Assessing the Impact on SME’s Governance and Resilience in the Period of COVID-19 Crisis in Kenya

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Abstract: The novel 2019 coronavirus (Covid-19) was first appeared in China as a contagious upper respiratory disease. The disease has since spread worldwide showing one of the utmost serious global health crises in history, with high socio-economic costs. While the health effects were directly through contamination, the economic impacts were largely a consequence of the preventive rules adopted by the respective governments to limit the spread including the closing of their borders and partial or total lockdowns of economies which among other things, have seen the temporary closure of businesses, schools and social services. Therefore, these rules have generated important setbacks for Africa’s economies mostly in terms of lost productivity and trade both within and among countries. Precisely, these rules have importantly strained practically all key growth enhancing sectors of many economies, and ultimately, on their overall income. Thus, different institutions in governments of Africa countries have put forward estimates of the anticipated economic losses that could follow the introduction of government measures to restrain the Covid-19 pandemic. Although its impact on the world’s health systems including the rise in mortalities, and the economic toll is still unclear as the world faces an extraordinary global recession. The objective of this study is to look into the factors that influence the resilience of SMEs in Kenya during the spread of the COVID-19 pandemic. The purpose of this research is to investigate the impact of entrepreneurial characteristics, technology use, government support, and governance factors on risk management, which in turn ensures the resilience of SMEs. As a result, we used the structural equation method and the SMART PLS3 software to conduct a quantitative analysis of 80 Kenya’s SMEs. Our findings indicate a positive and significant relationship between entrepreneurial characteristics, governance factors, and crisis management.

Keywords: COVID-19, Kenya, impact, economic development.

1. INTRODUCTION

The Covid-19 is a novel global health, economic and social crisis. According to the global statistics, February 24, 2022, there have been confirmed cases approximately 438,968,263 in 209 countries, territories and areas with 5,969,439 deaths as reported by the World Health Organization (WHO, 2022), with a total of (10,407,359,583) vaccines doses administered. The Covid-19 had caused over 35000 deaths by April 1st, 2020, (WHO Africa, 2020). The virus’s effects have brought economies to a halt, threatening the possibility of achieving many of Sustainable Development Goals, (SDGs). Despite the fact that Africa has the fewest cases globally, the number of cases has been rapidly increased in the year of 2020.

Therefore, only two countries in the WHO African region could test for Covid-19 at the beginning of the outbreak. However, beginning of March 30, 2020, all 47 states in the African countries area was able to test for COVID-19. Though, the ability of countries to fight Covid-19 was largely determined through their health-care systems. In general, Africa had a lower life expectancy and lacks of universal health coverage than other continents. In Africa, the respiratory diseases and HIV are the leading causes of morbidity and mortality. These factors may have an impact on Covid-19's timeliness in Africa, as well as other key public health issues on the continent that are linked to Covid-19. Though, the regional and country specific impacts could be similar in America, Europe and Asia depending on which sectors were severely hit, due to the continents lack of economic resilience and diversification, Africa faces greater risks of seriously negative impacts from COVID-19 for several reasons. Primarily, being the last region to register COVID-19 cases, Africa was already experiencing the consequences mainly through its trade links with the European Union (EU), United States of America (USA) and China, resulting in dwindling markets for African...
exports. Furthermore, though the infection rates in these regions have started to flatten out with economic stimulus and investment recovery plans underway, the opposite holds for Africa. The number of new cases in Africa has yet to reach the inflection point while elsewhere including China and Europe; the reported cases are tapering off. Although the rest of the world is slowly reopening businesses to emerge from the global slowdown, the trend in African economies entails the possibility of a deeper recession as they are likely to face further production and trade related constraints if the rate of infection continues to rise. This research study’s macro-econometric framework assessing the possible effects of COVID-19 on East African economies produces conservative estimates based on global scenarios. Therefore, the estimates should not be taken as final predictions because of its focus on the global shocks that affect trade between East Africa, Africa in general and the rest of the world. All other direct impacts of COVID-19 on Africa’s productivity and government expenditure are held constant. Moreover, the analysis does not consider domestic and multilateral measures being put in place to ease the impact of COVID-19 on the respective African countries.

The COVID-19 has been reported in every country in Eastern Africa so far. Lockdowns, curfews, and travel restrictions were imposed by all countries, to varied degrees, to stem the spread of the epidemic, according to reports from FAO region offices. The subregion is mostly made up of low-income countries (The World Bank, 2020a), with the exception of Djibouti (The World Bank, 2020b) and Kenya (The World Bank, 2020c), which are lower middle-income, and the bulk of the poor live in rural regions or informal settlements. Agriculture and sporadic daily wages are extremely important for survival. Ethiopia, Somalia, and South Sudan's economies are based on livestock. Over 40 million people rely on the livestock industry for their livelihoods, and it accounts for over half of all agricultural output.

