Table 4.1: Banks CSR Spending and Financial Performance

S/N	Bank	CSR	GE	EPS	PAT (₦)
1.	Access Bank	1,954,945,601	352,001,000,000	1.85	58,100,201,000
2.	First Bank	1,389,527,800	591,608,000,000	2.67	98,785,000,000
3.	GTB	681,752,427.30	258,100,061,000	3.18	101,456,709,000
4.	Stanbic IBTC	481,567,300	16,340,001,000	1.67	15,137,000,000
5.	UBA	589,067,654	306,018,000,000	1.28	53,805,000,000
6.	Union Bank	301,245,000	127,732,100,000	1.25	29,847,000,000
7.	Zenith Bank	3,937,261,000	481,074,000,000	3.27	108,109,000,000

Source: Bank's Annual Report, 2017

The above table shows the expenditure on CSR, gross earning, earning per share and profit after tax of the selected banks in the study.

Table 4.2: Logarithm Nature of the Variables in the Study

S/N	Bank	LOGCSR	LOGGE	LOGEPS	LOGPAT
1.	Access Bank	21.68514	27.22453	0.641280	24.48692
2.	First Bank	21.46128	26.78134	0.85609	25.26544
3.	GTB	20.91375	26.44076	1.16478	26.31059
4.	Stanbic IBTC	19.84596	23.59562	0.38002	23.39761
5.	UBA	19.85676	26.19341	0.27875	24.68352
6.	Union Bank	19.52385	25.61214	0.21065	24.12652
7.	Zenith Bank	21.96781	26.84223	1.12008	25.62137

Source: Computation from (E-View 8)

4.2.   Correlation Analysis and Linear Diagnostics

Table 4.3: Correlation Analysis for Logged Values

Variables		Logcsr	Logeps	Logge	Logpat
Logcsr	Pearson Correlation	1	.429	.598*	.706**
	Sig. (2-tailed)		.127	.049	.005
	Sum of Squares	12.765	8.536	8.706	9.753
	Cross-Products Covariance	1.063	.567	.671	.765
	N	7	7	7	7
Logeps	Pearson Correlation	.429	1	.423	.687**
	Sig. (2-tailed)	.127		1.25	.007
	Sum of Squares	8.536	23.173	9.274	12.546
	Cross-Products Covariance	.567	1.794	.708	.961
	N	7	7	7	7
Logge	Pearson Correlation	.598*	.423	1	.558*
	Sig. (2-tailed)	.049	.125		.037
	Sum of Squares	8.706	9.274	18.247	9.312
	Cross-Products Covariance	.671	.708	1.476	.705
	N	7	7	7	7
Logpat	Pearson Correlation	.706**	.687**	.558*	1
	Sig. (2-tailed)	.005	.007	.037	
	Sum of Squares	9.753	12.546	9.312	13.176
	Cross-Products Covariance	.765	.961	.705	1.082
	N	7	7	7	7

Source: SPSS, Version 20.0

Table 4.3 is the presentation of correlation results between the dependent variable and the independent variables as well as among independent variables. The results show that the following relationships exist:

- logcsr and logeps: weak positive but insignificant relationship ($r = .429$; $p > 0.01$; $n = 7$)
- logcsr and logge: strong positive and significant relationship ($r = .598$; $p < 0.05$; $n = 7$)

- logcsr and logpat: strong positive and significant relationship ($r = .706$; $p < 0.01$; $n = 7$)

Linear Diagnostics

The following tests were carried out to determine basic assumptions required for linear regression according to Gujarati (2009), the assumptions are also necessary for parametric test for hypothesis and they are: normality test, test of homoscedasticity and test of serial auto-correlation. We selected JarqueBera Normality test and chart spread, Breusch-Godfrey Heteroskedasticity test, the ADF unit Root test for auto-correlation and Ramsey RESET model specification test.

Table 4.4: Summary of Descriptive Statistics

	LOGCSR	LOGEPS	LOGGE	LOGPAT
Mean	19.85	0.12	25.43	23.89
Minimum	18.3	-2.75	22.64	21.61
Maximum	22.72	2.78	26.88	25.28
Std. Dev.	1.05	1.35	1.22	1.05
Skewness	0.014	-0.3	-1.08	-0.43
Kurtosis	2.5	3.64	3.34	2.78
Jarque-Bera	0.27	0.32	2.73	0.44
Probability	0.88	0.86	0.27	0.82
Observations	7	7	7	7

Source: Author's Computation using E-View 8.0

Normality and Stationarity Tests

Breusch-Pagan-Godfrey Heteroskedasticity Test

This test asymmetrically follows a chi-square distribution with degrees of freedom equal to the number of regressors excluding the constant term.

Model One

Logeps= β_o + logcrs + μ_t

H_o: There is no heteroscedasticity problem in the proposed model

H_1:   There is heteroscedasticity problem in the proposed model

Table 4.5: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-Statistic	2.394912	Prob.F(1,5)	0.1476
Obs* R-Squared	2.338057	Prob.Chi-Square (1)	0.1275
Scaled explained SS	3.502901	Prob. Chi-Square (1)	0.0614

Source: Researcher's Computation using E-View 8.0

The result shows absence of heteroscedasticity in the data. Therefore, the heteroscedasticity assumption has not been violated. The null hypothesis is not rejected.

Model Two

$Logge = \beta_o + \beta_1 logcrs + \mu_t$

H_o: There is no heteroscedasticity problem in the proposed model
H_1:   There is heteroscedasticity problem in the proposed model

Table 4.6: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-Statistic	0.473248	Prob.F(1,5)	0.5047
Obs* R-Squared	0.531217	Prob.Chi-Square (1)	0.4673
Scaled explained SS	0.637285	Prob. Chi-Square (1)	0.4248

Source: Researcher's Computation using E-View 8.0

The result shows that the assumption has not been violated therefore the null hypothesis is not rejected.

Model Three

$Logpat = \beta_o + \beta_1 logcrs + \mu_t$

H_o: There is no heteroscedasticity problem in the proposed model
H_1:   There is heteroscedasticity problem in the proposed model

Table 4.7: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-Statistic	0.647278	Prob.F(1,5)	0.4367
Obs* R-Squared	0.716491	Prob.Chi-Square (1)	0.3975
Scaled explained SS	0.226384	Prob. Chi-Square (1)	0.6346

Source: Researcher's Computation using E-View 8.0

The result shows there is no heteroscedasticity problem in the data. The implication is that the assumption has not been violated. Therefore the alternative hypothesis is rejected.

Unit-Root Test

This test was carried out using Augmented Dickey-Fuller (ADF). The idea is to test for stationarity of data because non-stationary data often produce spurious regression results.

Table 4.8: ADF Stationarity Test for Logcsr

		t-statistic	Prob.*
Augmented Dickey-Fuller test-Statistic		-4.797429	0.0035
Test Critical values	1% level	-4.121970	
	5% level	03.144921	
	10% level	-2.713753	

Source: Computed from E-View 8.0

The test shows that ADF result is greater than the Mackinnon 5% critical value in absolute terms at first differencing, thus the variable is stationary and the null hypothesis of non-stationary is rejected.

Table 4.9: ADF Stationarity Test for Logeps

		t-statistic	Prob.*
Augmented Dickey-Fuller test-Statistic		-4.608701	0.0038
Test Critical values	1% level	-4.057922	
	5% level	-3.119935	
	10% level	-2.701108	

Source: Computed from E-View 8.0

The table shows that ADF test result is greater than the Mackinnon 5% critical value in absolute terms at level thus the variable is stationary and the null hypothesis of non-stationary is rejected.

Table 4.10: ADF Stationarity Test for Logge

		t-statistic	Prob.*
Augmented Dickey-Fuller test-Statistic		-4.986679	0.0023
Test Critical values	1% level	-4.057910	
	5% level	-3.119820	
	10% level	-2.701104	

Source: Computed from E-View 8.0

The test shows that ADF result is greater than the Mackinnon 5% critical value in absolute term at level. Thus the variable is stationary and the null hypothesis is rejected.

Table 4.11: ADF Stationarity Test for Logpat

		t-statistic	Prob.*
Augmented Dickey-Fuller test-Statistic		-4.972821	0.0021
Test Critical values	1% level	-4.057923	
	5% level	-3.119864	
	10% level	-2.711035	

Source: Computed from E-View 8.0

From the above table, it could be seen that the ADF test result is greater than the Mackinnon 5% critical values in absolute terms at first differencing. Thus the variable is stationary and the null hypothesis is rejected.

Test of Study Hypotheses

The hypotheses formulated to guide the objectives of the study and strengthen the analysis were restated and tested in this section of the analysis to verify the claims of the null hypotheses and decide whether to accept or reject them.

Re-Statement of the Hypotheses
1. H_o: Expenditure on corporate social responsibility does not have significant positive effect on banks' earning per share in Nigeria.

H_1: Expenditure on corporate social responsibility has significant positive effect on banks' earning per share in Nigeria.

2. H_o: Expenditure on corporate social responsibility does not have significant positive effect on banks' gross earning in Nigeria.

H_1: Expenditure on corporate social responsibility has significant positive effect on banks' gross earning in Nigeria.

3. H_o: Expenditure on corporate social responsibility does not have significant positive effect on banks' profit after tax in Nigeria.

H_o: Expenditure on corporate social responsibility has significant positive effect on banks' profit after tax in Nigeria.

Regression Results and Interpretation

Table 12: Summary of Regression Result for Model I

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	-10.74761	6.806127	-1.579097	0.1405
LOGCSR	0.544714	0.340985	1.597228	0.1364
R-Squared	0.175305	Mean dependent var.		0.109374
Adjusted R-Squared	0.106592	S.D dependent var.		1.335108
S.E. of regression	1.261858	Akaike info criterion		3.434767
Sum of squared resid.	19.110551	Schwarz criterion		3.526065
Log likelihood	-22.04347	Hannan-Quinn criterion		3.426327
F-Statistic	2.550828	Durbin-Watson stat.		2.076092
Prob (F-Statistic)	0.136224			

Estimated Model: logeps = 10.75 + 0.54logcsr

The result in Table 4.12 shows that F-Statistic is 2.500828 and it means that overall, the model is statistically insignificant because $P_{0.136224}$ is greater than 0.05 significance level. The table shows equally that the coefficient of earning per share is 0.54 and it means that when corporate social responsibility is increased by one unit, earning per share will not change by any percentage. The t-value of 1.597 and its corresponding probability of 0.136 shows that the coefficient is not significant because $P_{0.136}$ is greater than 0.05 significant level. Consequently, the null hypothesis was accepted and we conclude that expenditure on corporate social responsibility does not have significant positive effect on banks' earning per share in Nigeria.

Table 13: Summary of Regression Result for Model II

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	12.75218	5.786614	2.203748	0.0479
LOGCSR	0.635684	0.289927	2.192624	0.0486
R-Squared	0.286108	Mean dependent var.		25.424391
Adjusted R-Squared	0.226570	S.D dependent var.		1.219874
S.E. of regression	1.072934	Akaike info criterion		3.110217
Sum of squared resid.	12.81501	Schwarz criterion		3.201512
Log likelihood	-19.77251	Hannan-Quinn criterion		3.101767
F-Statistic	4.807583	Durbin-Watson stat.		2.745203
Prob (F-Statistic)	0.038898			

Estimated Model: logge = 12.75 + 0.64logcsr

From the above table, F-Statistic of 4.81 is an indication that the model is overall statistically significant because $P_{0.039}$ is less than 0.05. It shows also that the coefficient of gross earning is 0.64 and it means that when corporate social responsibility is increased by one unit, the gross earning of the banks will increase by 64 percent. The t-value of 2.19 and its corresponding probability shows that the coefficient is significant and positive. Consequently, the null hypothesis was rejected while the alternative which suggests that expenditure on corporate social responsibility have significant positive effect on banks gross earning in Nigeria was accepted.

Table 14: Summary of Regression Result for Model III

Variable	Coefficient	Std. Error	t-statistic	Prob.
C	9.551588	4.149541	2.301875	0.0405
LOGCSR	0.718109	0.207872	3.454352	0.0059
R-Squared	0.498582	Mean dependent var.		22.86714
Adjusted R-Squared	0.456776	S.D dependent var.		1.043891
S.E. of regression	0.769374	Akaike info criterion		2.445083
Sum of squared resid.	7.103148	Schwarz criterion		2.536467
Log likelihood	-15.11552	Hannan-Quinn criterion		2.436728
F-Statistic	11.93187	Durbin-Watson stat.		1.919874
Prob (F-Statistic)	0.004756			

Estimated Model: logpat = 9.55 + 0.72logcsr

Table 4.14 above shows that F-Statistic is 11.932 and it is an indication that the model is statistically significant because $P_{0.005}$ is less than 0.05 significance level. The table shows equally that the coefficient of profit after tax is 0.72 and it means that when expenditure on corporate social responsibility is increased by one unit, profit after tax of the banks will increase to 72 percent. Similarly, the t-value of 3.454 and its corresponding probability level of 0.006 is an indication that the coefficient is significant and positive because 0.006 is less than 0.05 level of significance. Therefore, the null hypothesis was rejected while the alternative which suggests that

expenditure on corporate social responsibility have significant positive effect on banks' profit after tax in Nigeria was accepted.

Discussion of Research Results

The regression result for the first test of hypothesis which sought to ascertain the effect of expenditure on corporate social responsibility on banks' earnings per share in Nigeria, showed there is no significant effect thereby confirming the result of the correlation analysis on the variables which showed insignificant positive relationship. The result is consistent with that of Igbal, Ahmad, Basheer and Nadeem (2012) when they found from their study that corporate social responsibility has no significant effect on market value of companies in Pakistan. However, the finding of this study and that of Igbal et al (2012) is quite strange because the literature has raised substantial awareness on the positive effect of corporate social responsibility on financial performance of firms across the globe. Perhaps, there may be need for further studies to real establish the causative effect of CSR on firms financial performance. It could also be that the expenditures on CSR are not big enough to impact the firms' earning per share financial ratio.

Concerning the second test of hypothesis, the result showed that expenditure on corporate social responsibility have significant positive effect on gross earning of banks in Nigeria. The result is consistent with those of Paulik et al (2015) and Ofori et al (2014) when they found in their separate efforts that expenditure on corporate social responsibility has significant positive impact on gross earning of banks as a financial performance measure of those banks in Nigeria. The result couldn't have been otherwise because corporate organizations are increasingly becoming aware that expenditure in their host communities is one of the major ways of marketing their organizations' products to the people. No wonder that many corporate outfits have enunciated strong company policies in favour of active involvement in corporate social responsibility activities in the society. Indeed, improved relationships with host communities bring economic benefit to firms, especially banks where virtually everybody transacts and invests no matter how little. Such benefits include patronage which leads to product brand enhancement.

