
# ENTREPRENEURIAL ORIENTATION, GROWTH OF MSMEs AND THE MODERATED MEDIATION ROLE OF ENVIRONMENTAL FACTORS AND FIRM STRATEGIC CAPABILITIES IN THE MANUFACTURING SECTOR IN NAIROBI COUNTY, KENYA

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# ENTREPRENEURIAL ORIENTATION, GROWTH OF MSMEs AND THE MODERATED MEDIATION ROLE OF ENVIRONMENTAL FACTORS AND FIRM STRATEGIC CAPABILITIES IN THE MANUFACTURING SECTOR IN NAIROBI COUNTY, KENYA

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**ABSTRACT**

*The study set out to determine the moderated mediation role of environmental factors and firm strategic capabilities on the relationship between EO and growth of MSMEs. The study is anchored on the contingency fit view theory and resource-based view. This study is based on the Positivism philosophy and employed explanatory survey design, of a cross-sectional nature. A stratified sample of 384 MSMEs was drawn from a target population of 103,214 registered MSMEs, with a focus on the manufacturing sector in Nairobi County. Data was collected by use of structured questionnaires and analysed by both descriptive and inferential statistics which included multiple regression modelling. The study did not however find a significant moderated mediation role of environmental factors on the indirect relationship between EO and growth of MSMEs, through firm strategic capabilities as the second interaction between environmental factors and firm strategic capabilities was not significant (β=-.0021, P>.05; LLCI=-.0143; ULCI=.0102). It is concluded that among manufacturing sector MSMEs in Kenya, growth is directly, positively and significantly influenced by owner/managers' EO and firm strategic capabilities. The relationship between EO and MSME is also non-linear, moderated by environmental factors. The study therefore validates the contingency fit view, affirming that the association between EO and growth of MSMEs is moderated by environmental factors. The study recommends that government formulates supportive policies that encourage EO and strategic capacity building among manufacturing MSMEs through trainings, access to credit, common equipment facilities, business incubation centres, technology transfer and creating local markets. It is also recommended that despite uncertainty and unfavourable environmental factors, MSME owners/managers ought to practice EO to build strategic capabilities and realize growth. Having adopted a cross-section design, it was not possible to track MSME growth in terms of possible transitions through the growth stages. It is thus suggested that future studies adopt a longitudinal approach.*

***Key Words:*** *Entrepreneurial Orientation, Environmental Factors, Firm Strategic Capabilities, Micro Small and Medium Enterprises, MSME Growth*

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## INTRODUCTION

The growth of Micro, Small, and Medium Enterprises (MSMEs), largely generalized in literature as small businesses (Dziallas & Blind, 2019; Achtenhagen *et al.,* 2020), is a key contributor to economic development and growth mainly through taxation, contribution to Gross Domestic Product (GDP), creation of employment and innovation (PriceWaterhouseCoopers (PWC), 2020; World Bank, 2020; Central Bank of Kenya (CBK), (2021). MSME are also considered critical in the realization of the Sustainable Development Goals (SDGs), particularly goal 8 (decent work and environment); and goal 12 (sustainable production and consumption) (World Bank, 2020). In contrast to large corporations where growth is largely attributed to strategy and firm-level entrepreneurship, growth among MSMEs is largely tied to the owner/manager's EO owing to their decision-making autonomy and direct involvement in day-to-day business operations (Okoli *et al.,* 2021). This implies that to realize growth, MSME owners/managers ought to proactively seek out market opportunities, innovate and invest resources despite uncertainties in the external business environment, in order to build strategic capabilities necessary for growth (Neneh & van Zyl, 2017; Liberman-Yaconi *et al.,* 2019; Oni *et al.,* 2019; Okoli *et al.,* 2021).

The foregoing implies that for desirable MSME growth, there ought to be an alignment among owner/managers' EO, firm strategic capabilities and the external business environment factors. This is consistent with the contingency fit view theory, in which Lumpkin and Dess (1996) opine that for desirable business outcomes, Entrepreneurial orientation (EO) ought to be aligned with various contextual factors which can be categorized as external (environmental) and internal (firm-level) aspects. Also, in tandem with the dynamic capability theory (DCT) (Teece *et al.,* 1997), MSME owners/managers need to mobilize key firm resources to build capabilities needed to keep up with the dynamic business environment to achieve growth. Further, small business growth ideally necessitates an enabling business environment in line with the economic theory of entrepreneurship (Papanek, 1962). Ultimately, as opined by Churchill and Lewis's (1983) life cycle theory, depending on whether or not all factors align in support of growth, small businesses either grow out of the MSME bracket during their development or remain MSMEs or collapse. The foregoing conceptual and theoretical arguments bring to the fore, three key concepts requisite in MSME growth. These include EO (Lumpkin & Dess, 1996; Okoli *et al.,* 2021), firm strategic capabilities (Neneh & van Zyl, 2017; Teece *et al.,* 1997) and environmental factors (Papanek, 1962; Oni *et al.,* 2019; Churchill & Lewis, 1983). Against this backdrop, this study was anchored on the contingency fit view and supported by DCT, the economic theory of entrepreneurship and the life cycle theory.