The pandemic coincided with the start of the long rains in eastern Africa specifically in Ethiopia, Kenya, Somalia, Sudan, Uganda, Rwanda and Democratic Republic of the Congo joined the bloc recently, and is the fundamental reason for labor intensive staple food and vegetable production across the region. Human movement restrictions due to COVID-19 have resulted in farm-labour shortages, especially for high-value crops and share cropping farmers. Share cropping is common in parts of Ethiopia, Kenya and Somalia. It has reported by the Food Agriculture Organization that inputs like seeds,
fertilizer, veterinary inputs, fish fingerlings and feed; although to a varied degree across countries, which was likely drive a reduction in crop yields. Countries that depend on imported supplies, such as Burundi, Rwanda, Djibouti and Eritrea, and landlocked countries, including South Sudan and Uganda, are affected. Agriculture postponement and advisory services have also faced severe disruptions since lockdown measures have been imposed, reducing farmers ‘access during this critical growing period. Restrictions on cross-border travel have hampered transportation along commodities corridors. Truck drivers were rapidly being identified as a high-risk group for disease transmission in Rwanda, Tanzania, and Uganda (Global Voices, 2020), which could lead to additional restrictions on cargo transport, further disrupting the transfer of agricultural goods. Concerns about safety and the need for COVID-19 tests for long-distance truckers crossing borders in Eastern Africa have resulted in a lack of food truck drivers and delivery delays in Kenya and others countries in the region, (Roussi, 2020).

3. Socio-Economic and Cultural Impacts

Eastern African Region has the highest proportion of people living in poverty and without access to social protection and adequate health care (ILO, 2017). This had an impact on how Covid-19 affects the region, and the Africa in general has a younger population than other continents in the world. However, due to higher levels of malnutrition and disease, Covid-19 may be more deadly in Africa than on other continents. Africa is also the world’s fastest urbanizing region, with 60% of urban settlements being informal. The residents of these informal settlements frequently live in precarious housing where families share a single room as well as houses. In African countries, informal settlements and overcrowded public spaces such as buses and markets may spread COVID-19 in unpredictable ways.

The lack of access to land, shelter, basic services, and transportation increases the virus’s risk and makes countries less resilient to a shock like this. With an informality rate of more than 80% (ILO, 2018), the continent’s labour force frequently lacks income protection insurance.

As schools, government institutions, and businesses close, many people are forced to return home with no alternative source of income, increasing the risk of poverty on the African continent. The lack of alternative sources of income also increases the likelihood that people in African countries will disregard social distancing policies.

In this way, poverty can have an impact on contagion, and contagion can have an impact on poverty. The global economy was already vulnerable prior to the Covid-19 outbreak. These vulnerabilities include: (i) a high debt levels, (ii) trade tensions between major economies, and (iii) income, wealth, and job stability disparities in many countries.

Furthermore, one major difference between these pandemic and previous ones such as the SARS outbreak at the start of the twenty-first century is that the world is more globalized today. As China is now significantly more integrated into the global economy, COVID-19 spreads more quickly and has a greater impact on the global economy. Finally, in conjunction with the COVID-19 outbreak, there has recently been a drop in oil prices. Oil prices fell by approximately 50% in the month of March 2020. This will have a negative impact on net oil exporting countries. Lower oil prices, on the other hand, may have a positive economic impact on oil-importing countries and consumers.

The containment measures that follow Covid-19 are critical to flattening the Covid-19 curve, but they cause both a demand-side and a supply-side shock to economies around the world. Production and supply chain disruptions, as well as liquidity shortages, are having an impact on the supply side. Lower global demand for consumer goods and services, as well as job losses and weaker financial markets, are all having a negative impact on demand.

![Figure 2: Analysis model for Covid-19 Impact measures of containment](Source: Made from above Socio-Economic impact, 2022)
The main contributors to Africa’s GDP are: Agriculture, forestry, fishing, tourism, industry and manufacturing, mining and the financial sector. Many of these sectors are now vulnerable as a result of supply-side and demand-side shortfalls. Many of these industries prohibit workers from home, which increases job losses. Globally, the majority of small and medium-sized enterprises (SMEs) rely on less than one month’s cash flow to stay in business (JP Morgan Institute, 2016). SME’s face even greater challenges in low and middle-income countries. In general, many African companies are under threat, and bankruptcy or closure would result in widespread job losses.

4. Literature Review and Development of Hypotheses

According to Kuckertz, (2020), the crisis is one of the threats that impact the survival and performance of companies. As a result, the current health crisis is become a real threat and challenge to the business world, not only in some regions, but for all companies globally. In this regard, several stakeholders in different fields collaborate with each other to be able to provide solutions effective, in order to control and pass the effective effects of this crisis with good anticipation, (Comfort, 2002; Boin, 2009; Williams, 2017).

In this reason, the work of Kuckertz, (2020), offers useful information, in particular on what needs to be prepared both by business owners and by the support led by government, in order to ensure the regulation and existence of businesses and entrepreneurs in the event of a pandemic. Also, these regulations can be useful for help these companies to face similar crises in the future. Therefore, we are interested in the present research to discover the factors that actually affect the resilience of businesses, particularly small and medium-sized ones in Eastern African Countries.

4.1 Characteristics of the Entrepreneurial Spirit

According to Miller (1983); Rauch, (2009), the entrepreneurship literature, aggressive risk-taking does not lead to generally to success, but rather to the identification of innovative opportunities and their proactive pursuit with a willingness to take risks. The identification, monitoring and assessment of risks are therefore at the heart of the process. Entrepreneurial, (Brühwiler, 2011). As Eshima and Anderson (2017) suggest, when risks are recognized and understood, they can become opportunities and increase the likelihood of risk-taking and creativity (Arzubiaga, 2018). In the same interpretation, having great helps does not generally lead to being a great entrepreneur. However, a true entrepreneur is a person who possesses excellence unique set of traits, skills, and characteristics that allow him to overcome the risks and pursues its objectives at full speed (Echdar, 2012; Umar, 2018). These entrepreneurial characteristics become one of the fundamental assets of entrepreneurs during the crisis to overcome the challenges they face to continue working and to exist. Entrepreneurial resistance is highly dependent on the entrepreneurial spirit that reflected in individual characteristics (Ludmila, 2015).