Finally, the result of the third test of hypothesis showed that expenditure on corporate social responsibility have significant positive effect on profit after tax of banks in Nigeria. The result is in line with that of Monsuru and Abdulazeez (2014) when they found that corporate social responsibility activities in the society positively affect corporate profitability. It is also consistent with the result of Amole, Adebiyi and Awolaja (2012) when they found that positive and significant relationship exists between corporate social responsibility spending and profitability of banks in Nigeria. Profit after tax is

the most important financial performance index of corporate organizations. The fact that corporate social responsibility spending can impact it is an indication that CSR expenditure is a worthwhile exercise. Apart from the motive of service to the host community, most firms engage on CSR activities because of the expectation that it would in return increase the level of their profitability.

Conclusion

The study examined the effect of corporate social responsibility expenditures on financial performance of Nigerian banks. The study evaluated the said effect on banks' earning per share, gross earning and profit after tax. Through the application of Pearson correlation analysis, it was found that the relationship between corporate social responsibility earning per share of the banks is insignificant but positive while that of gross earning was positive and moderately significant. However, the relationship between CSR and profit after tax of the banks is positive, strong and significant. Furthermore, the result of the simple linear regression analysis showed that corporate social responsibility has no significant effect on earning per share of banks in Nigeria while it has significant positive effect on gross earning and profit after tax of the banks as corporate entities. The implication is that fundamentally, expenditure on corporate social responsibility is a way of enhancing the wellbeing of the society and the corporate organization as they (corporate organizations) are increasingly becoming aware of the need to participate in immediate community development. The finding of no significant effect could be because the expenditures are not yet big enough to cause significant effect on the index. Perhaps, higher investment in CSR may be what is necessary for the impact to become significant. Corporate social responsibility expenditures has become very popular because it has been found to lead to firms' competitiveness. However, the findings of the study may not be generalized beyond the institutions studied and years due to methodological limitations.

Recommendations

Based on the findings and conclusion drawn from it, the study recommends as follows:

1. Banks should increase their dedication to giving back to the society, by formulating an inclusive framework for CSR expenditure to boost the standard of living of the members of their host communities to a level that their social reputation will engender positive and substantial increase in their financial performance.
2. Expenditures on CSR should be increased to enable it reflect on the earnings the stakeholders get per share because there is no statistically

significant effect of CSR on earning per share of banks in Nigeria. The implication is that the amount banks give out in CSR is insufficient.

3. Trends observed in the studies is that most of these banks tends to do more in economic responsibilities than legal and ethical responsibilities

4. Future Research on Corporate Social Responsibility of Manufacturing and Service Firms is recommended.

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Le Niveau d'adoption de l'intelligence d'affaires par les PME Marocaines : Evaluation et Facteurs Determinants

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Résumé

L'objectif de notre travail de recherche est d'évaluer le niveau d'adoption de l'intelligence d'affaires (Business Intelligence) par les PME marocaines tout en expliquant les facteurs déterminants. Pour ce faire, nous avons conduit une enquête auprès d'un échantillon de PME marocaines pour essayer d'identifier le niveau de maturité de ces entreprises par rapport à l'adoption de l'intelligence d'affaires selon le modèle d'évolution de l'information de Davis et al. Puis nous avons essayé d'expliquer ce positionnement en fonction des quatre dimensions du modèle d'adoption des technologies de l'information pour les petites entreprises de James Thong à savoir la dimension technologique, la dimension environnementale, la dimension organisationnelle et enfin la dimension du propriétaire-dirigeant d'entreprise. Les résultats obtenus nous ont permis d'identifier le classement de la PME marocaine au niveau de la deuxième strate du modèle d'évolution de l'information. Pour ce qui est de l'analyse des variables nous avons opté pour la méthode des équations structurelles selon l'approche PLS. Dans le cadre de cette méthode nous avons procédé à l'évaluation du modèle de mesure ainsi que le modèle structurel à travers l'évaluation d'une série d'indicateurs qui nous ont permis de valider ces deux modèles et de prouver la qualité globale du modèle construit. Concernant les déterminants du niveau d'adoption de l'intelligence d'affaires par les PME marocaines nous avons pu

valider deux hypothèses (caractéristiques environnementales et organisationnelles), valider partiellement une hypothèse (caractéristiques technologiques) et réfuter une hypothèse (caractéristiques du propriétaire-dirigeant).

Mots clés : Intelligence d'affaires, PME marocaines, Modèle d'évolution de l'information, Modèle de mise en place des systèmes d'informations pour les petites entreprises

Business Intelligence Adoption Level within Moroccan Small and Mid-Size Enterprises: Evaluation and Determinant Factors

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Abstract
       The objective of our research is to evaluate the Business Intelligence adoption level within Moroccan small and mid-size enterprises (SMEs) and explaining the determining factors. To do so, we conducted a survey among a sample of Moroccan SMEs to identify the level of maturity of these companies regarding business intelligence adoption according to the information evolution model of Davis and al. Then we tried to explain this positioning according to the four dimensions of the information technology adoption for small businesses model of James Thong, namely the technological dimension, the environmental dimension, the organizational dimension and finally the owner-manager dimension. The results obtained allowed us to classify Moroccan SMEs at the second level of the information evolution model. For the variable analysis we opted for the PLS approach of the structural equations modelling. Within this framework we proceeded to the evaluation of the measurement model as well as the structural model through the evaluation of a series of indicators which allowed us to validate these two models and to prove the global quality of the constructed model. Regarding the determinants of Business Intelligence adoption within Moroccan SMEs we were finally able to validate two hypotheses (environmental and organizational characteristics), partially validate one hypothesis (technological characteristics) and reject one hypothesis (owner-manager characteristics).

Introduction

Les technologies de l'information et de la communication ont transformé notre monde. Cette transformation a impacté notre mode de vie ainsi que la manière avec laquelle nous percevons notre environnement. Au niveau de l'entreprise, ces technologies ont modifié l'environnement d'affaires et ont poussé ces entités vers l'acquisition et l'adoption de ces technologies. Ce fait n'est pas le simple fruit du hasard, or l'une des caractéristiques les plus dominantes de l'environnement actuel est la forte intensité informationnelle. En effet, nous assistons à une explosion en termes de quantité et de nature des données produites. Entre données structurées ou non structurées, le défi des entreprises d'aujourd'hui est de pouvoir exploiter ce capital informationnel et de le transformer en connaissances afin d'en tirer un avantage concurrentiel. D'un point de vue stratégique il est très important pour l'organisation quel que soit le milieu où elle opère de gérer efficacement le flux de données de manière à accroitre sa capacité d'apprentissage afin de s'adapter rapidement aux fluctuations de son environnement.

Pour ce faire, l'intelligence d'affaires est la technologie d'information qui permet une gestion efficace des données et leur transformation en information puis en connaissances pouvant orienter efficacement la prise de décision. Le terme intelligence d'affaires ou informatique décisionnelle (ou encore business intelligence en anglais) combine architecture, bases de données, outils d'analyse, applications et méthodologies d'implémentation. L'objectif principal de l'intelligence d'affaires est de permettre un accès interactif aux données, permettre leur manipulation et donner aux managers et analystes la possibilité d'effectuer les analyses appropriées. A travers l'analyse des données, à la fois historiques et actuelles, l'analyse des différents rapports qui existent entre ces données ainsi que l'analyse des performances, les managers de l'entreprise d'aujourd'hui ont la possibilité de prendre des décisions éclairées et ne plus se baser sur leur intuition comme unique moyen de s'orienter et de prendre des décisions. Cependant, malgré le fait que les outils d'intelligence d'affaires présentent de nombreux avantages pour l'entreprise, leur implémentation demeure susceptible de faire face à certains obstacles notamment le manque de ressources à la fois humaines, financières et techniques. Ce manque de ressources est l'une des caractéristiques phare que la plupart des chercheurs évoquent lors de l'étude des petites et moyennes entreprises – PME - dans une multitude de pays du globe. En effet, cette catégorie d'entreprises se caractérise par des ressources financières technologiques et humaines très limitées par rapport aux grandes entreprises

les poussant à réfléchir plus que deux fois l'adoption de telles outils technologiques.

A l'instar de la grande majorité des pays du monde, les PME marocaines constituent plus de 96% de l'ensemble des entreprises marocaines et jouent un rôle prépondérant dans le développement de son économie et de son territoire. Ces entreprises constituent un véritable facteur de partage de richesses et de promotion de l'emploi. L'importance de la PME ainsi que sa fragilité obligent les décideurs à se pencher sur sa promotion, son développement et sur les différents problèmes qui lui font face. Dans ce sens, le gouvernement marocain à travers ses organes de tutelle a mis en place toute une panoplie de stratégies et de programmes qui constituent de véritables brèches pour les PME vers à la fois l'intégration des technologies de l'information et de la communication en tant que levier leur permettant l'amélioration de leur productivité d'une part et un terrain favorable à l'adoption de l'intelligence d'affaires en tant qu'outils leurs permettant l'orientation de la prise de décision. La littérature sur l'adoption des technologies de l'information par les entreprises marocaines est très riche. Ces études varient, par exemple, entre celles qui traitent du volet de l'implémentation des ERP et celles qui analysent les facteurs qui influencent l'adoption du commerce électronique ou encore d'autres qui se penchent sur les facteurs qui influencent l'adoption du e-learning. Cependant, les études portant sur les différents aspects à la fois techniques et managériales liés à l'adoption de l'intelligence d'affaires plus particulièrement au niveau de la PME marocaine sont très rares. Notre étude se veut donc être une opportunité pour essayer de combler ce vide théorique relatif à cet aspect, pour faire un état des lieux de l'adoption des outils d'intelligence d'affaires par les PME marocaines et enfin expliquer les facteurs qui influencent leur adoption par cette catégorie d'entreprises.

Au niveau de cet article, nous allons en premier lieu présenter une revue de littérature sur l'intelligence d'affaires pour essayer de mettre au clair sa définition, sa démarche ainsi que les différents concepts qui lui sont relatifs. Nous allons par la suite présenter le modèle d'évolution de l'information (Davis et al., 2006) qui est un modèle de maturité de l'intelligence d'affaires largement utilisé dans le monde, et que nous allons mobiliser dans le cadre de notre étude comme modèle de base pour évaluer la position qu'occupe la PME marocaine sur sa matrice. Pour essayer d'expliquer les facteurs qui déterminent la position de la PME marocaine par rapport à l'adoption de l'intelligence d'affaires nous allons aborder la question de l'adoption de l'innovation et allons présenter le modèle d'adoption des technologies de l'information pour les petites entreprises (Thong, 1999) de James Thong qui entre dans le cadre de l'approche multi perspectives de l'adoption de l'innovation. Nous allons mobiliser ce modèle pour expliquer l'adoption de

l'intelligence d'affaires par les PME marocaines en fonction de ses quatre dimensions à savoir la dimension technologique, la dimension environnementale, la dimension organisationnelle et enfin la dimension du propriétaire-dirigeant d'entreprise. Nous allons conduire une étude quantitative à travers l'administration d'un questionnaire auprès d'un échantillon de PME marocaines. Les données recueillies feront l'objet d'une analyse approfondie par la méthode des équations structurelles selon l'approche PLS.

1. Promotion de l'adoption des technologies de l'information et de l'intelligence d'affaires au niveau des PME marocaines

La PME est la forme la plus commune d'organisation d'affaires. Cette catégorie d'entreprises cristallise l'attention des pouvoirs publics aussi bien dans les pays développés que dans les pays en voie de développement (Dieng, 2018) du fait qu'elle constitue le gros lot du tissu économique mondial et qu'elle est amenée à évoluer dans un environnement d'affaires fortement concurrentiel et en perpétuelles mutations due à la globalisation des marchés et ses nombreuses conséquences. Dans la zone de l'OCDE (OCDE, 2000), les PME jouent un rôle majeur dans la croissance économique et ce sont elles qui créent la plupart des nouveaux emplois. Plus de 95 % des entreprises de cette zone sont des PME, qui représentent 60 à 70 % de l'emploi dans la plupart des pays. Cependant, les caractéristiques organisationnelles des PME ainsi que les difficultés qui lui font face engendrent sa vulnérabilité. Au Maroc, à l'instar de la plupart des pays du globe, la PME constitue le socle du tissu économique et joue un rôle prépondérant dans le développement de son économie et de son territoire. Cette catégorie d'entreprises constitue un véritable facteur de partage de richesses et de promotion de l'emploi. La position occupée par la PME ainsi que sa fragilité obligent les décideurs à lui donner de l'importance et à se focaliser sur sa promotion, son développement et sur les différents problèmes et menaces qui lui font face. C'est d'ailleurs l'objectif derrière la création de l'ANPME (l'Agence Nationale pour la promotion de la PME, Maroc PME actuellement) qui a été mise en place depuis l'année 2002 ou une autre entité encore plus récente à savoir l'Agence pour le Développement du Digitale. En effet, ces instances, ont pris les technologies de l'information et de la communication comme cheval de bataille pour aider les PME marocaines à se développer.

En effet, en 2009, le « Plan Maroc Numeric 2013 » a vu le jour avec pour principaux objectifs de positionner le Maroc comme un hub technologique régional, et de faire des TIC un pilier de base pour une économie marocaine fondée sur la connaissance. Ce plan, dans le cadre duquel s'inscrivait le programme Mousanada IT de l'ANPME (Agence Nationale pour la Promotion de la Petite et Moyenne Entreprise), a visé

l'accompagnement de sept cents PME par an dans leur démarche d'amélioration de leur productivité par le biais de l'accélération de l'usage des TIC. En vue d'assurer la continuité de la dynamique créée par la stratégie nationale « Maroc Numeric 2013 » et de booster davantage le développement du secteur de l'économie numérique, le Maroc, par le biais de son Ministère de l'Industrie, du Commerce, de l'investissement et de l'économie numérique, a élaboré la stratégie « Maroc Digital 2020 ». Parmi les principaux objectifs de cette stratégie figure la connexion de 20% des PME marocaines. Le « Plan Maroc Numérique 2013 » ainsi que la stratégie « Maroc Digital 2020 » constituent de véritables brèches vers l'adoption de l'intelligence d'affaires par les PME marocaines. En effet, dans un contexte où les sources d'information sont variées, complexes, volumineuses et éclatés, la PME marocaine se trouve, plus que n'importe quelle autre époque, dans une obligation réelle d'utiliser des solutions informatiques (que sont les outils d'intelligence d'affaires) lui permettant de consolider et d'analyser les données en provenance de son environnement, à la fois, interne et externe afin d'améliorer son processus de prise de décision.