The growth of MSMEs has been directly associated with the growth and development of many developed and developing countries globally, including the United States of America (USA), China, India, South Korea, Malaysia, Taiwan and Thailand among a host of other OECD countries whose MSME contribution to employment ranges from 60-70% and over 50% of Gross Domestic Product (GDP) (OECD, 2017). Close to 90% of industrial establishments in South East Asian countries are under MSMEs (United Nations Industrial Development Organization (UNIDO), 2018). In the European Union (EU), MSMEs constitute 99.8% of all businesses as well as employ 76 million people representing 67.4% of total employment (EU, 2017). In emerging economies, MSMEs contribute over 45% of employment in general and 33% of GDP (OECD, 2017). Accounting for up to 92% of businesses in the economy, the MSME sector is the leading business form in Ghana, contributing 49% of the country's GDP (UNIDO, 2018). According to PWC (2020), MSMEs in Nigeria account for 96% of


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businesses, and contribute 48% of national GDP and 84% of employment.

In Kenya, MSMEs employ over 80% of the working population, contribute over 60% to the country's GDP and constitute 98% of all businesses in Kenya (KAM, 2024a; Pradhan, 2023). MSMEs are a particularly critical part of manufacturing in the country, and play a critical role in bringing about innovation and creating employment in the sector (KAM, 2020). This is corroborated by the KAM (2024b) who reports that the MSME sector employs 85% of the country's manufacturing sector workforce. In acknowledgement of this, the government of Kenya has over the years initiated a number of policies aimed at enhancing growth and development of MSMEs. However, despite the growing policy support, growth of MSMEs continues to be a challenge in Kenya, with a majority either stagnating or failing within 3 years of establishment (KNBS, 2016). According to Sessional Paper No. 2 of 2005, 60% of small businesses in Kenya cease operations within the first three years of their establishment (Government of Kenya, 2015). KNBS (2021) further found that 46% of the MSMEs surveyed failed within their first year.

Growth in Kenya's manufacturing sector has been on a decline for eight (10) successive years leading to the year 2023, suggesting a premature deindustrialization (Kenya Nation Bureau of Statistics (KNBS, 2021). This is highlighted by a dwindling contribution to GDP, from an average of 10% between 2008 and 2014, to 9.2% in 2016, 8.4% in 2017, 7.7% in 2018, 7.9% in 2019, 7.6% in 2020, 7.3 per cent in 2021 and 7.2% in 2022 (KAM 2018; KAM, 2020; KNBS, 2021; KNBS, 2023). While the sector's GDP contribution grew to 7.8% in 2023, its overall growth slowed down to 2.0 per cent in 2023 compared to 3.8 per cent in 2022 (KNBS, 2023). These statistics indicate an underlying practical growth problem in the manufacturing sector, 65% of which is made up of MSMEs concentrated in Nairobi City County (KAM, 2020). It however remains unexplored in the Kenyan body of knowledge, how the observed dismal growth among manufacturing sector MSMEs in the country is directly linked to MSME owner/manager's EO and indirectly to various indirect causal factors both internal and external to the business, as well as how the indirect causal factors interact to influence growth in line with the contingency fit view advanced by Lumpkin and Dess (1996).

This foregoing knowledge gap is occasioned by a majority of studies in the Kenyan body of knowledge focusing on MSME performance at the expense of MSME growth. For instance, Mwangi and Ngugi (2017) explored how growth among micro and small enterprises in Kerugoya, Kenya is influenced by EO but did not on focus on the manufacturing sector. The study was also linear in conceptualization, overlooking any causal factors either internal and external to the business. Ng'aru (2019) assessed the linkage between mid-sized enterprises' growth in Kenya and EO, moderated by industry experience. The study was however limited to mid-sized enterprises and did not focus on the manufacturing sector. Further, none of the published studies has tested the moderating role of environmental factors on the indirect association between owner/manager EO and growth through firm strategic capabilities. This study therefore sought to answer the research question; what is the moderated mediation role of environmental factors on the indirect association between owner/manager EO and growth of manufacturing sector MSMEs through firm strategic capabilities in Nairobi County, Kenya? The main objective of the study was thus to determine the moderated mediation role of environmental factors and firm strategic capabilities on the association between entrepreneurial orientation and growth of MSMEs in Manufacturing sector, in Nairobi County, Kenya.

## LITERATURE REVIEW

This section presents the literature review which covers both theoretical review and empirical review pertinent to determining the moderated mediation role of environmental factors and firm strategic


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capabilities on the association between entrepreneurial orientation and growth of MSMEs in Manufacturing sector, in Nairobi County, Kenya.

***Theoretical Review***

The literature review is informed by a synthesis of several theories that contribute to understanding the dynamics of MSME growth. The contingency fit view theory, particularly advocated by Lumpkin and Dess (1996), emphasizes the alignment of EO with both organizational (internal) and environmental (external) factors for optimal business outcomes. This theory serves as a foundational framework, highlighting the necessity for a harmonious interplay between EO, internal strategic capabilities, and external environmental factors in the context of manufacturing sector MSMEs. Dynamic Capability Theory, advanced by Teece et al. (1997), supplements the Resource-Based View, elucidating how MSME owners/managers leverage strategic capabilities to navigate dynamic business environments and achieve growth. The Economic Theory of Entrepreneurship, proposed by Papanek (1962), underpins the study's exploration of economic factors influencing MSME growth, especially in the interaction with government policies. Finally, the Life Cycle Theory by Churchill and Lewis (1983) provides insights into the linear growth trajectory of MSMEs, underscoring the influence of both external and internal factors on their development. Together, these theories shape the conceptual framework, enriching the understanding of the nuanced factors impacting MSME growth in the manufacturing sector in Kenya.