The character or spirit of the entrepreneur is the basis of the resilience that will lead to his success (Wong, 2005; Barazandeh, 2015; Fisher, 2016). Therefore, the characteristics individual will be the basic capital of the entrepreneurial competence which is very important for someone in the development and maintenance of the company in all situations it faces (Sánchez, 2012; Ahmed Y. A, 2018).

In contrast, research that has investigated the ability of the characteristics of the entrepreneur to deal with crises, in particular the COVID 19, are very limited, Moreover, the majority of this research was done before the pandemic and in different contexts (Hidayat, 2020). However, two major themes were carried out before the pandemic, the first focuses on research into how the business world responds to crisis while the second is related to the best policy to deal with crises (Kuckertz, 2020).

Therefore, the analysis of these two themes through interviews with commercial actors and data relating to individual characteristics, allows the researcher to confirm how to determine the appropriate characteristics of individuals in the face of the crisis caused by the COVID19 (Hidayat, 2020).

According to Hidayat, (2020), the results of the study showed that the most appropriate characteristics to create resilience are entrepreneurial characteristics that focus on the sustainability of the company, the capacity for innovation and creativity and customer orientation. Indeed, these three qualities are all related to the entrepreneurial spirit that allows the entrepreneur to increase the resilience of his company. The characteristics of the leader will be an important element for entrepreneurs in running a business (Fisher, 2016). Individual characteristics importance of entrepreneurs in crisis management are reflected in the desire to continue to survive in the management of a business (sustainability), the future objectives maintained for the success (the desire), always working hard to remain existing (the effort), constantly innovating and be creative to meet customer expectations (Innovation and creativity), always oriented towards satisfying the needs, desires and expectations of customers (the innovation customer). These individual characteristics can influence the crisis management of entrepreneurs facing the COVID-19 pandemic (Hidayat, 2020). With that, our first hypothesis is thus formulated:

**H1:** The characteristics of the entrepreneur would have a positive effect on crisis management.
4.1.1 The use of Technology

According to Kim, (2010); Martine, (2020); Thiam, (2020), the Business and digital (digital) marketing is one of the uses, which allows products or services to be marketed using new technologies. Therefore, digital marketing is one of the precise and effective ways to reach more consumers in a fast, personal and relevant way, because all the processes implemented can be measured and targeted. In short, the use of technology in business is a way to manage good relations with the consumer. These relationships are both profitable and provide convenience to customers (Mastafi, 2016).

Nowadays, to survive in the midst of this pandemic, entrepreneurs must have the power, ro opportunities to circumvent it. They are starting to focus on digital marketing by developing websites that apply e-commerce, the use of networks on social media and sales through electronic marketplaces, or they may also find teams of resellers to sell their products. In fact, the pandemic COVID 19 has brought both threats and opportunities. In fact, entrepreneurs must be able to seize this opportunity and adapt quickly in order to maintain activity and survive the crisis phase, Khairi, (2021); Hidayat, (2020).

According to Yang and Kankanhalli (2014), the use of technology and social media proven to be an effective way to increase customer awareness and satisfaction thanks to a fast and personalized service. In the same vein, the use of technology that aims to support online sales, began to develop before the COVID19 epidemic and further accelerated during the pandemic, (CNUCED, 2020).

In addition, the regulations implemented by public authorities in the majority of countries in the world to promote working from home (teleworking) and home schooling by encouraging people to spend more time at home. Therefore, the use of the Internet, including social media is on the rise, which is an opportunity for entrepreneurs to both large-scale as well as small and medium-sized enterprises to exist, by strengthening the online sales through social media, (Gauthier, 2020).

On the other hand, the use of technology in times of pandemic to anticipate policies confinement followed by social and personal distancing is becoming a major issue. Also, to stay in touch with customers and continue to sell products, the use of technology is becoming a necessity for all businesses (Tremblaya, 2020). In addition, during this crisis, the technology most used by individuals is the social media platforms, the use of the commercial web and a good knowledge of IT are becoming very important factors in crisis management. By the way, Yang and Kankanhalli (2014) confirm this, suggesting that the use of social media exercises strong influence on business performance. On this, our second hypothesis is thus, formulated:

H2: The use of technology would have a positive effect on crisis management.

4.1.2 State Support

In an extraordinary context caused by the COVID 19 pandemic, the authorities of the States most affected have taken strong decisions and measures to protect the national economy in general and society in particular, Kuckertz, (2020). Most political initiatives taken by the government aimed to protect the economy during the COVID-19 crisis from a share and resilience of businesses, industry and broader economic interests on the other hand. These economic rescue efforts are aimed at ensuring stability professional status and work productivity as well as business continuity economic, which is essential to protect the population (Bouhonet, 2020).