2.   Aperçu historique, définition et importance de l'intelligence d'affaires

Le terme intelligence d'affaires (business intelligence) a été utilisé pour la première fois en 1958 (Grossmann & Rinderle-Ma, 2015) par H.P. Luhn dans un article publié dans *l'IBM JOURNAL* (Luhn, 1958). Ce terme générique a été introduit en 1989 par Howard Dresner, analyste chez le Gartner Groupe, pour décrire toute une panoplie de concepts et de méthodes basés sur l'utilisation de l'outil informatique et ayant pour objet l'amélioration de la prise de décision au sein des organisations. Il englobe généralement les systèmes permettant, à partir des données de l'entreprise et par l'intermédiaire d'outils d'analyse et de reporting, d'améliorer le processus de prise de décision au sein de l'entreprise.

Intelligence d'affaire, informatique décisionnel (ou business intelligence en anglais) fait référence au processus par lequel l'entreprise rassemble, analyse et traite ses données afin d'améliorer son processus de prise de décision et de le rendre plus efficace et efficient.

L'objectif majeur de l'intelligence d'affaires est de permettre un accès interactif (des fois en temps réel) aux données, permettre leur manipulation et donner aux managers et analystes la possibilité d'effectuer les analyses appropriées. A travers l'analyse des données, à la fois historiques et actuelles, l'analyse des différents rapports qui existent entre ces données ainsi que l'analyse des performances de l'entreprise, la prise de décision devient un processus plus efficace et permet de générer davantage de valeur (Turban, 2011). Duverneuil définit l'intelligence d'affaires comme étant l'ensemble

des moyens, outils et méthodes qui supportent le processus de collecte, de consolidation, de modélisation, d'analyse et de restitution des informations (Duverneuil, 2009). Le processus d'intelligence d'affaire vise à récupérer des données brutes (contenues dans des outils de type ERP, CRM, sources externes émanant des clients et des fournisseurs, données sur le marché, …), à les transformer en information et à les synthétiser puis les diffuser sous forme de tableaux de bord ou reportings. Un bon système d'intelligence d'affaires permet d'optimiser, essentiellement, les flux de données d'une entreprise. Ce système peut permettre l'atteinte de résultats remarquables avec un minimum d'efforts tout en excellant en termes d'efficacité. Cela peut être matérialisé par l'optimisation des activités au niveau des postes de travail, l'automatisation d'un ou plusieurs processus, ou même l'orientation de la stratégie publicitaire par exemple. Ces actions ainsi que d'autres peuvent être le résultat de processus de suivi de l'activité de l'entreprise par le biais de l'intelligence d'affaires. L'intelligence d'affaires est donc un processus dont le résultat se matérialise par l'amélioration de l'avantage concurrentiel d'une entreprise à travers une utilisation efficace des données en provenance, à la fois de son environnement interne et externe à des fins de prise de décisions.

3. Le modèle d'évolution de l'information

Le principal objectif des modèles de maturité est de guider le processus de transformation d'une organisation qui part d'une situation initiale à un stade ciblé (Lahrmann et al., s. d.). En ce qui concerne l'intelligence d'affaires nous pouvons identifier plusieurs modèles qui permettent de classifier les entreprises sur des échelles à plusieurs strates. Le modèle de maturité de l'intelligence d'affaires le plus couramment utilisé, est le modèle d'évolution de l'information (ou Information Evolution Model - IEM) développé par Davis, J. Miller, GJ. Russell, A. de la société SAS leader dans le monde des logiciels d'analyse de données et d'intelligence d'affaires (Davis et al., 2006). Ce modèle classifie les entreprises dans une échelle à cinq niveaux selon l'importance donnée à l'information ainsi que la manière avec laquelle elle est gérée.

La classification proposée dans le cadre du modèle d'évolution de l'information (Davis et al., 2006) permet de se focaliser sur l'utilisation de l'information au sein de l'organisation, ce qui pourra nous permettre, en le choisissant comme modèle de base dans le cadre de notre recherche, de déterminer la position de la PME marocaine par rapport à l'utilisation de l'intelligence d'affaires comme outil d'accès à l'information, d'aide à la prise de décision et d'amélioration de la performance. Une autre raison pouvant nous amener à mobiliser ce modèle, c'est que ce dernier ne se focalise pas, uniquement, sur l'aspect technologique de l'intelligence d'affaires, mais donne plus de l'importance à d'autres volets tels que le management des

connaissances, les individus et la culture de l'entreprise. Cependant, et comme ce modèle n'aborde pas le volet applications et logiciels, nous avons jugé opportun d'ajouter la dimension « applications » mise en évidence dans un autre modèle de maturité qui est le modèle du Data Warehouse Institut (Eckerson, 2007) ainsi que dans le modèle du développement de l'intelligence d'affaires (Sacu & Spruit, 2010).

Cette recherche présentera une classification de l'adoption de l'intelligence d'affaires basée sur cinq dimensions à savoir : L'infrastructure, le processus connaissances, le capital humain, la culture, et enfin les applications.

Le tableau suivant retrace ces cinq dimensions selon les différents niveaux de mise en place de l'intelligence d'affaires basé sur le modèle d'évolution de l'information (Davis et al., 2006):

Tableau n° 1 : Cadre dimensionnel du modèle d'évolution de l'information

Dimensions					
	Infrastructure	Processus connaissances	Capital humain	Culture	Applications
Opérer	Conception en local sur ordinateur non connecté	Individuel	Motivé par la reconnaissance d'une contribution individuelle	Chacun pour soi	Logiciels basiques de génération de rapports
Consolider	Système fonctionnel mis en place au sein de la direction	Consolide les données et la prise de décision au niveau de la direction	Fonctionne en groupe dans une même direction	Ségrégation de groupes	Requête ad hoc ou data marts (subdivision d'un entrepôt de données)
Intégrer	Système d'entreprise	Intégrer les données de toutes les directions de l'entreprise	Vision générale et contribue aux objectifs de l'entreprise	Tous ensembles	Entrepôt de données
Optimiser	Système d'entreprise élargie reliant l'ensemble de la chaîne logistique	Développe la qualité de l'information et utilise un processus d'amélioration continue de la performance de l'entreprise	Possèdent plusieurs compétences intellectuelles et utilisent l'analyse prédictive pour augmenter l'efficacité	Accès élargi à l'information par toutes les parties prenantes et partage d'expériences	Forage de données (Data mining) ou l'online analytical processing (OLAP)
Innover	Capacités analytiques très poussées pour tester de nouvelles idées	Utilise des analyses avancées pour modéliser l'avenir et minimiser les risques	Penseurs créatifs peuvent emmener l'entreprise vers l'avant	Stimuler de nouvelles idées et soutenir la créativité	Business activity monitoring

Niveaux (libellé vertical de colonne)

Source : Davis, J. Miller, GJ. Russell, A. (2006), Eckerson, W. (2007), Sacu, C. Spruit, M. (2010)

Le modèle d'évolution de l'information (Davis et al., 2006) peut assister les organisations dans l'évaluation de leur usage actuel de leurs ressources informationnelles et leur permet de se positionner dans l'un de ses cinq niveaux. La définition de ce positionnement pourra leur permettre de statuer sur la démarche à suivre pour évoluer vers un niveau supérieur dans ce modèle et tirer ainsi le maximum de valeur possible à partir de l'information.

Pour répondre à l'une des questions principales de cette recherche, à savoir la position de la PME marocaine par rapport à l'usage de l'intelligence d'affaires, l'utilisation de ce modèle s'avère à notre humble avis judicieux.

4.   Théorie de la diffusion de l'innovation

Il existe une multitude de définitions sur l'innovation. Toutes ces définitions convergent vers la même idée selon laquelle l'innovation se rapporte à l'introduction de tout ce qui est nouveau. Cependant cette vision diffère d'une organisation à une autre et dépend, pleinement, de son contexte.

Il existe un nombre très important de théories sur la diffusion de l'innovation. Chaque théorie présente un modèle unique qui lui est propre. Selon Kishore, la majorité des études empiriques sur l'adoption des technologies de l'information se sont basé sur le Technology Acceptance Model (TAM) de Davis (1985) et sur la théorie de la diffusion de l'innovation (TDI) de Rogers (1983) (Kishore, 1999) . En se basant sur la théorie de la diffusion de l'innovation de Rogers, plusieurs chercheurs, dans le domaine de l'innovation, ont étudié les multiples facteurs influençant l'adoption des technologies par certains membres au sein de certains groupes particuliers d'utilisateurs (Bunduchi et al., 2011). Ces recherches ont eu pour conclusion que la théorie de la diffusion de l'innovation présente un cadre permettant de conceptualiser le développement et l'acceptation d'une innovation. Cependant, cette théorie a été critiquée pour ne pas donner assez d'explications sur le comportement d'adoption (Thong & Yap, 1995) et sur l'effet de la démographie des utilisateurs sur l'adoption de l'innovation (Mathieson & Keil, 1998). Malgré cela, cette théorie demeure le travail le plus cité sur la diffusion de l'innovation (Jeyaraj et al., 2006) et peut être interpelée dans de nombreuses études.

La théorie de la diffusion de l'innovation peut permettre de comprendre le comportement d'un groupe d'individus ou d'organisations à l'égard de l'adoption des innovations technologiques. Comme notre objectif est d'étudier l'adoption de l'intelligence d'affaires, qui est une innovation technologique, dans la PME marocaine, la théorie de la diffusion de l'innovation est choisie comme théorie de base pour notre travail de recherche.

5. Le modèle d'adoption des systèmes d'information pour les petites entreprises

Plusieurs chercheurs, dans le domaine de l'innovation, et en se basant sur la théorie de la diffusion de l'innovation de Rogers, ont étudié les multiples facteurs influençant l'adoption des technologies par certains membres au sein de certains groupes particuliers d'utilisateurs (Bunduchi et al., 2011). Dans ce sens ces chercheurs ont découvert que les caractéristiques de la technologie à elles seules ne sont pas suffisantes pour garantir le succès de la diffusion des innovations technologiques et donc une approche multi perspectives est appliquée dans le cadre de cette recherche pour comprendre les facteurs qui influencent l'adoption de l'intelligence d'affaires dans la PME marocaine. L'approche multi perspectives est très convoitée au niveau des recherches sur l'adoption de la technologie (Tan & Lin, 2012). En effet, plusieurs chercheurs, dans le cadre de la construction de leurs modèles, combinent, à la fois, les caractéristiques de Rogers sur l'innovation avec d'autres facteurs. Pour ce qui est de l'adoption de l'innovation technologique par l'organisation, Tornatzky et Fleischer ont combiné, dans le cadre de leur étude, les caractéristiques de l'innovation avec d'autres facteurs pour proposer le modèle Technologie-Organisation-Environnement (TOE) (Tornatzky et al., 1990). Ce modèle se base sur trois caractéristiques affectant le processus de prise de décision en matière d'adoption et d'implémentation de l'innovation technologique dans l'entreprise à savoir le contexte organisationnel, le contexte technologique et enfin le contexte environnemental.

James Thong a développé un modèle intégré d'adoption des technologies de l'information pour les petites et moyennes entreprises (Thong, 1999) à partir du modèle TOE, dans l'objectif d'évaluer quatre variables contextuelles déterminant l'adoption de ces technologies à savoir :

- Les caractéristiques du Président Directeur Général (PDG)
- Les caractéristiques technologiques
- Les caractéristiques organisationnelles
- Les caractéristiques environnementales

Selon Thong, Les caractéristiques individuelles du PDG déterminent l'adoption de la technologie par la petite et moyenne entreprise (Thong & Yap, 1995). En effet, les structures organisationnelles des PME sont très simples, et surtout, très centralisées, de ce fait, le PDG assure la gestion de l'entreprise tout en étant son propriétaire (Ghobakhloo et al., 2011). Le modèle d'adoption des systèmes d'information pour la petite entreprise sera adopté dans le cadre de cette étude vue le rôle prépondérant joué par le propriétaire-dirigeant dans la prise de décision d'adoption de la technologie.

Figure n° 1 : Modèle d'adoption des systèmes d'information pour les petites entreprises
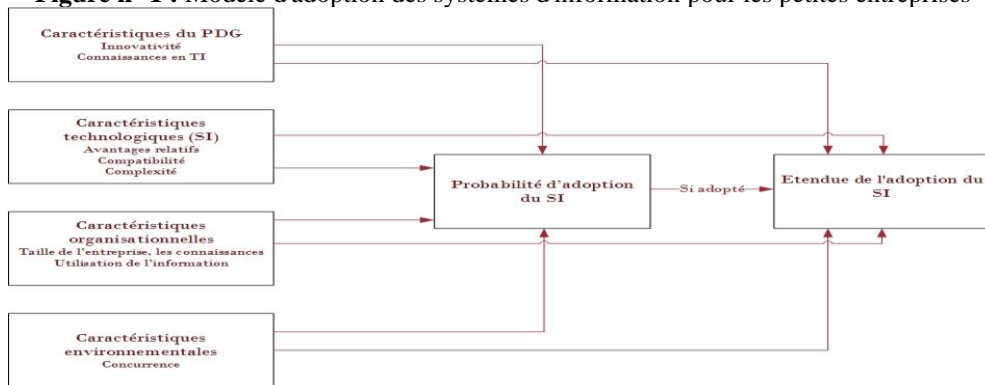
Source : Adapté de Tong (1999)

En se basant sur tout ce qui précède, la théorie de Rogers sur la diffusion de l'innovation (Rogers, 2003), sur le modèle TOE, le modèle d'adoption des systèmes d'information pour les petites et moyennes entreprises de Thong (Thong, 1999) est sélectionné en tant que modèle de base pour le développement de notre modèle conceptuel.

6. Hypothèses et modèle de recherche

Quatre hypothèses sont formulées sur les facteurs qui influencent l'adoption des outils d'intelligence d'affaires dans les PME marocaines. Ces facteurs sont les caractéristiques technologiques (5 sous-hypothèses), les caractéristiques environnementales (2 sous-hypothèses), les caractéristiques organisationnelles (2 sous-hypothèses) et les caractéristiques du propriétaire-dirigeant (2 sous-hypothèses).

6.1. Hypothèses relatives aux caractéristiques technologiques

Plusieurs études se sont basées sur les caractéristiques technologiques comme critère pour déterminer le niveau d'adoption des technologies de l'information dans une entreprise (Ramdani et al., 2013). Selon Rogers (Rogers, 2003), les attributs qui affectent l'adoption de l'innovation technologique sont : l'avantage relatif, la compatibilité, la complexité, l'essayabilité et l'observabilité.