***Empirical Review of Literature***

The literature review delves into the critical dimensions of EO, firm strategic capabilities, and environmental factors, with a particular focus on their interconnectedness and impact on the growth of MSMEs. Specifically, the review explores the empirical literature pertinent to determining the moderated mediation role of environmental factors and firm strategic capabilities on the association between entrepreneurial orientation and growth of MSMEs in Manufacturing sector, in Nairobi County, Kenya.

*Entrepreneurial and MSME Growth*

Okoli et al. (2021) conducted a study in Southeast Nigeria, focusing on SMEs and their performance influenced by EO. Utilizing survey tools and a census of 386 SMEs across five states, the research revealed a significant and positive linkage between risk-taking, innovativeness, and proactiveness on SME performance. The findings suggested that entrepreneurially oriented firms, through innovation and customer-oriented services, gained a competitive advantage in the industry. Similarly, Kusumwardhani (2019) investigated the role of EO in firm performance among Indonesian SMEs in Central Java. Using a mix of quantitative and qualitative approaches, the study found that, out of the five dimensions of EO studied, only proactiveness had a significant and positive association with firm performance. Finally, Mwangi and Ngugi (2017) explored the influence of EO on SME growth in Kerugoya, Kenya, defining EO with dimensions such as proactiveness, risk-taking, and innovativeness. Their study, employing a descriptive design and a multivariate regression model, concluded that these EO dimensions, along with the competence of entrepreneurial managers, significantly and positively influenced SME growth. Based on the foregoing literature, the study set out to the first null hypothesis:

**$H_{01}$**: Entrepreneurial orientation does not have a significant effect on MSME growth

***Entrepreneurial Orientation and Firm Strategic Capabilities***

Kowo and Akanmu (2021) conducted a study to investigate the influence of Organizational Culture on Entrepreneurial Orientation (EO) and its subsequent impact on firm performance among Small and Medium Enterprises registered with the Small and Medium Enterprises Development Agency of Nigeria in Lagos State. Their findings revealed that organizational culture is EO-driven,


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suggesting that organizational culture has the potential to support and influence SME performance, ultimately enhancing competitiveness. Ho et al. (2023) explored the relationship between Strategic Human Resource Management, dynamic capabilities, and EO in SMEs using a resource-based view framework. Their study, based on time-lagged data from 456 SMEs in Australia, confirmed that SHRM has an indirect positive association with innovation through its impact on dynamic capabilities. Additionally, EO was found to have an indirect positive association with innovation through its impact on dynamic capabilities, and EO moderated the positive relationship between dynamic capabilities and innovation. Mkalama (2020), employing a triangulated research design and stratified random sampling, found that entrepreneurial orientation significantly influences firm innovativeness. Based on the foregoing literature, the study set out to the second null hypothesis:

**$H_{02}$:** Entrepreneurial orientation does not have a significant effect on firm strategic capabilities

***Firm Strategic Capabilities and MSME Growth***

Ramayah et al. (2019) investigated the mediating role of market orientation in the relationship between SMEs performance and EO in Malaysia. Sampling 500 SMEs in the beverages and food manufacturing industry, their study, which employed partial least squares for data analysis, revealed a significant association between MO and EO. Additionally, SME performance was found to be significantly associated with MO, and MO was identified as a mediator in the relationship between SMEs' performance and EO. Kimani (2016) conducted a study in Kenya, exploring the connection between business performance and market orientation among SMEs. With a sample size of 160 employees, the study utilized both descriptive and explanatory techniques, revealing a positive correlation between market orientation and SME performance in Nairobi County. Performance was positively linked to all four dimensions of market orientation, suggesting that an increase in each dimension leads to an increase in overall performance. In contrast, Acquaah and Agyapong (2015) investigated the moderating role of marketing and managerial capabilities in the association between firm performance and competitive strategy using data from 581 SMEs in Ghana. Their results indicated that both marketing and managerial capabilities moderate the relationship between performance and competitive strategy. In light of these findings, the study set out to test the third null hypothesis:

**$H_{03}$:** Firm strategic capabilities do not have a significant effect on MSME growth

***Entrepreneurial Orientation, Firm Strategic Capabilities and MSME Growth***

Yang and Aumeboonsuke (2022) delved into the mediating roles of competitive strategies and knowledge creation processes among Chinese SMEs in Thailand, examining their impact on the relationship between entrepreneurial orientation and firm performance. Utilizing a structural equation model on data collected from these SMEs, the study revealed a positive connection between entrepreneurial orientation and firm performance. Both competitive strategy and knowledge creation processes individually mediated the relationship, and collectively, they formed a chain mediating effect between entrepreneurial orientation and firm performance. Abiodun and Kida (2022) conducted a study re-examining the appropriateness of adopting strategic entrepreneurial orientation and its impact on SME performance in Nigeria. The results affirmed a statistically significant and positive relationship between entrepreneurial orientation and SME performance, emphasizing the relevance of entrepreneurial orientation as a valuable and difficult-to-imitate asset for SMEs, providing them with a source of competitive advantage. Mkalama (2020) aimed to establish the effect of entrepreneurial orientation, technological capability, and environmental dynamism on firm