Similarly, the presence of the State to curb crises is essential. She became one of research trends during this pandemic period (Tremblaya, 2020; Bouhonet, 2020; Hidayat, 2020). Furthermore, the issue of crisis management in the world of business has raised the issue of business resilience (Doern, Williams, & Vorley, 2019). The mainstream of research is interested in the policies implemented by the government in order to maintain the survival of the business world during the crisis (Alesch, 2009) as well as an in-depth review of existing barriers (Runyan, 2006).

Eastern African Countries have taken ambitious and proactive decisions and measures to reduce the spread of COVID19 and its negative effects on the whole economy. In effect, the public authority had decided to put in place an action plan to reduce the adverse effects of this crisis.

Economically, according to data from the Department of Studies and Forecasts finance from the East Africa Countries economies estimations the pandemic adversely aggravated the global debt crisis. Emerging market and developing economies (EMDEs) were worst affected with government debt estimated to have increased by 930 basis points from 52.1% of GDP in 2019 to 61.4% in 2020 of GDP.

Other measures have been taken by the public authorities in favour of very small Enterprises (VSEs) and Small and Medium Enterprises (SMEs). First, the postponement of credit maturities for a maximum of 6 monthly payments, with the activation of the “Oxygen Demand” guarantee by the central guarantee fund on open credits. Next, the postponement of certain tax declarations for companies in difficulty whose turnover does not exceed 2 million of Kenya Shillings. And also, the suspension of the payment of social security contributions from the NSSF from March 18 to the end
of June 2020, with an exemption free of late payment for said period for employers in difficulty, affiliated at the NSSF (Kenya Statistic Bureau, 2020).

Therefore, government support during the crisis will have significant effects on business activities. As Kuckertz et al., (2020) suggest, the measures put in place by public authorities and government policies provide more flexibility, such as tax breaks and funding will have a huge effect on crisis management. Moreover, these authors underlined the need for systematic efforts in the form of policies that will help entrepreneurs survive their business during the crisis. On this basis, we can advance the following hypothesis:

**H3**: State support would have a positive effect on crisis management.

### 4.1.3 Governance Factors

Corporate governance is an essential mechanism for harmonizing the objectives of principals and agents, and to promote accountability. Indeed, a good corporate governance helps support effective risk management, which in turn provides the flexibility to respond to unforeseen threats and take advantage of opportunities (Armeanu, 2017). Research by Tait & Loosmore (2009) shows that good corporate governance is linked to higher levels of organizational resilience resulting from the benefits financial instruments for investors (Armeanu, 2017). Also, Liang, (2016) have noted that the internal governance mechanisms, including the ownership structure and the functioning of the board of directors are the most used to examine the bankruptcy of companies. Therefore, we will focus in this research work on the effect of governance factors in particular, the age of the manager, the duality of the board of directors, the number of directors and gender diversity on risk management.

The first governance factor, namely the age of the manager, shows that young managers are preoccupied with their careers and are therefore more risk averse, which determines excessive conservatism in investment policies. Indeed, the young managers do not have the reputation of being quality managers, and therefore face more scrutiny of the labor market in the event of a bad investment decision, which could negatively impact their future opportunities (Armeanu, 2017). In the same interpretation, Bucciol & Miniaci (2011) conducted a study on a sample representative made up of American households. The results of this study show that risk tolerance decreases with age and increases with wealth. Similarly, Serfling (2014) argues that the age of the leader is negatively associated with risk, thus providing evidence suggesting that companies expect older leaders to take less time risks. This implies that the preferences of the manager and the company in terms of risk are aligned.

Regarding duality, agency theory suggests that the accumulation of the leader between functions of chairman of the board and the director of the company increases the costs of agencies, which negatively impacts performance (Fama & Jensen, 1983). However, the theory of stewardship encourages dual leadership as a way to reduce agency costs and improve business performance (Clarke, 2004).

According to Hambrick & D’Aveni (1992), companies in which the same person holds the positions of both executive and chairman of the board of directors more prone to bankruptcy. Yet in the case of an independent president of advisory committee, Jensen (1993), argue that the board will be more efficient and that the head of advisory committee will not have the conflicts of interest. In addition, high quality monitoring will be ensured in the event of head of advisory independent committee, showing lower likelihood of organizational failure (Matolcsy, 2004).

As for the size of the board of directors, agency theory suggests that the board large size of directors does not guarantee effective control of the action of the manager, because of the group conflicts that may arise over the large number of administrators (Jensen, 1993). In addition, the small-sized board is more effective in controlling the manager, since directors have more time and freedom to express one self (Godfred, 2015).

However, Uzun, (2004) asserted the lack of correlation between the size of the board and corporate fraud. Also, Wang (2012) found that companies with smaller boards pose greater future risk. In the same order ideas, Wang & Hsu (2013) noticed a negative and non-linear relationship between the size of the board of directors and occurrence of events related to operational risk (Armeanu, 2017).

Ultimately, the presence of women on the board of directors has been the subject of numerous theoretical and empirical studies worldwide (Konrad, Kramer & Erkut, 2008; Ferreira & Adams, 2009). Indeed, Ertac & Gurdal (2012) concluded that women are more averse to risk and competition. This shows that women have tend to follow a less risk-taking approach. According to Charness & Gneezy (2012) found that “women invest less in risky assets than men”. This difference is explained by the fact that women are less inclined to take risks than men when it comes to investing (Djoutsa, 2020). In the same vein, Post, (2015) also claimed that a representation female representation on a board of directors led to the creation sustainability-themed alliances, while Ben, (2015) found an improved communication on voluntary climate change in companies showing a greater proportion of women on boards of directors.