6.1.1. L'avantage relatif de l'intelligence d'affaires

L'avantage relatif est l'un des principaux facteurs affectant l'adoption de l'innovation et peut être déterminé, d'après Rogers, par le degré selon lequel une innovation est perçue comme étant meilleure que les pratiques et systèmes existants. Des études antérieures indiquent que l'intelligence d'affaires peut offrir plusieurs avantages aux entreprises (Khan et al., 2010). Ces éléments nous mènent à poser la sous-hypothèse suivante :

H-1-1 : Les avantages relatifs de l'intelligence d'affaire affectent le niveau d'adoption de cette technologie par les PME marocaines.

6.1.2. La complexité de l'intelligence d'affaires

Selon Rogers, la complexité est déterminée par le degré selon lequel une innovation est perçue comme étant difficile à comprendre et à utiliser (Rogers, 2003). Chang et al. ont constaté que la complexité est un réel obstacle à l'adoption de l'innovation (Chang & Tsia, 2006).

La deuxième sous-hypothèse de notre travaille se présente comme suit :

H-1-2 : La complexité de l'intelligence d'affaire affecte le niveau d'adoption de cette technologie par les PME marocaines.

6.1.3. La compatibilité de l'intelligence d'affaires

La compatibilité est le degré selon lequel une innovation est perçue comme étant conforme aux valeurs existantes, aux expériences passées et aux besoins des utilisateurs (Rogers, 2003). Plusieurs chercheurs ont montré que les systèmes d'intelligence d'affaires se présentent comme une extension des systèmes de type ERP, avec des possibilités avancées de consolidation, de transformation et d'analyse de données (Hawking et al., 2008). La compatibilité revêt une importance capitale lorsqu'il s'agit de l'adoption de la technologie.

En se basant sur les éléments précités nous présenteront notre troisième sous-hypothèse comme suit :

H-1-3 : La compatibilité de l'intelligence d'affaire affecte le niveau d'adoption de cette technologie par les PME marocaines.

6.1.4. L'essayabilité de l'intelligence d'affaires

L'essayabilité (ou la possibilité d'essai) est la mesure selon laquelle les utilisateurs potentiels ont la possibilité d'essayer l'innovation (Rogers, 2003) avant son adoption. Plus le niveau d'essayabilité est élevé, plus les utilisateurs potentiels sont à l'aise avec la technologie et plus ils auront tendance à l'adopter. Par conséquent, si les fournisseurs d'intelligence d'affaires donnent aux utilisateurs potentiels la possibilité de découvrir et d'expérimenter les outils qu'ils développent avant leur adoption, cela diminuera les éventuels doutes pouvant exister sur l'outil. Dans cette perspective, nous poserons notre quatrième sous-hypothèse comme suit :

H-1-4 : L'essayabilité de l'intelligence d'affaires affecte le niveau d'adoption de cette technologie par les PME marocaines.

6.1.5. L'observabilité de l'intelligence d'affaires

L'observabilité est le degré selon lequel les utilisateurs potentiels d'une innovation peuvent percevoir les résultats de son adoption auprès d'autres utilisateurs qui l'ont déjà adopté (Rogers, 2003). D'après plusieurs études, l'observabilité a un impact sur l'adoption de l'innovation. Pour ce qui est des outils d'intelligence d'affaires et des technologies qui leur sont relatives, certains chercheurs ont constaté que l'observabilité est très importante pour l'adoption de ces technologies (Chiasson & Lovato, 2001). Ainsi, nous poserons notre cinquième sous-hypothèse comme suit :

H-1-5- L'observabilité de l'intelligence d'affaire affecte le niveau d'adoption de cette technologie par les PME marocaines.

En se basant sur les cinq sous-hypothèses présentées précédemment nous allons poser notre première hypothèse comme suit :

H1- Les caractéristiques technologiques affectent le niveau d'adoption de l'intelligence d'affaires par les PME marocaines.

6.2. Hypothèses relatives aux caractéristiques environnementales

Les facteurs environnementaux sont souvent considérés comme des facteurs clé de l'adoption de l'innovation (Damanpour & Schneider, 2006). De ce fait, il est nécessaire d'étudier l'influence de ces facteurs avant d'adopter une technologie. La concurrence qui existe entre les entreprises et la sélection des fournisseurs constituent les principales caractéristiques environnementales les plus cités dans la littérature or ces deux composantes influencent d'une manière significative le succès de l'adoption d'une innovation (Ngai et al., 2008).

6.2.1. La pression concurrentielle

De nos jours, l'environnement des affaires se caractérise par un changement continu, de nombreuses entreprises doivent désormais réduire les incertitudes liées à leurs environnements et créer un avantage concurrentiel en acquérant des technologies innovantes. De nombreuses études ont trouvé une forte relation entre le niveau de la pression concurrentielle et l'adoption de la technologie (Alshawi et al., 2011). Par conséquent, nous allons formuler la première sous-hypothèse relative aux caractéristiques environnementales de la manière suivante :

H-2-1- La pression concurrentielle affecte le niveau d'adoption de l'intelligence d'affaires dans les PME marocaines.

6.2.2. La sélection des fournisseurs

Outre la pression concurrentielle, la sélection du fournisseur est un autre facteur environnemental affectant l'adoption de la technologie. Selon l'étude de Hwang et al, il existe une relation entre la sélection des fournisseurs

d'intelligence d'affaires et l'adoption de cette technologie (Hwang et al., 2004). Tous cela nous mène à poser notre deuxième sous-hypothèse de la manière suivante :

H-2-2- La sélection des fournisseurs affecte le niveau d'adoption de l'intelligence d'affaires dans les PME marocaines.

En se basant sur les deux sous-hypothèses présentées précédemment nous allons poser notre deuxième hypothèse comme suit :

H2- Les caractéristiques environnementales affectent le niveau d'adoption de l'intelligence d'affaires par les PME marocaines.

6.3.   Hypothèses relatives aux caractéristiques organisationnelles

Selon Tornatzky et Fleischer, la structure ainsi que les procédures qui existent au sein d'une organisation peuvent soit faciliter ou bien compliquer l'adoption d'une innovation (Tornatzky et al., 1990). Dans le contexte de l'adoption de la technologie, les caractéristiques d'une entreprise jouent un rôle important dans la prise de la décision d'adoption. Les caractéristiques organisationnelles pouvant affecter la décision d'adoption de l'intelligence d'affaires sont : la capacité d'absorption et la disponibilité des ressources organisationnelles.

6.3.1.   La capacité d'absorption

Griffith, Sawyer et Neale définissent la capacité d'absorption d'une organisation comme étant la capacité de ses membres à utiliser les connaissances existantes ou préexistantes en technologies de l'information (Griffith et al., 2003). Cette capacité d'absorption s'observe à travers leur capacité à s'adapter aux changements au cours du processus d'absorption, de transformation et de production de connaissances. La capacité d'absorption peut être utilisée pour prédire si l'organisation a la capacité d'adopter l'innovation ou non (Cohen & Levinthal, 1990). Par conséquent, nous allons poser notre première sous-hypothèse concernant les caractéristiques organisationnelles comme suit :

H-3-1- La capacité d'absorption affecte le niveau d'adoption de l'intelligence d'affaires dans les PME marocaines

6.3.2.   Disponibilité des ressources organisationnelles

La disponibilité des ressources organisationnelles est un autre élément que de nombreuses études ont identifié comme étant un facteur ayant une influence sur l'adoption de l'innovation (Adler-Milstein & Bates, 2010). En effet, Les managers accepteront l'adoption d'une nouvelle technologie lorsque l'entreprise dispose de fonds suffisants, du matériel nécessaire, de ressources humaines disponibles et de suffisamment de temps pour implémenter cette

innovation technologique. Cela nous mène à poser notre deuxième sous-hypothèse concernant les caractéristiques organisationnelles comme suit :

H-3-2- La disponibilité des ressources organisationnelles affecte le niveau d'adoption de l'intelligence d'affaires dans les PME marocaines.

En se basant sur les deux sous-hypothèses présentées précédemment nous allons poser notre troisième hypothèse de la manière suivante :

H3- Les caractéristiques organisationnelles affectent le niveau d'adoption de l'intelligence d'affaires par les PME marocaines.

6.4.   Hypothèses relatives aux caractéristiques des propriétaires-dirigeants

Les caractéristiques du propriétaire-dirigeant jouent généralement un rôle important dans la prise de décision d'adoption des technologies de l'information dans le contexte des PME. En effet, l'autorité étant principalement attribuée au PDG, qui est à la fois le propriétaire et le dirigeant de l'entreprise en même temps (Ghobakhloo et al., 2011). Ainsi, ce propriétaire-dirigeant est la seule personne à même de prendre les décisions à la fois opérationnelles et stratégiques. L'étude de James Thong a montré que les entreprises ayant des propriétaires-dirigeants intéressés par l'innovation et disposant de connaissances en TI, sont les plus susceptibles de réussir leur processus d'adoption de ces technologies (Thong, 1999).

6.4.1.   Innovativité du propriétaire-dirigeant

L'innovativité est un facteur d'influence qui figure parmi les caractéristiques des propriétaires-dirigeants (Ghobakhloo & Tang, 2013). Certains chercheurs affirment qu'il existe chez certains individus une tendance vers l'adoption de l'innovation manifestée par une volonté d'essayer de nouvelles technologies de l'information afin d'atteindre leurs objectifs (Agarwal & Prasad, 1998). Dans ce sens nous allons poser notre première sous-hypothèse concernant les caractéristiques des propriétaires-dirigeants comme suit :

H-4-1- L'innovativité des propriétaires-dirigeants affecte l'adoption de l'intelligence d'affaires dans les PME marocaines

6.4.2.   Connaissances des propriétaires-dirigeants en technologies de l'information

Les connaissances des propriétaires-dirigeants ainsi que leur expérience en technologies de l'information sont un autre facteur pouvant avoir un impact sur l'adoption de ces technologies dans les PME (Fink, 1998; Ghobakhloo et al., 2011). Thong et Yap ont affirmé que plus les connaissances des propriétaires-dirigeants en technologies de l'information sont importantes

plus ils auront tendance à adopter l'innovation dans leurs entreprises (Thong & Yap, 1995).

Notre deuxième sous-hypothèse concernant les caractéristiques des propriétaires-dirigeants se présentent comme suit :

H-4-2- Les connaissances des propriétaires-dirigeants en technologies de l'information affectent l'adoption de l'intelligence d'affaires dans les PME marocaines.

En se basant sur les deux sous-hypothèses précédentes nous allons poser notre quatrième hypothèse de travail comme suit :

H4- Les caractéristiques des propriétaires-dirigeants affectent le niveau d'adoption de l'intelligence d'affaires par les PME marocaines.

En guise de conclusion, quatre hypothèses vont être testées afin de connaitre l'impact des facteurs présentés dans le cadre du modèle d'adoption des systèmes d'information dans les petites entreprises de Thong (Thong, 1999) sur le niveau d'adoption des outils d'intelligence d'affaires par les petites et moyennes entreprises marocaines selon le modèle d'évolution de l'information de Davis, Miller, et Russell (Davis et al., 2006). Chaque hypothèse se base sur un certain nombre de sous-hypothèses. On trouve cinq sous-hypothèses pour ce qui est des caractéristiques technologiques (basés sur la théorie des attribues perçus de Rogers (Rogers, 2003)), deux sous-hypothèses pour ce qui est des caractéristiques environnementales, deux sous-hypothèses concernant les caractéristiques organisationnelles et enfin deux sous-hypothèses concernant les caractéristiques du propriétaire dirigeant.

Le modèle de recherche global se présente comme suit :

Figure n° 2 : Modèle de recherche global
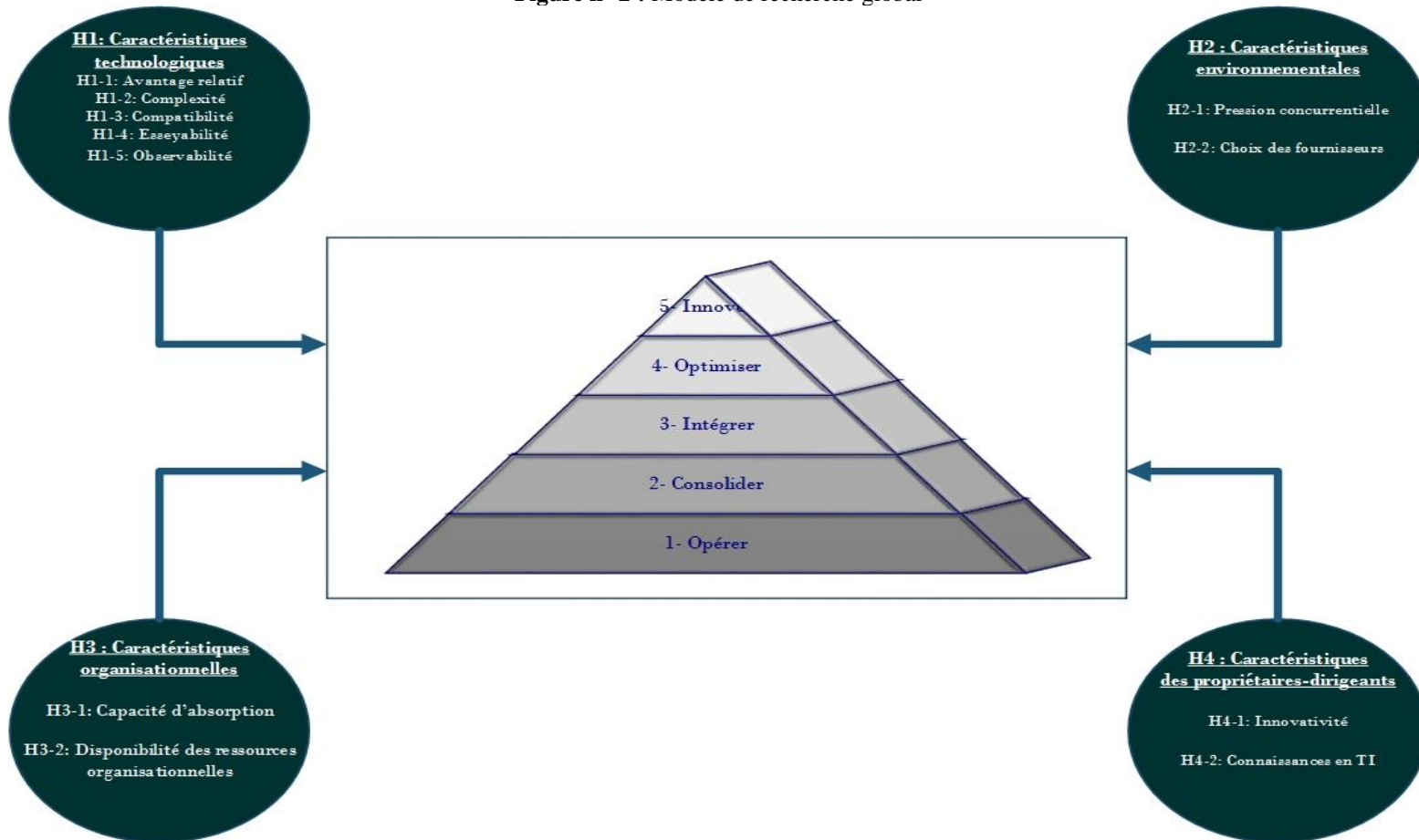
Notre modèle de recherche se base sur une combinaison de deux principaux modèles théoriques à savoir le modèle d'évolution de l'information (Davis et al., 2006) et le modèle d'adoption des systèmes d'information pour les petites entreprises (Thong, 1999) qui est lui-même basé sur le modèle Technologie-Organisation-Environnement de Tornatzky et Fleischer (Tornatzky et al., 1990) et sur la théorie des attributs perçus (Rogers, 2003) de Rogers. Cette combinaison qui a été adoptée par certains chercheurs (Boonsiritomachai et al., 2016; Laleyo, 2017) est une combinaison qui nous parait très intéressante et qui a prouvé son efficacité dans différentes études permettant d'expliquer le positionnement de l'entreprise sur la matrice du modèle d'évolution de l'information selon quatre facteurs présentés par le modèle d'adoption des systèmes d'information pour les petites entreprises à savoir les caractéristiques technologiques, les caractéristiques environnementales, les caractéristiques organisationnelles et les caractéristiques du propriétaire-dirigeant.