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innovativeness within manufacturing SMEs in Nairobi County. The study reported inconclusive results regarding the effect of technological capability on the relationship between entrepreneurial orientation and firm innovativeness. Building on these studies, the research formulated the fourth null hypothesis:

**$H_{04}$:** Firm strategic capabilities do not mediate the relationship between entrepreneurial orientation and MSME growth

***Environmental Factors, EO and Firm Strategic Capabilities***

Martin and Javalgi (2019) explored the moderating role of competitive intensity in the relationship between EO, marketing capabilities, and performance within Latin American International New Ventures (INVs). Utilizing a parsimonious structural model, the study found that the association between INVs' marketing capabilities and EO is moderated by competitive intensity, suggesting that EO becomes a crucial component for enhancing marketing capabilities, particularly in high-competitive environments. Tajeddini and Mueller (2018) investigated how environmental dynamism moderates the association between financial performance and a firm's EO using a sample of 192 Swiss firms across various sectors. The findings indicated that in highly dynamic environments, the positive influence of EO on financial performance is strengthened. In a study focused on China, Jiao et al. (2017) explored the moderating role of environmental dynamism in the association between new venture performance and dynamic capabilities strategy in a developing economy. The results showed that while innovation strategy significantly and positively influenced dynamic capabilities, the interaction between environmental dynamism and innovation strategy did not significantly predict dynamic capacities, suggesting that innovation strategy can enhance dynamic capabilities in both stable and rapidly changing environments. Based on these studies, the third null hypothesis ($H_{05}$) was formulated:

**$H_{05}$:** Environmental factors do not moderate the relationship between entrepreneurial orientation and firm strategic capabilities

***Environmental Factors, EO and MSME growth***

Distanont and Khongmalai (2018) revealed that rapid technological advancements impact the ability of innovative leadership to adopt the latest technology, emphasizing the influence of technology trends on organizational innovation. Similarly, Tohidi and Jabbari (2017) found that innovation is influenced by competition among firms, highlighting the role of competitive pressures in driving innovation among businesses. The limited infrastructure of manufacturing SMEs to initiate significant innovations is countered by the competitive environment, which compels them to innovate rapidly to gain a strong competitive advantage and ensure sustainability. Aragón-Correa and Sharma (2016) identified various deterrent factors to entrepreneurial risk-taking, such as business environment risks, policy changes, information asymmetry, and managerial challenges. On the other hand, Li and Atuahene-Gima (2017) argued that in uncertain business environments, leaders are motivated to seek external information, shape administrative processes, and develop strategic proactivity, enhancing their ability to identify opportunities and explore innovative approaches to address unforeseen challenges. The study thus formulated the sixth null hypothesis ($H_{06}$):

**$H_{06}$:** Environmental factors do not significantly moderate the relationship between entrepreneurial orientation and MSME growth

***Environmental Factors, Firm Strategic Capabilities and MSME growth***

Kithusi (2015) conducted a study on the furniture sector in Nairobi, revealing that the association between MSME firm performance and resources was not significantly moderated by the external environment. This contrasts with Jaoua (2014), who found in a global performance context that the


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environment is positively associated with strategic management adoption, with a stronger impact in turbulent and dynamic environments. The inconsistency may be attributed to methodological differences, with Kithusi focusing on MSME growth while Jaoua investigated global performance. In Malaysia, Yusoff's (2020) desktop review on business support services highlighted the importance of the business support role among SMEs. However, service providers face challenges in an intricate and dynamic business environment characterized by issues such as unsupportive conditions, incompetency, bureaucracy, and unmatched products. In Indonesia, Kusumawardhani et al. (2019) explored the government's role in MSMEs through the Iptekda program, revealing positive impacts on insights, marketing, and productivity. The study aimed to thus test the seventh null hypothesis ($H_{07}$):

**$H_{07}$:** Environmental factors do not significantly moderate the relationship between firm strategic capabilities and MSME growth

***Environmental Factors, EO, Firm Strategic Capabilities and MSME Growth***

Atinc and Ocal (2020) explored the moderating role of environmental munificence, complexity, and dynamism on the association between changes in board and top management teams and firm performance in young entrepreneurial firms. Despite controlling for demographic variables, the study found that these environmental dimensions did not moderate the relationship between firm performance and the rate of change in top management teams. However, environmental munificence and complexity exacerbated the negative association between firm performance and changes in the board of directors. In China, Gima and Li (2019) investigated the influence of product innovation strategy on the performance of new technology ventures, highlighting the dependence on relationship-based strategies and environmental factors. The study emphasized the need for simultaneous consideration of both relationship- and environment-based strategy factors in moderating the discourse on product innovation strategy among new technology ventures. Bonsu (2018) examined the moderating role of competitive intensity on the association between organizational capabilities and business performance in Ghanaian SMEs. The study, involving 196 SMEs, revealed a direct association between organizational performance and capabilities, with family SMEs encouraged to enhance managerial and marketing capabilities for superior returns. The study thus aimed to test the hypothesis eighth null hypothesis ($H_{08}$):