From the literature review presented above, it became clear that good management entrepreneurial characteristics, use of technology, support from the
government and governance factors will contribute a good crisis management that will affect finally the level of resilience of SMEs. This leads us to formulate the following two hypotheses:

**H4:** Governance factors would have a positive effect on the crisis management of SMEs.

**H5:** Crisis management would have a positive effect on the resilience of SMEs.

In short, the following model summarizes the different hypotheses resulting from our review of literature:

![Research Model Diagram]

**Figure 3: The research model**  
Source: The author

### 5. METHODOLOGY

This research aims to examine the elements that influence the resilience of small and medium-sized enterprises (SMEs) during the spread of the COVID-19 pandemic, by introducing the direct and indirect effects of risk management. In this section, we will describe the research methods used to answer our research question. Then, we examine and discuss the various research results.

In order to empirically answer our research problem, we subscribe essentially in the positivist philosophical tradition by following an approach hypothetico-deductive. This method allows us to support a conclusion on the significance of the study hypothesis. The research problem, for its part, is of a nature causal explanation. On this, the quantitative method is the most appropriate. Essentially, quantitative research can establish correlations of measurement and validate or refute the hypotheses of the established research model, based on the calculation of accurate facts and observations with a small margin of error (Hlady Rispal, 2002).

With regard to the selection of SMEs, we first constituted a comprehensive database of information, including email addresses and phone numbers telephone, from a series of data published by the company from the Ministry of Industrialization, trade and enterprise development. The data collected enabled us to conduct our investigation by a questionnaire administered electronically (sent by e-mail) to the SMEs that will be part of our database, (Kenya State department for Industrialisation, 2020).

The sampling technique used in this study is purposive sampling, with a limitation to SMEs that were active before the appearance of COVID-19. Therefore, a questionnaire survey was conducted among the SMEs that will be the subject of our research. This which allowed us to build a sample of 90 observations. The data collected with our respondents will be processed by the method of structural equations (method partial least squares) using SMART PLS software, in order to test the hypotheses of our research model.

### 6. ANALYSIS AND DISCUSSION OF RESULTS

#### 6.1 Characteristics of the Sample

Our research work was carried out with 90 Kenyan SMEs operating in the different regions of the Country. This sample presents quite diverse characteristics in terms of age, sector of activity, number of employees and turnover achieved. These different characteristics are presented in the following table:
Table 1: The demographic characteristics of sample

<table>
<thead>
<tr>
<th>Variables</th>
<th>Terms</th>
<th>Frequencies</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>The age of the company</td>
<td>Below 10 years</td>
<td>-</td>
<td>44</td>
</tr>
<tr>
<td></td>
<td>10 ≤ x &lt; 20</td>
<td>28</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td>20 ≤ x &lt; 40</td>
<td>-</td>
<td>44%</td>
</tr>
<tr>
<td></td>
<td>Over 40</td>
<td>8</td>
<td>10%</td>
</tr>
<tr>
<td>Activity area</td>
<td>Trade, repairs &amp; industry</td>
<td>52</td>
<td>65%</td>
</tr>
<tr>
<td></td>
<td>Economic sector of building and public works</td>
<td>8</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>Real estate, rental and services</td>
<td>8</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>Hotels and restaurants</td>
<td>12</td>
<td>15%</td>
</tr>
<tr>
<td>The region</td>
<td>Mombasa</td>
<td>52</td>
<td>65%</td>
</tr>
<tr>
<td></td>
<td>Kwale</td>
<td>16</td>
<td>20%</td>
</tr>
<tr>
<td></td>
<td>Tana River</td>
<td>8</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>Kiambu</td>
<td>4</td>
<td>5%</td>
</tr>
<tr>
<td>Number of employees</td>
<td>&gt;10</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>10 ≤ x &lt; 50</td>
<td>40</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>50 ≤ x &lt; 100</td>
<td>28</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td>100 ≤ x &lt; 200</td>
<td>12</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>Over 200</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Business capital (In million of Kenyan currency)</td>
<td>&lt;3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>3 ≤ x ≤ 60</td>
<td>64</td>
<td>80%</td>
</tr>
<tr>
<td></td>
<td>60 ≤ x ≤ 120</td>
<td>4</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>120 ≤ x ≤ 175</td>
<td>12</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td>More than 175</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Source: Statistics from our survey 2022

6.2. Presentation and Discussion of Results

In order to analyze the data collected from our respondents, we have mobilized the method of structural equations, under the PLS approach using the Smart PLS 3 software, this which allowed us to test our research hypotheses and our model as a whole, with accounting for measurement errors. Therefore, the first step is to test the reliability and validity of the measurement model, before testing the model’s hypotheses structural.

6.2.1. Reliability and Validity of the Measurement Model

According to Ringle, (2018), Loadings are used to measure the reliability of items. According to the empirical rule, each item should explain at least 50% of the variance of each indicator. Loads of 0.707% or more are preferable. Other authors, however, claim that loadings of 0.6 are also appropriate. For the purposes of our investigation, (Chin, 1998).