7.   Modélisation et phase de la recherche quantitative

Après avoir réalisé une étude qualitative exploratoire[1] à travers une série d'entretiens réalisés avec des experts dans le domaine, dont l'apport en termes d'information fut très riche, nous avons pu confirmer les variables retenues pour notre modèle. L'étape suivante consiste à vérifier et tester quantitativement notre modèle à travers la réalisation d'une enquête matérialisée par l'administration d'un questionnaire (voir annexe), que nous avons préalablement construit et validé, auprès d'un échantillon de PME marocaines dans un objectif de confirmer ou d'infirmer les hypothèses de recherche que nous avons émis et afin d'évaluer la qualité du modèle élaboré.

7.1.   Synthèse des données de l'enquête et méthodologie d'analyse retenue

Cette étape consiste en la présentation d'une synthèse des données de notre enquête ainsi que la démarche suivie pour filtrer les réponses obtenues et constituer la base finale de questionnaires sur laquelle portera notre analyse. Dans ce même cadre la démarche suivie pour déterminer le niveau d'intelligence d'affaires au niveau des PME marocaines qui ont pris part à cette enquête sera exhibée. Par la suite la méthode des équations structurelles selon l'approche PLS utilisée sera présentée. Cette méthode d'analyse de variables sera expliquée en détail et les raisons de son adoption seront énumérées.

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[1] Les résultats de cette étude sont disponibles sur demande auprès des auteurs.

7.1. Synthèse des données de l'enquête et détermination du niveau d'intelligence d'affaires chez la PME marocaine

Pour ce qui est des questionnaires retournés, 145 questionnaires ont pu être récupérés. Après vérification de ces questionnaires il s'est avéré que 9 d'entre eux ne respectaient pas le critère de définition de la PME adoptée par Bank Al Maghrib (Banque centrale du Maroc) et Maroc PME (Agence Nationale pour la Promotion de la PME marocaine) à savoir les entreprises réalisant un chiffre d'affaires hors taxes inférieur ou égal à 175MDH chose qui justifie leur élimination. Cinq autres questionnaires ont été éliminé en raison des réponses aberrantes qui y figuraient. En fin de compte 131 questionnaires exploitables ont fait sujet d'une analyse approfondie.

Les réponses obtenues relatives à la première partie de notre questionnaire ont été analysées pour déterminer auquel des cinq niveaux d'intelligence d'affaires à savoir : Opérer, consolider, intégrer, optimiser ou innover appartiennent la majorité des PME marocaines.

A partir de l'analyse des réponses obtenues nous avons obtenu les résultats présentés dans le tableau ci-dessous :

Tableau n° 2 : Niveau d'intelligence d'affaires après analyse au niveau des PME marocaines ayant participées à notre enquête

Niveau IA	Fréquences
Opérer	32
Consolider	63
Intégrer	29
Optimiser	7
Innover	0
Total	131

Comme nous pouvons le voir au niveau le tableau ci-dessus et en fonction des réponses fournies concernant la première partie du questionnaire, trente-deux entreprises sont classées dans le niveau opérer, soixante-trois dans le niveau consolider, vingt-neuf dans le niveau intégrer et enfin sept entreprises seulement sont classées dans le niveau optimiser cependant aucune entreprise n'a été classée dans le niveau innover. Nous pouvons donc constater que la prédominance des PME marocaines sont classées dans le deuxième niveau de la matrice du modèle d'Evolution de l'Information à savoir le niveau consolider.

7.1.2. Méthodologie d'analyse des variables adoptée : Modélisation par la méthode des équations structurelles

Dans tout processus de recherche, le choix d'une méthodologie d'analyse des données obtenues d'une étude empirique est une étape d'une importance capitale. Pour ce qui est de notre travail de recherche, il a été question de choisir une méthodologie qui aller permettre une étude

approfondie de notre modèle et une exploitation efficace de l'ensemble des données obtenues. Pour ce faire, la modélisation par la méthode des équations structurelles à variables latentes selon l'approche PLS a été choisie dans le cadre de cette étude.

Le choix de l'approche PLS fut le résultat d'une réflexion approfondie qu'on a pu mener sur la façon d'approcher, d'analyser et de traiter les données que nous avons collectées lors de notre étude empirique. En effet, l'un des avantages de la méthode PLS est que cette dernière requiert moins d'hypothèses probabilistes que les autres méthodes d'équations structurelles (Chin & Marcoulides, 1998). Les données sont directement modélisées à travers une succession de régressions simples ou multiples (Tenenhaus, 1999). Cependant, plusieurs autres raisons nous ont incités à recourir à cette méthode pour analyser et traiter notre modèle de recherche : La méthode PLS tolère des échantillons relativement faibles (Fernandes, 2012), le phénomène étudié est nouveau ou changeant (Hoyle, 1999), la méthode PLS est recommandée par plusieurs chercheurs (Sosik et al., 2009), elle est largement utilisée dans le domaine de la recherche en management des systèmes d'information (C. M. Ringle et al., 2012). Il est à noter que nous avons opté pour la modélisation en composants hiérarchiques dans le cadre de la méthode des équations structurelles sous l'approche PLS pour trois principales raisons. Premièrement, en établissant des modèles en composants hiérarchiques, le chercheur peut réduire le nombre de relations dans le modèle structurel, ce qui rend ce modèle plus parcimonieux et plus facile à analyser. Deuxièmement, les modèles en composants hiérarchiques s'avèrent utiles si les construits de premier ordre sont fortement corrélées. Lorsque cette situation se présente, les estimations des relations du modèle structurel peuvent être biaisées en raison de problèmes de colinéarité, et la validité discriminante peut ne pas être établie. Dans les situations caractérisées par la colinéarité entre les différents construits, l'utilisation d'une structure d'ordre supérieur peut réduire les problèmes de colinéarité et peut résoudre les problèmes de validité discriminante. Troisièmement, l'utilisation de modèles en composants hiérarchiques peut également s'avérer utile si les indicateurs formatifs présentent des niveaux élevés de colinéarité. Le chercheur peut donc diviser l'ensemble des indicateurs et établir des construits distinctes de premier ordre qui forment conjointement une structure d'ordre supérieur.

7.2. Test du modèle et des hypothèses de travail

Nous avons utilisé le logiciel SmartPLS V 3.2.8 (C. Ringle et al., 2015) pour effectuer le traitement et l'analyse de nos données. Ce logiciel est exclusivement dédié à l'application de l'approche PLS en plus de ça il offre une interface graphique permettant de modéliser ergonomiquement et en toute simplicité le modèle de recherche. Nous avons opté pour la licence

professionnelle afin d'avoir accès au maximum de fonctionnalités. Il est donc indispensable de procéder préalablement à la modélisation (graphique) à l'aide du logiciel. Ceci nous permettra dans un premier temps de mieux visualiser les différents concepts de notre modèle (variables latentes), leurs variables manifestes (variables de mesures), ainsi que l'ensemble des relations de causalité, qui correspondent à nos hypothèses de travail. L'exécution de l'algorithme PLS, dont le résultat schématique est présenté ci-dessous, permet de calculer certains indicateurs pouvant justifier la qualité du modèle, tels que le coefficient de détermination (R^2), des indicateurs relatifs à la fiabilité du modèle (Cronbach, Rhô, etc.) ou encore, un ensemble d'indicateurs permettant de juger de sa validité convergente et discriminante. L'exécution de l'algorithme PLS constitue l'élément déclencheur de notre phase d'analyse.

La contribution factorielle (ou factor loadings) présente le niveau d'un chemin de régression d'un indicateur latent à ses indicateurs (Ghadi et al., 2012). Ainsi, selon Hair et al. le facteur loading est jugé acceptable si sa valeur est supérieure à 0,5 et est jugé bonne lorsqu'elle est égale à 0,7 et plus (Hair et al., 2017). Dans notre cas les factor loadings de nos variables manifestes se situent entre 0,632 et 0,937 et donc ils sont largement supérieurs au seuil proposé par ces auteurs. De ce fait, nous allons poursuivre notre analyse en gardant l'ensemble des indicateurs au niveau de notre modèle.

Figure n° 3 : Résultats de calcul issu de l'exécution de l'algorithme PLS
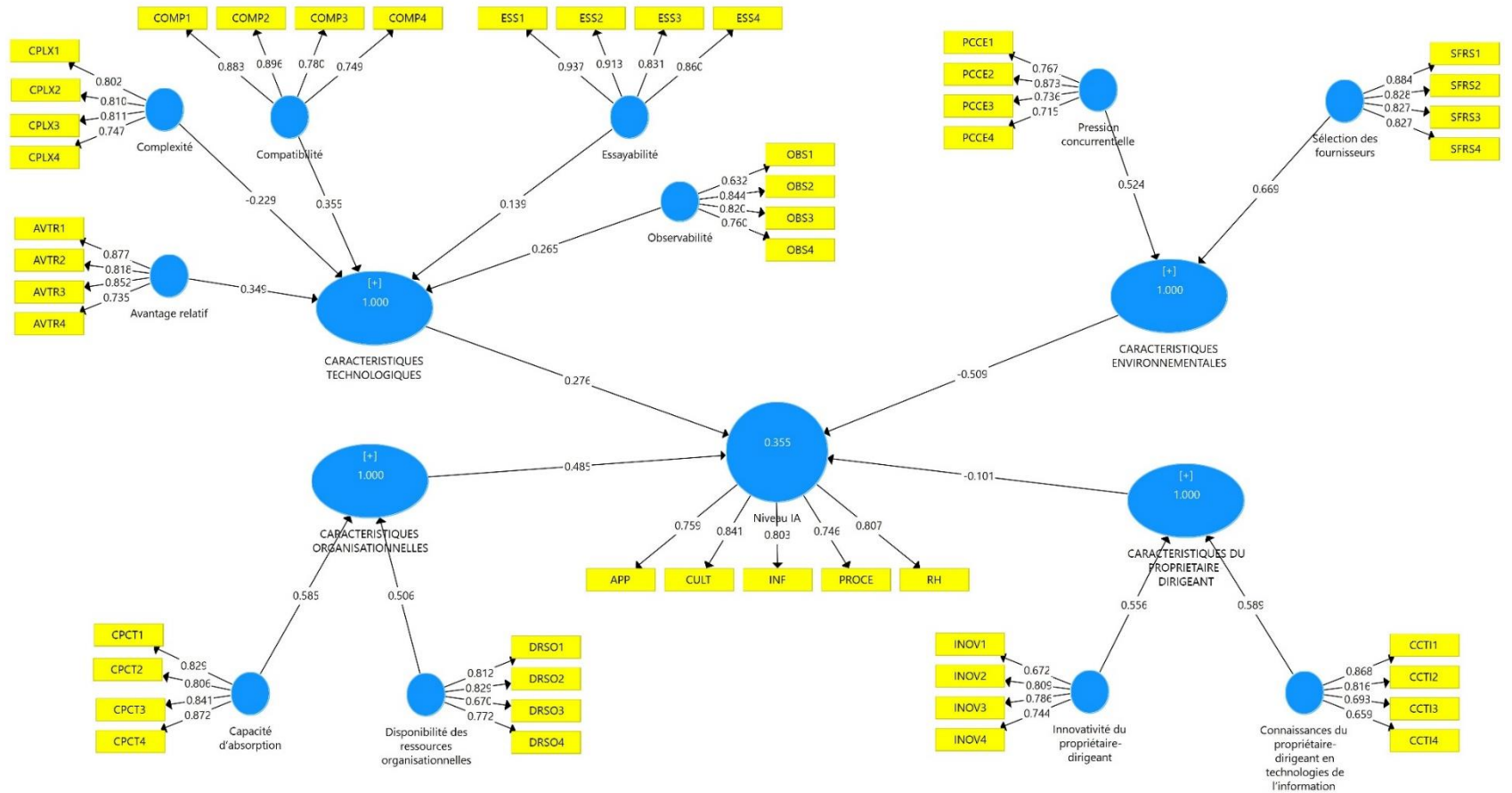
7.2.1. Evaluation du modèle de mesure

L'évaluation du modèle de mesure s'effectue en deux étapes et concernera les variables de premier ordre. Nous commencerons tout d'abord à évaluer la validité convergente à travers la mesure de la fiabilité et de la cohérence interne ainsi que l'évaluation de l'indice de la variance moyenne restituée (Everage Variance Extracted ou AVE). Par la suite nous allons analyser la validité discriminante à l'aide du tableau des corrélations inter variables selon le critère de Fornell-Larcker (Fornell & Larcker, 1981).

7.2.1.1. Evaluation de la validité convergente

L'évaluation de la validité convergente consiste à mesurer la fiabilité composite ainsi que l'indice de la variance moyenne restituée (AVE).