***$H_{08}$:*** *Environmental factors do not moderate the indirect relationship between entrepreneurial orientation and MSME growth via firm strategic capabilities*

**METHODOLOGY**

The present study's epistemological, ontological and axiological assumptions align with the positivism philosophy, defined by Saunders et al. (2019) as entailing the communication with the real world, impartiality, objective reality, consistency, confirmability, explanation of regularities and dependability. The philosophy was deemed a good fit, as the data sought in the study was purely quantitative and that quantitative approaches were used in data collection, analysis and hypothesis testing. The study also adopted the explanatory research design of a cross sectional nature. Lee and Ling (2008) define an explanatory research design as one that attempts to connect ideas to understand cause and effect, as well as understand the interaction of concepts. As indicated by Kothari (2019), cross-sectional survey designs entails collecting a set of information for a sample at one point in time. The design was thus also a good fit, as the study sought to explain the hypothesized relationships between and among the study variables, using data collection at one point in time.

The study was carried out in Nairobi City County, one of the 47 counties of Kenya. The study was


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particularly carried out across the county with a focus on nine (9) manufacturing zones within Nairobi County as per the NCC planning department formed the strata. These include Peri-Central Business District (CBD), Main Industrial Area, Dandora Industrial Zone, Kariobangi Industrial Zone, Mathare North, Baba Dogo, Zimmerman, Githurai 44 and 45 and Kahawa West. The target population for this study included all manufacturing sector MSMEs in Nairobi County, which totaled 103,214 as per the Nairobi City County (NCC) revenue department. These were distributed across the county in seventeen (17) different sub-sectors. To obtain the sample size, the Fisher and Gitelson (1983) sample size determination formula was employed as follows:

$$n = \frac{Z^2 pq}{d^2}$$

Where n = the desired sample from populations with greater than 10,000 individuals

Z = is the given normal deviate at the set level of confidence (1.96) at 0.05

p = is the share of the population projected to bear the attributes being measured when uncertain, so a middle ground (0.5) is taken

q = 1-p

d is statistical significance level

Therefore n = $\frac{1.96^2 x 0.5 x 0.5}{0.05^2} = 384$

As such, the determined sample size was 384. To arrive at the established sample (384), the study first employed stratified sampling based on Sub-sectors as the strata, where the sampling frame (103,214) was first broken down into 17 categories, as per the 17 sub-sectors. Business entities under each subsector were then listed down and pasted into the Microsoft (MS) Excel programme. Simple random sampling was then employed, in which random numbers were assigned to each business entity under the respective subsectors and automatically randomized. The randomized lists were then extracted from the subsectors according to their established sample sizes. These were then manually located and distributed across the 9 manufacturing zones based on their registered addresses as per the NCC planning department.

***Variable Measurement***

The study collected primary quantitative data using structured questionnaires were employed in this study, developed based on adoption and modification from previous studies. The dependent variable, MSMEs growth was measured by growth in value of assets, market share, production capacity, sales, profits, and number of employees. The measures of growth were adopted and modified from previous studies including: Neneh and Zyl (2017); Gurbuz & Aykol (2017); and Yamoah (2016). The independent variable, EO was measured by 3 sub-scales including: Innovativeness, Risk Propensity and Proactiveness. These are established measurement scales and are adopted and modified from a number of previous studies including Osoro (2012) and Neneh and Zyl (2017). The moderating variable, environmental factors was measured by 3 sub-scales including regulatory policies, government support and competition. The measures of Environmental Factors were adopted and modified from previous studies including: Yusoff (2020), Govori (2017), Kusumawardhani *et al.* (2019) and Kyenze (2016). These were then subjected to factor analysis for validation. Firm Strategic Capabilities, the mediating variable was measured by 2 sub-scales including: Firm resources and Market Orientation. These are also established measurement scales for Firm entrepreneurial orientation and are adopted and modified from previous studies including: Fonger (2017), Parida (2018), Chen *et al.* (2018) and Kraa (2019).

Throughout the hypothesis tests, the study controlled for both enterprise age and sub-sector, as they have been found in previous studies to influence firm growth. Based on business register data, recent academic research has for instance identified that rather than its size, a firm's age is the


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key determinant of employment growth and net job creation (Blesa & Ripollés, 2016; Byoungho & Hyeon, 2018).

***Model Specification***

The study adopted regression models 4 and 59 as developed by Hayes (2013), who introduced regression analyses containing various groupings of covariates, moderators, and mediators and their respective modifications to statistical programs like SPSS for computing purposes. Model 4 illustrated in Figure 1 was used to test hypotheses $H_{01}$, $H_{02}$ $H_{03}$ and $H_{04}$.