The levels of the items are sufficient. Moreover, we kept the RES2 item with a threshold of 0.614, which seems acceptable to us on the basis of the words of Chin (1998), because it allows improve composite reliability and the Average Variance Extracted (AVE). The results indicate that the composite indicator of reliability presents substantial values above the threshold of 0.7. Similarly, for the mean variance extracted, the values given meet the standard, which requires a minimum threshold of 0.5. This demonstrates that the items adhere to a single construct, which is supported by their one-dimensionality (Sleuwaegen, 1992). The table below summarizes all the results of the reliability and valid validity.

1. Characteristic of the Entrepreneur

Table 2: Results of reliability and convergent validity

<table>
<thead>
<tr>
<th>Built</th>
<th>Items</th>
<th>Loading of factors</th>
<th>Reliability composite</th>
<th>The average variance extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneur ’attributes</td>
<td>ESP1</td>
<td>0.854</td>
<td></td>
<td>0.906</td>
</tr>
<tr>
<td></td>
<td>ESP2</td>
<td>0.871</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ESP3</td>
<td>0.893</td>
<td></td>
<td>0.762</td>
</tr>
</tbody>
</table>

Source: From our Survey 2022
2. Government Assistance

<table>
<thead>
<tr>
<th>Built Items</th>
<th>Loading of factors</th>
<th>Reliability composite</th>
<th>The average variance extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assistance from the State</td>
<td>HELP1 0.856</td>
<td></td>
<td>0.730</td>
</tr>
<tr>
<td></td>
<td>HELP2 0.885</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>HELP3 0.821</td>
<td>0.890</td>
<td></td>
</tr>
</tbody>
</table>

Source: From our survey 2022

3. The Technology

<table>
<thead>
<tr>
<th>Built Items</th>
<th>Loading of factors</th>
<th>Reliability composite</th>
<th>The average variance extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The use of technology</td>
<td>TECH1 0.825</td>
<td></td>
<td>0.763</td>
</tr>
<tr>
<td></td>
<td>TECH2 0.908</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TECH3 0.885</td>
<td>0.906</td>
<td></td>
</tr>
</tbody>
</table>

Source: From our survey 2022

4. Governance

<table>
<thead>
<tr>
<th>Built Items</th>
<th>Loading of factors</th>
<th>Reliability composite</th>
<th>The average variance extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The factors of governance</td>
<td>AGE 0.956</td>
<td></td>
<td>0.763</td>
</tr>
<tr>
<td></td>
<td>DOUBLE 0.730</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SIZE 0.931</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DIV 0.859</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: From our survey 2022

5. Management

<table>
<thead>
<tr>
<th>Built Items</th>
<th>Loading of factors</th>
<th>Reliability composite</th>
<th>The average variance extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk management</td>
<td>MGT1 0.878</td>
<td></td>
<td>0.824</td>
</tr>
<tr>
<td></td>
<td>MGT2 0.929</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MGT3 0.916</td>
<td>0.934</td>
<td></td>
</tr>
</tbody>
</table>

Source: From our survey 2022

6. Resilience

<table>
<thead>
<tr>
<th>Built Items</th>
<th>Loading of factors</th>
<th>Reliability composite</th>
<th>The average variance extracted (AVE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resilience aspects</td>
<td>RES1 0.902</td>
<td></td>
<td>0.692</td>
</tr>
<tr>
<td></td>
<td>RES2 0.614</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>RES3 0.942</td>
<td>0.867</td>
<td></td>
</tr>
</tbody>
</table>

Source: From our survey 2022

Assessing discriminant validity is the final step in evaluating the model measure. In fact, it provides the empirical criterion by which a construct can be distinguished from others. It consists in demonstrating that the construct is unique and is used to measure the targeted phenomenon. And nothing else. To do this, we will use the criterion of Fornelle & Larcker (1981), which recommends using the average variance extracted from the data (AVE). According to the data presented in Table 6, the evaluation of the criteria of Fornelle & Larcker (1981) has been validated and fully met the prescribed standard.

We notice that the AVE of each construct given on the main diagonal of the matrix is greater than its correlations with the others row and column components.
Table 3: discriminatory validity results (Root square from AVE)

<table>
<thead>
<tr>
<th>Attributes of entrepreneur</th>
<th>State Support</th>
<th>Technology</th>
<th>Governance Factors</th>
<th>Risk Mgt</th>
<th>Resilience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attributes of entrepreneur</td>
<td>0.873</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State support</td>
<td>0.736</td>
<td>0.908</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology</td>
<td>-0.185</td>
<td>-0.601</td>
<td>0.832</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Governance factors</td>
<td>0.498</td>
<td>0.299</td>
<td>-0.140</td>
<td>0.873</td>
<td></td>
</tr>
<tr>
<td>Risk Management</td>
<td>0.175</td>
<td>-0.252</td>
<td>0.614</td>
<td>0.376</td>
<td>0.855</td>
</tr>
<tr>
<td>Resilience</td>
<td>0.651</td>
<td>0.526</td>
<td>-0.274</td>
<td>0.028</td>
<td>-0.039</td>
</tr>
</tbody>
</table>

Source: From our survey 2022

In short, the evaluation of the measurement model based on the study of convergent validity and discriminant validity reveals that the reliability and validity of the measurement scales of the variables are adequate. This indicates that the prerequisites for validating the measurement model have been satisfied and fully complies with the standard. So, our measurement model after adjustment as follows:

![Figure 4: The measurement model after adjustment](image)

Source: Data from our survey 2022 (SMART PLS3 software output)

6.2.2. Evaluation of the Structural Model
After evaluating the validity of the measurement model, we will in this section analyse the validity of the structural model. Indeed, this stage includes the examination of a set of indicators:
1. Hypothesis test,
2. The coefficient of determination (R²),
3. The predictive relevance(Q²),
4. and the goodness of fit (GOF).