7.2.1.2. La fiabilité composite

L'alpha de Cronbach et la fiabilité composite sont les deux indicateurs permettant de mesurer la fiabilité et le niveau de cohérence interne du modèle. En effet, si l'indice de Cronbach reste l'un des moyens de mesure de la fiabilité les plus utilisés, certains chercheurs préconisent le recours à un autre indicateur qui serait plus fiable et qui est celui de la fiabilité composite (noté CR pour Composite Reliability) (Hair et al., 2017). Chin recommande également d'évaluer la cohérence interne et la fiabilité à l'aide de l'indice de fiabilité composite (Chin & Marcoulides, 1998). Nous allons mesurer l'estimation de la fiabilité de cohérence interne pour les variables de premier ordre de notre modèle. Le tableau ci-dessous regroupe les valeurs que nous avons obtenues pour les indicateurs de Cronbach, et celui de la fiabilité composite.

Tableau n° 3 : Mesure du coefficient α de Cronbach et de la fiabilité composite

Variables latentes	Alpha de Cronbach	Fiabilité composite
Avantage relatif	0.839	0.893
Capacité d'absorption	0.858	0.904
Compatibilité	0.847	0.898
Complexité	0.804	0.871
Connaissances du propriétaire-dirigeant en technologies de l'information	0.756	0.847
Disponibilité des ressources organisationnelles	0.776	0.855
Essayabilité	0.911	0.936
Innovativité du propriétaire-dirigeant	0.746	0.840
Niveau IA	0.852	0.894
Observabilité	0.769	0.851
Pression concurrentielle	0.777	0.857
Sélection des fournisseurs	0.864	0.907

Comme nous pouvons le voir d'après le tableau ci-dessus, tous les indicateurs ont une valeur supérieure à 0,70 que ça soit pour la valeur de l'Alpha de Cronbach ou l'indice de la fiabilité composite. Ces valeurs sont donc suffisantes pour conclure que notre modèle est plus ou moins fiable. L'ensemble des variables latentes qui constituent notre modèle disposent d'une échelle de mesure consistante et fiable (Hair et al., 2017). Les variables de mesures correspondantes mesurent donc bien ce qu'elles sont censées mesurer. La confirmation de la fiabilité à travers l'alpha de Cronbach et de la fiabilité composite témoignent également de l'unidimensionnalité du modèle[2].

7.2.1.3. Analyse de l'indice de la variable moyenne restituée (AVE)

L'indice de la variable moyenne restituée (AVE) permet d'évaluer la portion de la variance que les variables de mesures partagent avec leurs construits respectifs (Fornell & Larcker, 1981). Pour qu'il y ait validité convergente, l'AVE doit présenter une valeur supérieure ou égale à 0,50 (Fornell & Larcker, 1981). Nous présentons ci-dessous l'ensemble des valeurs que nous avons obtenu pour notre AVE à l'aide de l'algorithme PLS :

Tableau n° 4 : Mesure de l'indice de la variance moyenne restituée (AVE)

Variables latentes	Average Variance Extracted (AVE)
Avantage relatif	0.676
Capacité d'absorption	0.702
Compatibilité	0.688
Complexité	0.629
Connaissances du propriétaire-dirigeant en technologies de l'information	0.584
Disponibilité des ressources organisationnelles	0.598
Essayabilité	0.785
Innovativité du propriétaire-dirigeant	0.569
Niveau IA	0.627
Observabilité	0.591
Pression concurrentielle	0.601
Sélection des fournisseurs	0.709

Comme nous pouvons le constater d'après le tableau ci-dessus, les valeurs de l'indice de la variance moyenne restituée (AVE) pour les variables de premier ordre sont supérieur à 0,5 ce qui veut dire que la validité convergente de notre modèle est satisfaite. Nous allons, donc procéder à l'évaluation de la validité discriminante de notre modèle.

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[2] En principe on parle d'unidimensionnalité lorsque chaque item ne dépend que d'une seule dimension (une seule variable latente) voir :
http://psychometrie.jlroulin.fr/cours/aide_quizz.html?E622.html

7.2.1.4. Evaluation de la validité discriminante

Il s'agit d'examiner le degré de saturation de chaque variable latente avec l'ensemble des variables de mesure du modèle (Chin & Marcoulides, 1998). Pour cela nous allons procéder à l'évaluation de la validité discriminante de notre modèle à travers l'observation de la table des corrélations inter variables selon le critère de Fornell-Larcker où la racine carrée de la variance moyenne restituée AVE de chacune des variables latentes doit être supérieure à sa corrélation avec les autres variables latentes (Hair et al., 2017). En utilisant cette approche, nous avons constaté que la racine carrée de l'AVE pour chacune de nos variables latentes était effectivement supérieure à sa corrélation avec les autres variables latentes, comme le montre le tableau ci-dessous.

Tableau n° 5 : Corrélations inter variables selon le critère de Fornell-Larcker

	Avantage relatif	Capacité d'absorption	Compatibilité	Complexité	Connaissances du propriétaire-dirigeant en technologies de l'information	Disponibilité des ressources organisationnelles	Essayabilité	Innovativité du propriétaire-dirigeant	Niveau IA	Observabilité	Pression concurrentielle	Sélection des fournisseurs
Avantage relatif	**0.822**											
Capacité d'absorption	0.579	**0.838**										
Compatibilité	0.731	0.578	**0.830**									
Complexité	-0.467	-0.373	-0.433	**0.793**								
Connaissances du propriétaire-dirigeant en technologies de l'information	0.307	0.457	0.502	-0.117	**0.764**							
Disponibilité des ressources organisationnelles	0.621	0.679	0.560	-0.400	0.429	**0.773**						
Essayabilité	-0.031	0.033	0.174	-0.141	-0.024	0.041	**0.886**					
Innovativité du propriétaire-dirigeant	0.449	0.351	0.446	-0.139	0.526	0.457	-0.147	**0.754**				
Niveau IA	0.216	0.325	0.190	-0.073	0.044	0.399	0.253	-0.041	**0.792**			
Observabilité	0.562	0.533	0.554	-0.361	0.422	0.528	0.118	0.261	0.234	**0.769**		
Pression concurrentielle	0.358	0.129	0.341	-0.166	0.081	0.146	-0.003	0.381	-0.194	0.146	**0.775**	
Sélection des fournisseurs	0.664	0.515	0.611	-0.395	0.519	0.531	-0.113	0.564	-0.111	0.469	0.397	**0.842**

Nous pouvons constater selon le tableau des corrélations inter variables selon le critère de Fornell-Larcker que pour chaque variable latente, les valeurs les plus élevées des coefficients de saturation appartiennent aux variables de mesure censées les représenter. De ce fait nous pouvons dire que la validité discriminante de notre modèle est satisfaite.

Nous avons donc procédé à l'évaluation de notre modèle de mesure à travers l'évaluation de la validité convergente et de la validité discriminante en nous référant aux seuils préconisés par la communauté scientifique. Puisque les résultats trouvés sont satisfaisants, nous pouvons donc procéder à l'évaluation du modèle structurel.

7.2.2. Evaluation du modèle structurel

L'évaluation du modèle structurel consiste à analyser la qualité du modèle global ainsi que son pouvoir prédictif. Pour ce faire, nous devons recourir à plusieurs indicateurs avant de procéder au test de nos hypothèses de travail.

### 7.2.2.1. Qualité et pouvoir prédictif du modèle

Nous allons commencer par l'analyse du coefficient de détermination (R^2). Le coefficient R^2 nous permet de déterminer le pourcentage de la variance expliquée par les différentes variables explicatives. Autrement dit, il s'agit d'un coefficient qui permet de comprendre le degré de contribution de chaque variable explicative à la prévision de la variable à expliquer (Fernandes, 2012). Pour ce qui est de notre modèle nous avons obtenu la valeur de 0,355 pour notre coefficient de détermination R^2 c'est-à-dire que 35,5% de la variance du niveau d'adoption de l'intelligence d'affaires par les PME marocaines est expliquée par la combinaison des facteurs technologiques, environnementales, organisationnels et ceux du propriétaire-dirigeant.

Afin de juger du degré de significativité de notre coefficient de détermination, nous nous sommes basés sur les seuils proposés par Croutsche (Croutsche, 2002). Un modèle, pour être jugé significatif, doit présenter un R^2 supérieur à 0,10. Si ce modèle présente un coefficient dont la valeur est comprise entre 0,05 et 0,10, le modèle est jugé tangent. Enfin, un R^2 inférieur à 0,05 veux dire que le modèle est non significatif. Dans notre cas la valeur du R^2 obtenue est largement supérieur au seuil de 0,10 tel que proposé par Croutsche ce qui nous permet de dire que la pertinence prédictive de notre modèle est satisfaisante. Cette première analyse à l'aide du coefficient de détermination R^2 nous permet d'avoir une première idée de la qualité de notre modèle.

La qualité de chaque équation structurelle peut aussi être évaluée par le coefficient Q^2 de Stone-Geisser qui doit être supérieur à 0. « Il s'agit d'un test de R^2 en validation croisée entre les variables manifestes d'une variable

latente endogène et toutes les variables manifestes associées aux variables latentes expliquant la variable latente endogène, en utilisant le modèle structurel estimé. » (Fernandes, 2012). Pour calculer le coefficient Q² nous allons recourir à la technique appelée « Blindfolding » à l'aide du logiciel SmartPls et en définissant la distance d'omission à la valeur 7 (valeur par défaut). Le schéma ci-dessous expose la valeur obtenue pour le coefficient Q2.

Figure n° 4 : Représentation schématique du modèle après exécution du Blindfolding
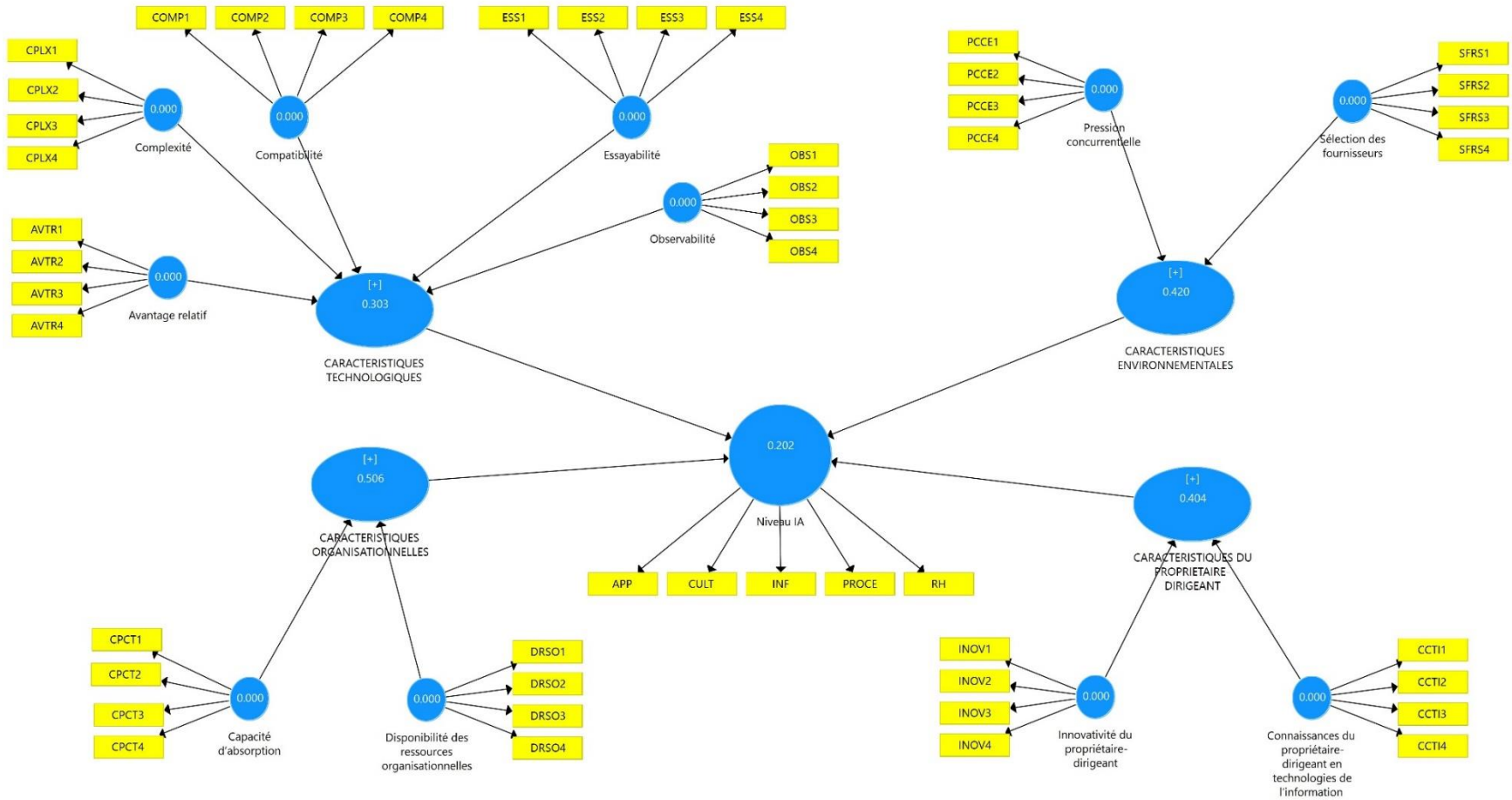
Comme nous pouvons le constater d'après le schéma obtenu, la valeur du Q² = 0,202 ce qui veut dire que notre modèle dispose d'un pouvoir prédictif pertinent (Hair et al., 2017).

Nous pouvons donc conclure, d'après les valeurs obtenues pour le coefficient de détermination R² ainsi que le coefficient d'évaluation de la pertinence prédictive Q², que notre modèle dispose d'une qualité et d'un pouvoir prédictif satisfaisants.

7.2.2.2. Evaluation de la qualité globale du modèle (Goodness of Fit)

L'indice GOF (Goodness Of-Fit) est proposé par Tenenhaus et al. pour évaluer la qualité du modèle structurel ou parfois dans la littérature est cité comme un indice de validation globale du modèle PLS (Tenenhaus et al., 2005). En d'autres termes l'indice GOF permet de mesurer jusqu'à quel point nous pouvons compter à la fois sur le modèle de mesure et sur le modèle structurel en même temps (Tenenhaus et al., 2005).