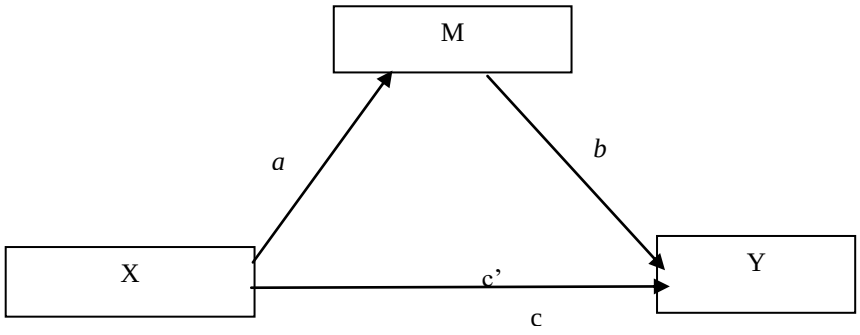


**Figure 1: Hayes Model 4**
Source: Hayes (2013)

Where:
a is the direct effect of X on M; b is the direct effect of M on Y; c is the direct effect of X on Y; c' is the indirect effect of X on Y through M. Accordingly, the PROCESS macro, a plugin developed by Hayes (2013) was installed into SPSS to aid in all the statistical analyses to test for direct effects, mediation, moderation and moderated mediation.

***Controls***

The study controlled for Age and Sub-sector in order to avoid the variables' confounding influence on the outcomes of both the direct and indirect regression analyses. To this end, all the direct regression analyses involved two models, with Model 1 including the control variables, Age and Sub-sector while the independent variables of interested were introduced in Model 2. In Mediation, Moderation and Moderated Mediation, the control variables were included as confounding factors in the models.

***Direct Effect***

The study tested three (3) simple direct effects of factor variables on outcome variables. The study first tested the direct effect of EO on MSME Growth. Based on the first direct effect, the study tested hypothesis 1 as per Model 2.

$Y = \alpha_1 + c_1Age + c_2Subsector + \varepsilon_1$. …… Model 1 (Control)

$Y = \alpha_2 + c_3Age + c_4Subsector + c_5X + \varepsilon_{2\ldots}$… Model 2 (Direct Effect)

Where: Y = MSME Growth; α = Model constant; c = Beta coefficients; X = EO; ε = Error term

The study also tested the direct effect of EO on firm strategic capabilities. Based on the second direct effect, the study tested hypothesis 2 as per Model 4.

$M = \alpha_3 + a_1Age + a_2Subsector + \varepsilon_3$..... Model 3 (Control)

$M = \alpha_4 + a_3Age + a_4Subsector + a_5X + \varepsilon_4$..... Model 4 (Direct effect)

Where: M = Firm Strategic Capabilities; α = Model constant; a = Coefficients; X = EO; ε = Error term

The study further tested the third direct effect of firm strategic capabilities on MSME Growth. Based on the third direct effect, the study tested hypothesis 3 as per Model 6.


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$Y = \alpha_5 + b_1Age + b_2Subsector + \varepsilon_5$..... Model 5 (Control)

$Y = \alpha_6 + b_3Age + b_4Subsectoer + b_5M + \varepsilon_6$..... Model 6 (Direct effect)

Where: Y = MSME Growth; M = Firm Strategic Capabilities; α = Model constant; b = Coefficients; ε = Error term

***Mediation***

Mediation analysis tested for the indirect effect of X on Y via the mediating variable, M (firm strategic capabilities). To this end, the study first tested for the direct effect of X on M and noted the statistical significance of the effect. In the second equation, the indirect effect of X on Y via M was tested. The mediation effect is said to be significant if the coefficient of bM is statistically non-zero and its confidence interval excludes a zero value. Based on the mediation analysis effect, the study tested hypothesis 4 as per Model 7.

$M = \alpha_4 + a_3Age + a_4Subsector + a_5X + \varepsilon_4$..... Model 4 (Direct effect)

$Y = \alpha_7 + a_6Age + a_7Subsector + c'_1X + b_6M + \varepsilon_7$..... Model 7 (Mediating effect)

$H_{04}$= $a_5*b_6$..... Mediation is determined by significance of the indirect path from EO to MSME growth through Firm Strategic Capabilities, which is obtained by the product of $a_5$ (X to M) and $b_6$ (M to Y)

Note: **a** is from model 4 and **b** from model 6

Where: Y = MSME Growth; M = Firm Strategic Capabilities; $\alpha_4$ = Model constant; *c'* = Coefficient of respective variables; X = Entrepreneurial Orientation; *b* = Coefficient of Firm Strategic Capabilities; ε = Error term

***Moderation***

Moderation analysis was conducted in three parts. First, the study tested for the direct effect of an interaction between X and the moderating variable W (environmental factors) on M. Secondly, the study tested the direct effect of an interaction between X and W on Y. In the third part, the study interaction M and W and tested the effect of the interaction on Y. The moderation effect is said to be significant if the coefficient of interaction is non-zero and its confidence interval excludes a zero value. As such, moderation analysis was employed in testing hypotheses 5, 6 and 7 based on Models 8, 9 and 10 respectively.