1. Testing Structural Model Assumptions
The validation of the hypotheses essentially depends on the importance of the structural links of the model. To do this, we used two criteria: the T statistic and the P-value. The first criterion states that the value of T must be greater than 1.96 at a significance level of 5% in order to justify a significant link between two variables. The second criterion, in particular the probability of error (P-value) indicates that a hypothesis can be accepted if the link between the two variables is
significant at 95%. In other words, the link does not reach the threshold of significance of 5%. For a hypothesis to be accepted, the P value must be less than 0.05. The results of the hypothesis test are presented in the table below:

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>The relation</th>
<th>Std. Beta</th>
<th>Std. Error</th>
<th>T-value</th>
<th>P-value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Attributes of entrepreneur &gt; Risk management</td>
<td>0.603</td>
<td>0.141</td>
<td>4.293</td>
<td>0.000</td>
<td>Confirmed**</td>
</tr>
<tr>
<td>H2</td>
<td>State support &gt; risk management</td>
<td>-0.417</td>
<td>0.088</td>
<td>4.717</td>
<td>0.000</td>
<td>Confirmed**</td>
</tr>
<tr>
<td>H3</td>
<td>Use of technology &gt; risk management</td>
<td>0.148</td>
<td>0.128</td>
<td>1.157</td>
<td>0.248</td>
<td>rejected</td>
</tr>
<tr>
<td>H4</td>
<td>Governance factors &gt; risk management</td>
<td>0.221</td>
<td>0.102</td>
<td>2.159</td>
<td>0.031</td>
<td>Confirmed*</td>
</tr>
<tr>
<td>H5</td>
<td>Resilience &gt; risk management</td>
<td>0.601</td>
<td>0.037</td>
<td>16.112</td>
<td>0.000</td>
<td>Confirmed**</td>
</tr>
</tbody>
</table>

*Significant relationship ** Highly significant relationship

*Source: Data from our survey 2022*

The results of the hypothesis tests for each of the relationships between the dormant variables presented in table (4) indicate that the entrepreneurial characteristics possessed by entrepreneurs have a positive and significant impact on risk management (p-value = 0.003 < 0.05). So, hypothesis H1 is validated. Also, state support in times of pandemic influence a negative and significant effect on risk management (β = -0.417, p-value = 0.000 < 0.05), this means that hypothesis H2 is not validated. While the use of technology applied by entrepreneurs has no significant effect on risk management (p-value = 0.248 > 0.05). What justifies the validation of hypothesis H3?

Therefore, for governance factors, the results showed a positive association and significant on risk management (p-value = 0.031 < 0.05). This shows that the hypothesis H4 is validated. Ultimately, risk management during the COVID 19 pandemic put in place placed by entrepreneurs on a positive and significant effect on the resilience of SMEs (p-value 0.000 < 0.05). Thus, hypothesis H5 is accepted.

2. Testing the Quality of the Research Model as a whole

The second step in evaluating the structural model is to examine the overall quality of the model using the following criteria: the coefficient of determination (R²), the relevance predictive value of the model (Q²) and the overall goodness of fit of the model (GOF). The results are presented in the table below:

<table>
<thead>
<tr>
<th>The structural relationship</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>Relevance predictive Q²</th>
<th>Goodness of fit GoF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk management</td>
<td>0.710</td>
<td>0.697</td>
<td>0.552</td>
<td>0.636</td>
</tr>
<tr>
<td>Resilience</td>
<td>0.361</td>
<td>0.353</td>
<td>0.225</td>
<td></td>
</tr>
</tbody>
</table>

*Conditions: R² > 0.19; Q² > 0; GoF > 0.1

*Source: Our survey 2022*

According to the results of our research, the coefficient of determination (R²) is of a value of 36.1%, indicating that the four factors (entrepreneur attributes, support from the State, technology use and governance factors) represent on average 36.1% of the change in SME resilience. As suggested by Chin (1998), we can deduce the existence of a moderate relationship between the four factors and the SME resilience. Furthermore, we find that the characteristics of the entrepreneur, the state support, use of technology and governance factors explain 71% the change in risk management. According to the categorization of Chin (1998), this demonstrates a close link between the four factors and risk management.

The second indicator, namely the predictive relevance index Q² is based on the analysis of redundancy coefficients by cross validation of each structural equation. Therefore, according to the categorization suggested by Hair & Sarstedt, (2014), the values of Q² greater than zero for an endogenous latent variable show the predictive validity of the model. This says that our research model has a good predictive capacity.

The last indicator reflects the overall quality of the model. Thus, Tenenbaums, (2004), propose the GOF³ (goodness of fit) index, which quantifies the fit of the structural model. The results of our study showed that the value of the GOF index is 0.636, which shows that the quality of the global model of our study is largely sufficient, being given that the value of the GOF greatly exceeds the value of 0.36 according to the recommendations of Wetzelset, (2009).