L'indice GOF est défini comme la moyenne géométrique de la moyenne de communalité AVE et la moyenne R² des différentes variables de la variance expliquée (Wetzels et al., 2009). La formule de calcul du Gof se présente comme suit :

$$GoF = \sqrt{(\overline{R^2} \times \overline{AVE})}$$

Wetzels et al. présentent les intervalles selon la valeur du GOF obtenue :
Gof < 0.1 : Qualité globale inexistante
Gof entre 0.1 et 0.25 : Qualité globale modeste du modèle
Gof entre 0.25 et 0.36 : Qualité globale moyenne du modèle
Gof supérieur à 0.36 : très bonne qualité globale du modèle

En ce qui concerne notre modèle nous disposons d'une seule variable à expliquer à savoir le niveau d'adoption de l'intelligence d'affaires. De ce fait les moyennes géométriques des indices R² et AVE sont leurs valeurs elles-mêmes et donc le calcul de Gof pour ce qui est de notre modèle se présente comme suit :

$$Gof = \sqrt{(0,355) * (0,627)} = 0,471$$

Nous pouvons conclure d'après la valeur du Gof obtenue que notre modèle dispose d'une bonne qualité globale. Nos modèles à la fois de mesure et structurel sont performants.

7.2.2.3. Evaluation des construits du second ordre

Afin d'évaluer les construits du second ordre, nous allons procéder dans un premier niveau à l'évaluation de la Multi colinéarité des construits de

premier ordre puis nous allons évaluer les relations entre les construits de premier ordre et les construits du second ordre qui leurs sont rattachés.

7.2.3. Evaluation de la multi colinéarité des indicateurs (ou construits de premier ordre)

Des corrélations élevées ne sont généralement pas appropriées entre indicateurs des modèles de mesure de type formatif. En effet, une forte corrélation entre des éléments formatifs indique une multi colinéarité considérée comme problématique (Hair et al., 2017) et qui pourrait déstabiliser le modèle (Petter et al., 2007). Dans notre modèle de type hiérarchique, si les construits du premier ordre sont fortement corrélées, cela peut signifier qu'ils mesurent le même aspect du construit qu'ils sont entrain de former (Petter et al., 2007) et, par conséquent, le caractère formatif pour le construit du second ordre serait inapproprié (Duarte & Amaro, 2018).

Nous avons examiné la colinéarité entre les éléments formatifs de nos construits en examinant la valeur du facteur d'inflation de la variance (VIF). Pour qu'il n'y ai pas de multi colinéarité entre les indicateurs la valeur de la VIF doit être inférieur strictement à cinq (Hair et al., 2017).
Le tableau ci-dessous reprend les valeurs de la VIF obtenues.

Tableau n° 6 : Evaluation de la valeur du facteur d'inflation de la variance (VIF)

	VIF
Avantage relatif	2.630
Capacité d'absorption	1.857
Compatibilité	2.477
Complexité	1.346
Connaissances du propriétaire-dirigeant en technologies de l'information	1.382
Disponibilité des ressources organisationnelles	1.857
Essayabilité	1.121
Innovativité du propriétaire-dirigeant	1.382
Observabilité	1.590
Pression concurrentielle	1.187
Sélection des fournisseurs	1.187

Les valeurs de la VIF obtenues sont inférieures à 5 comme préconisé par Hair et al. Nous pouvons donc conclure qu'il n'existe pas de multi colinéarité entre les variables de premier ordre (ou dimensions) qui forment ceux de second ordre ce qui nous permet de valider notre modélisation hiérarchique.

7.2.4. Evaluation des relations entre les construits de premier ordre et les construits du second ordre

Henseler et al. (Henseler et al., 2009) recommandent d'évaluer la validité des construits formatifs sur deux niveaux : au niveau des indicateurs

et au niveau des construits, qui, adapté à un modèle hiérarchique, signifie évaluer les construits de premier ordre (qui agissent désormais comme indicateurs) et les construits du second ordre.

Au niveau des construits de premier ordre, il est nécessaire d'évaluer si chaque construit de premier ordre contribue à former le construit du second ordre auquel il est rattaché (Hair et al., 2017). Par conséquent, les poids des construits du premier ordre sur les construits du second ordre et leur signification ont été évalués. Pour les construits formatifs d'ordre supérieur, les poids des construits d'ordre inférieur sont particulièrement importants car ils représentent les éléments qui déterminent les construits d'ordre supérieur (Becker et al., 2012). Les poids des indicateurs devraient être supérieurs à 0,1 et leurs signes (positif ou négatif) devraient être cohérents avec la théorie (Andreev, 2009). La procédure du Bootstrapping doit être utilisée pour vérifier leur signification (Andreev, 2009).

Tableau n° 7 : Poids des construits de premier ordre sur leurs construits du second

Construits du deuxième ordre	Construits du premier ordre	Poids	t-statistique
Caractéristiques technologiques	Avantage relatif	0.349	12.306
	Complexité	-0.229	1.746
	Compatibilité	0.355	13.029
	Esseyabilité	0.139	1.771
	Observabilité	0.265	8.837
Caractéristiques environnementales	Pression concurrentielle	0.524	6.597
	Sélection des fournisseurs	0.669	8.589
Caractéristiques organisationnelles	Capacité d'absorption	0.585	22.302
	Disponibilité des ressources organisationnelles	0.506	18.591
Caractéristiques du Propriétaire-Dirigeant	Innovativité	0.556	14.430
	Connaissances en TI	0.589	15.613

Comme nous pouvons le constater d'après le tableau ci-dessus, les valeurs absolues des poids des indicateurs de premier ordre sur les indicateurs du deuxième ordre sont supérieur à 0.1 ce qui nous pousse à dire que les variables de premier ordre forment bien les variables du second ordre auxquelles elles sont rattachées.

7.2.5. Test d'hypothèses de travail

Le test d'hypothèses est une opération qui permet d'évaluer les effets directs entre les variables latentes liées par une relation de causalité. A cet effet, nous allons recourir à la procédure de rééchantillonnage (ou Bootstrapping), qui permet d'obtenir les valeurs du t de Student, et qui nous servira pour la validation ou le rejet de nos hypothèses (Chin & Marcoulides, 1998). Nous rappelons ci-dessous les hypothèses de travail que nous avons formulées précédemment :

H1- Les caractéristiques technologiques affectent le niveau d'adoption de l'intelligence d'affaires par les PME marocaines.

H2- Les caractéristiques environnementales affectent le niveau d'adoption de l'intelligence d'affaires par les PME marocaines.

H3- Les caractéristiques organisationnelles affectent le niveau d'adoption de l'intelligence d'affaires par les PME marocaines.

H4- Les caractéristiques des propriétaires-dirigeants affectent le niveau d'adoption de l'intelligence d'affaires par les PME marocaines.

Sous le logiciel SmartPLS, nous avons procédé à l'exécution de la procédure de rééchantillonnage (ou Bootstrapping) avec un sous-échantillon paramétré à une valeur de 500. Cela nous a permis de calculer la valeur des coefficients du T de Student. Selon Balambo, « les hypothèses sont significatives statistiquement au seuil de 1%, 5% et 10% si et seulement si leur t de Student est supérieur à la valeur absolue de 2,57, 1,96 et 1,64 respectivement (Balambo, 2013). Au-dessous de ces seuils, la significativité des hypothèses sera insignifiante ». En ce qui nous concerne, nous allons considérer comme validée, toute hypothèse présentant un t de Student supérieur à 1,96. En-dessous de ce seuil, nous rejetterons l'hypothèse. Le tableau suivant reprend le résultat du Bootstrapping.

Tableau n° 8 : Test des hypothèses suite au calcul du T de Student à l'aide de la procédure de rééchantillonnage

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Validation
CARACTERISTIQUES TECHNOLOGIQUES -> Niveau IA	0.276	0.279	0.133	2.074	0.038	Confirmée
CARACTERISTIQUES ENVIRONNEMENTALES -> Niveau IA	-0.509	-0.510	0.103	4.949	0.000	Confirmée
CARACTERISTIQUES ORGANISATIONNELLES -> Niveau IA	0.485	0.492	0.112	4.319	0.000	Confirmée
CARACTERISTIQUES DU PROPRIETAIRE-DIRIGEANT -> Niveau IA	-0.101	-0.105	0.090	1.126	0.260	Rejetée

7.3.   Synthèse et discussion

Pour ce qui est de la qualité et du pouvoir prédictif de notre modèle. Nous avons obtenu une valeur satisfaisante en ce qui concerne le coefficient de détermination R² qui nous permet de déterminer le pourcentage de la variance expliquée par les différentes variables explicatives ainsi qu'une valeur supérieure à 0 pour ce qui est du coefficient d'évaluation de la pertinence prédictive Q² de Stone-Geisser et qui permet d'évaluer la qualité de chaque équation structurelle. En effet, nous avons obtenu la valeur de 0,355 pour notre coefficient de détermination R² c'est-à-dire que 35,5% de la variance du niveau d'adoption de l'intelligence d'affaires par les PME marocaines est expliquée par la combinaison des facteurs technologiques, environnementales, organisationnels et ceux du propriétaire-dirigeant. En nous basant sur les seuils proposés par Croutsche (Croutsche, 2002) nous pouvons conclure que la pertinence prédictive de notre modèle est satisfaisante. Pour ce qui est du coefficient Q² de Stone-Geisser nous avons obtenu une valeur de Q² = 0,202 ce qui veut dire que notre modèle dispose d'un pouvoir prédictif pertinent. Nous avons aussi obtenu un indice de validation globale du modèle (GOF) satisfaisant avec une valeur égale à 0,471 cet indice permet de mesurer jusqu'à quel point nous pouvons compter à la fois sur le modèle de mesure et sur le modèle structurel en même temps.

Pour ce qui est du test des hypothèses de travail. A travers le calcul du T de Student à l'aide de la procédure de rééchantillonnage en utilisant le logiciel SmartPLS V 3.2.8 (C. Ringle et al., 2015) nous avons obtenu la confirmation de trois hypothèses sur quatre, soit la confirmation de l'impact des caractéristiques technologiques, des caractéristiques environnementales et des caractéristiques organisationnelles sur le niveau d'adoption de l'intelligence d'affaires dans les PME marocaines avec des valeurs respectives de T(Caractéristiques technologiques) = 2.074, T(Caractéristiques environnementales) = 4.949 et T(Caractéristiques organisationnelles) = 4.319. Les résultats que nous avons pu obtenir sont en adéquation avec les résultats obtenus par plusieurs chercheurs qui se sont basés sur l'approche multi perspective de la diffusion de l'innovation (Fink, 1998).Cependant et lors de la phase de l'évaluation des relations entre les construits de premier ordre et les construits du second ordre nous avons constaté que deux sous hypothèses entrant dans le cadre de la première hypothèse relative à l'impact des caractéristiques technologiques sur le niveau d'adoption de l'intelligence d'affaires par les PME marocaines à savoir « la complexité » et « l'éssayabilité », présentent des T statistiques inférieurs au seuil que nous avons fixé et qui est de 1.96 (T(Complexité) = 1.746 et T(Esseyabilité) = 1.771). De ce fait nous pouvons dire que la première hypothèse relative aux caractéristiques technologiques est partiellement validée. Cette validation partielle serait due au fait que les outils d'intelligence d'affaires disponibles

sur le marché sont de plus en plus faciles à maitriser et n'exigent plus une grande expertise pour pouvoir cerner leurs fonctionnalités. En plus, ces logiciels disposent aujourd'hui d'interfaces graphiques simples et ergonomiques qui minimisent l'utilisation du code lors de l'établissement de requêtes. Pour ce qui est de l'ésseyabilité, la majorité des fournisseurs de logiciels d'intelligence d'affaires offres des périodes d'essai de leur produit. Cette période d'essai permet aux collaborateurs de se familiariser avec les différentes fonctionnalités du logiciel et d'évaluer, avant son acquisition, l'impact de l'utilisation de cet outil sur le fonctionnement de l'entreprise. Pour ce qui est de la quatrième variable à savoir les caractéristiques du propriétaire-dirigeant et qui comporte deux dimensions que sont l'innovativité du propriétaire-dirigeant, et ses connaissances en TI. La valeur du T statistique obtenue à l'issue de l'exécution de la procédure de rééchantillonnage est inférieur à 1.96 (T(Caractéristiques du Propriétaire-dirigeant) = 1.126) de ce fait nous avons rejeté cette hypothèse bien que ce rejet soit en contradiction avec les résultats de Thong dans son modèle d'adoption des systèmes d'information pour les petites entreprises (Thong, 1999) et de certains chercheurs (Al-Qirim, 2007; Chang & Tsia, 2006; Ghobakhloo et al., 2011; Hwang et al., 2004; Ramdani et al., 2013; Scupola, 2003). En effet, l'adoption des technologies de type intelligence d'affaires serait imposée par l'environnement interne et externe à l'entreprise et par la gestion de son activité. En effet, une augmentation de l'activité, ou sa diversification a comme conséquence directe l'augmentation du volume des données générées au niveau de la PME. De ce fait, il devient indispensable de se doter d'outil d'intelligence d'affaires permettant de gérer efficacement ces volumes de données et de pouvoir les exploiter à des fins d'analyse dans un objectif de permettre aux décideurs de prendre des décisions éclairées et orientées.

Conclusion

L'Homme est doté d'une intelligence qui lui a permis, jusqu'à aujourd'hui, de garantir la survie de son espèce et de gouverner le monde. Possédant un cerveau très développé avec des capacités cognitives et comportementales sans égale, l'Homme cet être intelligent arrive, d'une manière générale, aisément à apprendre, à communiquer et à produire des idées lui permettant d'exister et de s'adapter à son environnement. Par extrapolation, l'entreprise, dont l'Homme constitue la principale ressource et dont l'environnement interne et externe ne cessent d'évoluer et de se compliquer, se trouve plus que n'importe quelle époque dans une obligation de booster son intelligence en se procurant des outils technologiques aptes à lui permettre de s'adapter à son environnement et de se développer. L'intelligence d'affaires est l'outil par excellence permettant à l'entreprise d'atteindre cet objectif.

Dans cette perspective, nous avons visé par le présent travail de recherche de mesurer l'intelligence de la PME marocaine à travers l'identification de son niveau actuel d'adoption de l'intelligence d'affaires en tant qu'outil technologique permettant l'orientation de la prise de décision d'une part, et l'explication des facteurs qui influencent l'adoption de ces outils technologiques d'autres part. Nous avons conçu un modèle basé sur deux principaux modèles théoriques à savoir le modèle d'évolution de l'information et le modèle d'adoption des systèmes d'information pour les petites entreprises (Thong, 1999) et dont la structure causale a été globalement confirmée à travers les résultats d'une enquête que nous avons mené auprès d'un échantillon de PME.