$M = \alpha_8 + a_8Age + a_9Subsector + a_5X + a_{10}W + a_{11}X*W + \varepsilon_8$..... (Model 8)

$Y = \alpha_9 + c'_2Age + c'_3Subsector + c'_1X + c'_4W + c'_5X*W + \varepsilon_9 + \varepsilon_9$ ..... (Model 9)

$Y = \alpha_{10} + c'_6Age + c'_7Subsector + b_6M + c'_8W + b_7M*W + \varepsilon_{10}$..... (Model 10)

Where: $\alpha_1$ = Constant of Model 1; M = Firm Strategic Capabilities; X = Entrepreneurial Orientation; W = Environmental Factors; a = Coefficients; *c'* = Variable coefficients for indirect effects ε = Error term

Where: $\alpha_1$ = Constant of Model 1; M = Firm Strategic Capabilities; X = Entrepreneurial Orientation; W = Environmental Factors; a = Coefficients; *c'* = Variable coefficients for indirect effects ε = Error term

***Moderated Mediation***

Under the moderated mediation analysis, the study tested whether the conditionality of the indirect effect of X on Y via M was through W. The analysis was performed in two equations with M and Y as the outcome variables respectively, from combining both Model 8 and 11. The equations are derived from model 59 process macro. The moderated mediation is considered significant if the coefficient of the second interaction between M and W with Y as the outcome variables is non-zero and its confidence interval excludes a zero value (Hayes, 2016). This was performed in testing hypothesis 6.

$M = \alpha_8 + a_8Age + a_9Subsector + a_5X + a_{10}W + a_{11}X*W + \varepsilon_8$..... (Model 8)

$Y = \alpha_2 + c'_9Age + c'_{10}Subsector + b_6M + c'_1X + c'_{11}W + c'_5X*W + b_7M*W + \varepsilon$ (Model 11)


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**= ($a_5$+$a_{10}$W) ($b_6$+$b_7$W)**……(Combined Model 8 and 11)

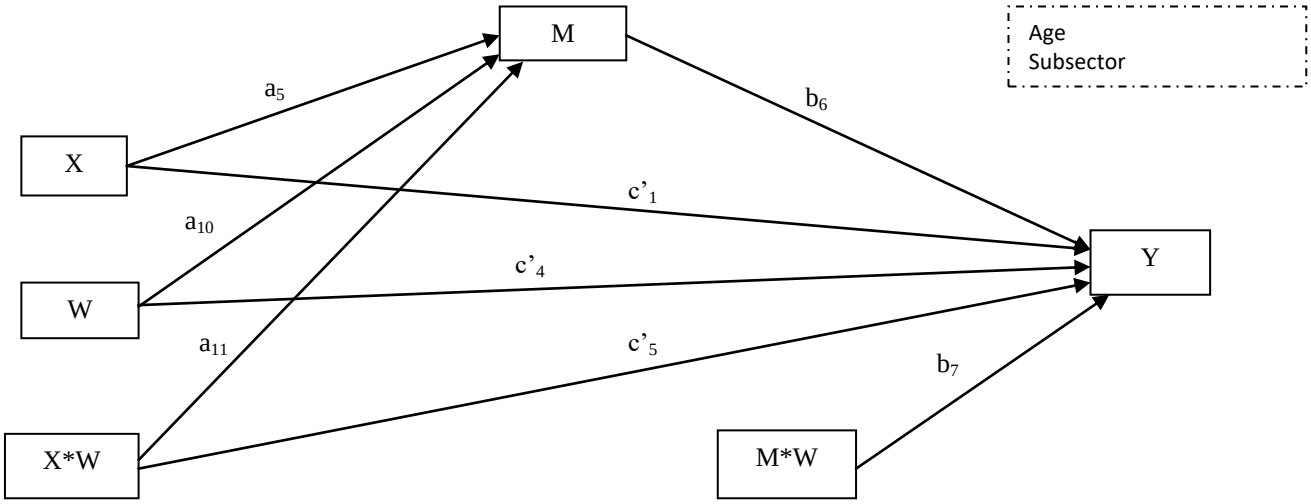
Moderated mediation is determined by significance of the product of interaction between X and W on M ($a_5$+$a_{10}$W in) and between M and W on Y ($b_6$+$b_7$W).

Where: a1 = Coefficient of Entrepreneurial Orientation; a3 = Coefficient of interaction between Entrepreneurial Orientation and Environmental Factors in the mediation model; $b_1$ = Coefficient of Firm Strategic Capabilities $b_2$ = Coefficient of Firm Strategic Capabilities interacted with Environmental Factors

**W** will be the levels of moderator

Where W= 1 SD, 0, -1SD

The following equations were considered for hypotheses $H_{05}$, $H_{06}$, $H_{07}$ and $H_{08}$, based on the Baron and Kenny (1986), and Hayes (2013). As illustrated in figure 2, this enabled testing of the moderating effect of EF on all three paths concurrently.




Conditional indirect effect of *X* on *Y* through y = ($a_5$+$a_{10}$W) ($b_6$+$b_7$W)
Conditional direct effect of *X* on *Y* = $c'_1$ + $c'_5$W
Figure 2: Hayes Model 59
Source: Hayes (2013)

The conditional indirect effects were computed as the outcome of regression weights that are unstandardized for the route from the factor (EO) to the intervening variable (FSC), and for the route from the intervening variable (FSC) to the dependent variable (Growth). That is, for different level EF(M), the co-efficient for Path a and Path b were separately calculated. They were computed in this study, at three levels of EF: 'mean' EF (mean); low' EF (mean subtract one standard deviation); and 'high' (mean, add one standard deviation).