6.2.3 DISCUSSION OF RESULTS

After performing the tests relating to the relationship between the factors that impact the
management of crisis and resilience of SMEs during the COVID-19 pandemic, we were able to raise results that stretch this research.

The first result indicated that the attributes of the entrepreneur have a direct and significant on crisis management, and therefore, on the resilience of SMEs. While technology use and government support do not significantly influence crisis management. These results showed that in crisis conditions, especially those generated by the COVID-19 pandemic, business management, personal characteristics, which manifests itself in the entrepreneurial spirit of the businessperson. Consequently, this factor is an essential part of running a business. Thus, according to Fisher, (2016), said that the specific attributes to the entrepreneur constitute an important element for running a business. Indeed, these individual characteristics are of great importance in crisis management which is reflected in the desire to continue to survive in the management of a company in a period of crisis.

The second result shows the existence of a negative and significant relationship between support state and risk management. This result can be explained by the limited size of our study sample, and which contains companies operating in the most affected by the COVID-19 pandemic in particular, the tourism and hotel sector. That said that the measures taken by the Kenyan public authorities were not in favour of the majority of SMEs, particularly those in the tourism sector.

Indeed, SMEs need the support of the government, in particular to overcome the financial problems and working capital. As a result, government support under the form of credit facilitation as legal protection for SMEs, to provide payment terms, rescheduling of debt and suspension of tax payments becomes a real solution to relieve the cash flow management of these companies. These measures make it possible to have the capacity to restructure commercial strategies in a crisis management condition during this unstable period.

As for the use of technology, it turned out to have no significant impact on the crisis management. Indeed, the use of technology such as the use of the Web, the social networking and online shopping are indeed dominant during this pandemic. In fact, it was adopted by SMEs long before the outbreak of the pandemic, so it is not a novelty, even if the intensity has increased.

Our results showed us that governance factors in particular, the age of the manager, the duality of the board of directors, the number of directors and the diversity gender have a positive and highly significant effect on risk management. Which explains that corporate governance always remains a device aimed at securing and stabilizing the business situation in the face of crises and unforeseen threats. Also, this result joins that of several researchers who have shown that good corporate governance promotes effective risk management, providing the flexibility needed to respond to unforeseen threats and take advantage of opportunities (Loosemore& Tait, 2009; Liang, 2016; Armeanu, 2017).

Finally, we find the existence of a highly significant relationship between a risk management and resilience of SMEs. This confirms the observation of several researchers who have shown that risk management provides the company with resilience that generates a competitive advantage, since its ability to circumvent, suppress, defend, respond and adapt to any type of disturbance, while recovering quickly, (Martin & Gatzert, 2015; Anderson & Eshima, 2017; Rehamm & Anwar, 2019).

**CONCLUSION**

The main objective of this research was to assess the elements that influence the resilience of small and medium-sized enterprises (SMEs) during the spread of the COVID 19 pandemic. Our research was based on a structural equation analysis of 80 Kenyan SMEs, the PLS method was applied, at the same time using the SMART PLS3 software. Therefore, we focused on the link between entrepreneurial characteristics, government support, use of technology, governance factors and SME resilience, including management risks.

Therefore, our research has yielded a variety of results and contributions to the existing current research on SME resilience during crises. Business resilience was strongly influenced by the characteristics of the entrepreneur, in particular the entrepreneurial spirit SME managers (entrepreneurial spirit). Thus, an entrepreneur would be able to fight and manage various scenarios to overcome challenges. The results of this study allow to enrich the existing literature on the link between risk management and the resilience of SMEs. It also offers a clear illustration for practitioners and academic researchers on the value of the entrepreneurial attitude, which has proven to be very effective in managing risk. As explained by Fisher, (2016), the entrepreneurial spirit is the cornerstone of the resilience that will lead to entrepreneur success.

Also, this research provided a variety of contributions and managerial implications and theory on risk management. On the managerial level, this research shows us that managers learned how to operate a business under extreme circumstances in which many commercial criteria and procedures was modified, as well as in a totally unprofitable position. From a theoretical point of view, the results of this study are intended to contribute for the advancement of knowledge, particularly in the context of the
management of business and entrepreneurship. The presence of factors having a significant impact on the crisis management is a way to encourage other researchers to conduct studies mainly related to the different situations met by the business in the global context.

As with any study work, our research had some limitations methodologically. First, the rejection of certain hypotheses may be attributable to the small size of the sample. Indeed, we would have liked to increase the size of our sample, but some companies declined to participate in our research. Also, the proposed conceptual model does not take into account additional variables that could have risks management effects, and therefore on the resilience of SMEs, in particular, the ownership structure, which is a crucial indication of corporate governance (Liang, 2016).

In light of its limitations, our research work paves the way for future research. Our research work can be completed by incorporating the limitations presented by this research. First, a larger sample and incorporating other factors that can have an effect on the resilience of SMEs. Second, the conceptual model can be enriched by introducing other cultural and contextual specificities of the SMEs in Kenya.

Finally, we propose in future research to study the effect of each factor of governance, linked to internal control mechanisms, in particular the ownership structure and the functioning of the board of directors, on the resilience of SMEs. This research will make it possible to understand both the extent of the influence of each governance factor on resilience and aspects that highlight the ultimate impact of failure of business.

REFERENCES