Les résultats obtenus nous ont permis d'identifier le classement de la PME marocaine au niveau de la deuxième strate du modèle d'évolution de l'information. Pour ce qui est de l'analyse des variables nous avons opté pour la méthode des équations structurelles selon l'approche PLS. Dans le cadre de cette méthode nous avons procédé à l'évaluation du modèle de mesure ainsi que le modèle structurel à travers l'évaluation d'une série d'indicateurs qui nous ont permis de valider ces deux modèles et de prouver sa qualité globale. Nous avons pu finalement valider deux hypothèses (caractéristiques environnementales et organisationnelles), valider partiellement une hypothèse (caractéristiques technologiques) et réfuter une hypothèse (caractéristiques du propriétaire-dirigeant). A travers cette étude nous avons pu réaliser en premier lieu un premier baromètre de l'intelligence d'affaires dans les PME marocaines et expliquer les variables qui affectent ce niveau d'adoption de ces outils technologiques. Nous avons donc ouvert le champ pour de nouvelles études et pour la communauté scientifique marocaine pouvant pousser davantage la réflexion sur l'adoption de l'intelligence d'affaires dans notre pays.

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Annexes
Questionnaire de la recherche

L'objectif de cette étude est de :
- Dresser un état des lieux de l'adoption des outils d'intelligence d'affaires (Outils informatiques permettant la collecte, l'exploitation et l'analyse des données et leur présentation sous forme de tableaux de bord, graphiques, etc.) par les PME marocaines comme moyen pour orienter la prise de décision et améliorer leur performance.
- Déterminer les freins qui entravent leur utilisation.
- Développer un modèle d'adoption de ces outils par les PME marocaines.

La réponse à ce questionnaire nécessite 10 à 15 minutes. Vos réponses seront traitées en toute confidentialité et seront utilisées, uniquement, à des fins de recherche.

Nous vous remercions d'avance pour votre collaboration

<u>Informations générales</u>

Prière de cocher la bonne réponse.

<u>Informations sur le participant</u>

1- Sexe :

☐Masculin   ☐Féminin

2- Tranche d'âge :

☐18-20   ☐21-30   ☐31-40   ☐41-50   ☐plus de 50 ans

3- Niveau d'études :

☐Baccalauréat/équivalent   ☐DEUG/DUT/DTS/équivalent   ☐Licence/équivalent ☐Master/ingénieur/équivalent ou plus

4- Votre position au sein de l'entreprise :

☐Propriétaire-dirigeant   ☐Directeur/Manager   ☐Cadre/Ingénieur

<u>Informations sur l'entreprise</u>

5- Secteur d'activité de votre entreprise :

☐ Agriculture, sylviculture et pêche   ☐ Industries extractives
☐Industrie manufacturière   ☐Production et distribution d'électricité, de gaz, de vapeur et d'air conditionné
☐Production et distribution d'eau, assainissement,   ☐Construction

gestion des déchets et dépollution

☐Commerce, réparation d'automobiles et de motocycles ☐Transports et entreposage

☐Hébergement et restauration ☐Information et communication

☐Activités financières et d'assurance ☐Activités immobilières

☐Activités spécialisées, scientifiques et techniques ☐Activités de services administratifs et de soutien

☐Enseignement ☐Santé humaine et action sociale

☐Arts, spectacles et activités récréatives ☐Autres activités de services

☐Activités extra-territoriales

6- Nombre d'employés dans votre entreprise :

☐Propriétaire uniquement ☐2-9 ☐10-250 ☐Plus de 250

7- Chiffre d'affaires de votre entreprise :

☐ Moins de 3 millions de DH ☐Entre 3 et 10 millions de DH ☐Entre 10 et 175 millions de DH ☐Plus de 175 millions de DH

8- Nombre d'années d'existence de votre entreprise :

☐Moins d'1 année d'activité ☐2-5 années ☐6-10 années
☐plus de 10 années d'activité

9- Région où se situe votre entreprise :

☐Tanger-Tétouan-Al Hoceïma ☐L'Oriental ☐Fès-Meknès ☐Rabat-Salé-Kénitra ☐Béni Mellal-Khénifra ☐Casablanca-Settat ☐Marrakech-Safi ☐Drâa-Tafilalet ☐Souss-Massa ☐Guelmim-Oued Noun ☐Laâyoune-Sakia El Hamra ☐Dakhla-Oued Eddahab

10- Quels sont les domaines fonctionnels gérés par des logiciels au sein de votre entreprise :

☐Comptabilité et finance ☐Recherche et développement ☐Gestion des ressources humaines ☐Gestion de la production ☐Marketing et gestion commerciale ☐Gestion des achats ☐Direction et administration générale ☐Logistique ☐Autre (à spécifier) : ……………………………………………………………………………………………...…………………………………………………………………………… ………..

Partie 1 : La gestion de l'information dans l'entreprise

Prière de sélectionner une réponse parmi les choix fournis

11-   Où sont stockées les données de votre entreprise ?

☐Dans un (ou des) ordinateur (s) de bureau (postes de travail)
☐Dans un ordinateur ou serveur départemental avec un accès limité aux personnes relevant de ce département (ou direction).
☐Dans une base de données centrale (ou serveur central de l'entreprise) qui peut être partagée facilement par toutes les directions de l'entreprise.
☐Dans une base de données centrale (ou serveur) qui centralise et stocke des données internes et externes à l'entreprise et qui peut être partagée facilement par toutes les directions.
☐Dans un système sophistiqué qui peut stocker, à la fois, des données structurées (bases de données relationnelles) et non structurées (fichiers de type texte, e-mails, photos numérisées, sons numérisés, etc.) et permet leur exploitation à des fins d'analyse.

12-   Comment sont gérées les données au sein de votre entreprise ?

☐Chaque employé développe, individuellement, sa propre méthode de gestion des données.
☐Les employés dans une même direction gèrent et partagent leurs données.
☐Les employés dans toute l'entreprise gèrent et partagent leurs données.
☐Les données sont utilisées et partagées à la fois au niveau interne et externe à l'entreprise (avec les partenaires externes, parties prenantes etc.).
☐Le processus de création et de partage des données et connaissances au sein de l'entreprise accepte l'innovation.

13-   Comment les employés utilisent-ils les logiciels permettant d'orienter la prise de décision (logiciels qui permettent à partir des données intégrées, de visualiser des tableaux de bord et graphiques de synthèse) ?

☐Ils n'utilisent pas ce type de logiciels et se basent principalement sur leurs propres expériences et intuitions (connaissances accumulées au fil des années).
☐Ils savent moyennement manipuler les logiciels de gestion et d'analyse de données.
☐ Ils savent utiliser les logiciels de gestion et d'analyse des données.
☐ Ils sont capables d'utiliser les logiciels avancés d'aide à la prise de décision (exemple : utilisation de fonctions statistiques et financières avancées sur Microsoft Excel, SAS, COGNOS et autres)
☐ Ce sont des experts dans l'utilisation des logiciels d'aide à la prise de décision, ils possèdent des compétences intellectuelles très élevées leur permettant de défier les méthodes conventionnelles de travail et d'innover continuellement.

14-   Jusqu'à quel point votre entreprise est ouverte au changement ?

☐Le changement est perçu par les employés comme une réelle menace.
☐Les employés peuvent accepter le changement seulement si celui-ci présente des avantages pour eux si non ils manifesteront de la résistance à son égard.

☐Les employés sont habitués au changement et l'acceptent sans difficultés quand il est clairement défini, bien compris et bien assimilé.

☐Les employés perçoivent le changement comme une opportunité plutôt qu'une menace.

☐Tout changement dans le processus de travail ayant abouti à un échec est accepté sans difficulté par les employés et perçue comme une occasion d'apprentissage.

15-   Quelle est l'application d'analyse la plus avancée que votre entreprise a pu implémenter ?

☐Logiciel de génération de rapports de type tableur (ex : Microsoft Excel)

☐Logiciel qui permet de stocker les données dans un format standardisé avec un accès limité aux employés relevant du même département ou direction (ex : les employés de la direction commerciale peuvent avoir accès aux données relatives aux ventes uniquement).

☐Logiciel qui permet de stocker les données dans un format standardisé au niveau de l'entreprise avec la possibilité d'effectuer des requêtes multidimensionnelles par les utilisateurs (ex : les ventes peuvent être visualisées géographiquement et dans le temps).

☐Logiciel qui permet d'identifier les informations utiles, détecter les relations pouvant exister dans les données, générer des rapports multidimensionnels et fournir des résultats prévisionnels voire même prédire le futur.

☐Logiciel qui permet aux utilisateurs de suivre l'activité en temps réel et de générer des reportings automatisés, en se basant sur les données structurées et non structurées, sur les exceptions lorsque quelque chose d'inhabituelle se passe.

Partie 2 : Les facteurs qui influencent l'utilisation des outils d'intelligence d'affaires

Prière d'entourer par un cercle votre degré d'accord ou de désaccord par rapport aux propos suivants :
1 : Pas du tout d'accord   2 : Pas d'accord   3 : Neutre   4 : d'accord
5 : Tout à fait d'accord

NB : Le terme technologie fait référence à l'application utilisée par votre entreprise comme mentionné au niveau de la question n° 15.

Axe 1 : Les caractéristiques technologiques

	Pas du tout d'accord		Neutre		Tout à fait d'accord
Avantage relatif					
Cette technologie permet à votre entreprise d'améliorer l'efficacité de ses opérations.	1	2	3	4	5
Cette technologie fournit des informations sur la concurrence et améliore la prise de décision.	1	2	3	4	5
Cette technologie permet d'accomplir des activités permettant l'amélioration de la stratégie de l'entreprise.	1	2	3	4	5

	1	2	3	4	5
Cette technologie permet de maitriser les problèmes et de présenter des solutions en temps réel.	1	2	3	4	5
Complexité					
Le processus d'introduction de cette technologie fut compliqué.	1	2	3	4	5
L'implémentation de cette technologie fut une opération très compliquée.	1	2	3	4	5
L'apprentissage de l'utilisation de cette technologie fut très difficile	1	2	3	4	5
Les employés de votre entreprise manifestent une certaine résistance à l'égard de cette technologie.	1	2	3	4	5
Compatibilité					
L'utilisation de cette technologie est en parfaite adéquation avec le fonctionnement de l'entreprise.	1	2	3	4	5
L'utilisation de cette technologie est en parfaite concordance avec les valeurs et les croyances qui existent au sein de l'entreprise.	1	2	3	4	5
Cette technologie est compatible avec l'infrastructure technologique de l'entreprise (matériel, réseau, serveurs etc).	1	2	3	4	5
Les changements introduits par cette technologie sont compatibles avec les pratiques opérationnelles.	1	2	3	4	5
Essayabilité					
Les employés de votre entreprise ont eu l'opportunité d'essayer cette technologie avant son adoption.	1	2	3	4	5
Les employés de votre entreprise ont pu essayer toutes les fonctionnalités de cette technologie avant son adoption.	1	2	3	4	5
J'ai pu, personnellement, essayer cette technologie avant son adoption.	1	2	3	4	5
J'ai pu, personnellement, essayer toutes les fonctionnalités de cette technologie avant son adoption.	1	2	3	4	5
Observabilité					
J'ai eu l'occasion de voir cette technologie utilisée dans d'autres entreprises	1	2	3	4	5
Je connaissais l'existence de cette technologie sur le marché.	1	2	3	4	5
Je n'aurais pas de problèmes à communiquer sur les résultats de l'utilisation de cette technologie après l'avoir vu en fonctionnement.	1	2	3	4	5

	1	2	3	4	5
J'avais pris connaissance des répercussions de l'utilisation de cette technologie bien avant son adoption.	1	2	3	4	5

Axe 2 : Les caractéristiques environnementales

Pression concurrentielle

	1	2	3	4	5
Le niveau de la concurrence au sein de notre secteur d'activité a poussé l'entreprise à prendre la décision d'adopter cette technologie.	1	2	3	4	5
Je savais que nos concurrents utilisaient déjà cette technologie.	1	2	3	4	5
Notre entreprise avait besoin de cette technologie pour maintenir sa position concurrentielle sur le marché.	1	2	3	4	5
L'utilisation de cette technologie est une nécessité stratégique pour notre entreprise.	1	2	3	4	5

Sélection des fournisseurs

	1	2	3	4	5
La réputation du fournisseur fut un critère déterminant lors du choix de cette technologie.	1	2	3	4	5
La relation qu'entretenait ce fournisseur avec les autres entreprises clientes fut un critère très important lors du choix de cette technologie.	1	2	3	4	5
La capacité du fournisseur de cette technologie, à planifier et à réaliser le projet fut un élément très important lors du choix de cette technologie.	1	2	3	4	5
La compétence du fournisseur fut un critère très important lors de sa sélection.	1	2	3	4	5

Axe 3 : Les caractéristiques organisationnelles

Capacité d'absorption

	1	2	3	4	5
L'apport de cette technologie pour l'entreprise a bien été compris par les utilisateurs potentiels.	1	2	3	4	5
Les utilisateurs potentiels ont eu besoin d'une formation pour développer leurs compétences et comprendre comment utiliser cette technologie.	1	2	3	4	5
Il n'y avait, pratiquement, aucun obstacle majeur à l'utilisation de cette technologie.	1	2	3	4	5

Les utilisateurs potentiels ont été techniquement aptes à utiliser cette technologie.	1	2	3	4	5

Disponibilité des ressources organisationnelles					
L'entreprise disposait de toutes les ressources nécessaires à l'adoption de cette technologie.	1	2	3	4	5
L'entreprise avait fourni toutes les ressources financières nécessaires à l'adoption de cette technologie.	1	2	3	4	5
D'autres ressources organisationnelles (SI, support technique etc.) ont contribué à la réussite de l'adoption de cette technologie.	1	2	3	4	5
Il n'y avait pas de difficulté à trouver toutes les ressources (financement, RH, temps etc) nécessaires à l'adoption de cette technologie.	1	2	3	4	5

Axe 4 : Les caractéristiques du propriétaire-dirigeant

Innovativité du propriétaire-dirigeant					
J'essaie, toujours, d'introduire des idées originales et novatrices pour améliorer le travail au sein de mon entreprise.	1	2	3	4	5
Je suis en perpétuelle recherche de nouveaux procédés plutôt que de développer ceux déjà existants.	1	2	3	4	5
Je vais prochainement développer du nouveau plutôt que d'améliorer l'existant.	1	2	3	4	5
Je traite toujours les problèmes différemment en utilisant à chaque fois de nouvelles méthodes.	1	2	3	4	5

Connaissances du propriétaire-dirigeant en technologies de l'information					
J'utilise l'ordinateur à la maison.	1	2	3	4	5
J'utilise l'ordinateur au travail.	1	2	3	4	5
J'ai eu l'occasion de participer à des cours en informatique auparavant.	1	2	3	4	5
J'ai un bon niveau en technologies de l'information.	1	2	3	4	5

Merci infiniment de votre participation