**RESULTS**

A total of eight hypotheses were set in their null form informed by the corresponding specific objectives of the study. To achieve this, various regression analyses were performed including simple linear, multiple linear, mediation, moderation and a moderated mediation. To aid in this analysis, the Process Macro for SPSS by Hayes (2013) was plugged in and used to run the various models.

**Effect of Entrepreneurial Orientation on MSME Growth**

The first hypothesis of the study stated that entrepreneurial orientation does not have a significant effect on MSME growth ($H_{01}$). Adopting a unidimensional analysis, the variable, entrepreneurial orientation, was computed by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addition of the three identified sub-scales, including innovativeness, risk propensity and proactiveness. To test the hypothesis, a simple linear regression analysis was performed in two (2) blocks and therefore 2 models. The first model included a regression of the control variables, Age and Sub-sector against MSME growth. In the second model, the independent variable, EO was introduced. The results are summarized in Table 1.

**Table 1: Test Results for $H_{01}$**

| **Variables** | **Model 1** (Age, Sub-sector) | **Model 2** (Age, Sub-sector, EO) |
|---|---|---|
| Constant | 18.847 (.000) | 14.302 (.000) |
| **Independent Variables** | | |
| Age | .205 (.000)** | .194 (.001)** |
| Sub-sector | .094 (.093) | .089 (.106) |
| EO | | .139 (.012) * |
| R | .234 | .272 |
| $R^2$ | .055 | .074 |
| Adjusted $R^2$ | .048 | .065 |
| $R^2$ change | .055 | .019 |
| F Statistics | 8.916 (0.000) | 8.185 (0.000) |

Dependent Variable: MSME Growth

Values of Standardized beta coefficients, with standard errors in Parenthesis *P<.05, **P<0.01 (2 tailed test)

Source: Survey Data (2020)

In the regression analysis, Model 1 assessed the relationship between control variables (Age and Sub-sector) and Micro, Small, and Medium Enterprises (MSME) growth. The results indicated a significant linear relationship (R = .234) between the control variables and MSME growth. The R Square value of .055 suggested that 5.5% of the variation in MSME growth could be attributed to Age and Sub-sector, while the remaining 94.5% was influenced by other unaccounted factors. The F value of 8.916, with a P value of .000 (<0.05), affirmed the statistical significance of Model 1. Regression coefficients demonstrated that only Age had a significant effect on MSME growth (β = .205, p = .000<.05), while Sub-sector did not show statistical significance (β = .094, p = .093>.05). In Model 2, which introduced EO while controlling for Age and Sub-sector, a correlation value (R) of .272 indicated a linear relationship between EO and MSME growth. The R Square value of .074 suggested that 7.4% of the variation in MSME growth was accounted for by EO, controlling for Age and Sub-sector. The F value of 8.185, with a P value of .000 (<0.05), confirmed the statistical significance of Model 2. Regression coefficients under Model 2 revealed that, controlling for Age and Sub-sector, EO significantly influenced MSME growth (β = .139, p = .012<.05), leading to the rejection of the null hypothesis ($H_{01}$) stating that EO does not significantly impact MSME growth.

**Effect of Entrepreneurial Orientation on Firm Strategic Capabilities**

The second hypothesis of the study stated that entrepreneurial orientation does not have a significant effect on firm strategic capabilities. Adopting a unidimensional analysis, the variable, firm strategic capabilities, was computed by addition of the two identified sub-scales, including firm resources and market orientation. To test the hypothesis, a simple linear regression analysis was conducted in 2 models. In Model I, the control variables, Age and Sub-sector were regressed against Firm Strategic Capabilities. In the second model, the independent variable, EO was introduced. Table 2 summarizes the results.

**Table 2: Test Results for $H_{02}$**

| **Variables** | **Model 1** (Age, Sub-sector) | **Model 2** (Age, Sub-sector, EO) |
|---|---|---|
| Constant | 48.076 (.000) | 34.646 (.000) |
| **Independent Variables** | | |
| Age | .114 (.045) * | .091 (.097) |
| Sub-sector | .103 (.069) | .094 (.083) |
| EO | | .276 (.000)** |
| R | .160 | .318 |
| $R^2$ | .026 | .101 |
| Adjusted $R^2$ | .019 | .092 |
| $R^2$ change | .026 | .075 |
| F Statistics | 4.081 (0.018) | 11.542 (0.000) |

Dependent Variable: Firm Strategic Capabilities

Values of Standardized beta coefficients, with standard errors in Parenthesis *P<.05, **P<0.01 (2 tailed test)

Source: Survey Data (2020)

The results presented in Table 2 depict the outcomes of the regression analysis for the relationship between control variables (Age and Sub-sector) and Firm Strategic Capabilities in Model 1. A correlation value (R) of .234 indicated a linear relationship between Age, Sub-sector, and Firm Strategic Capabilities. The R Square of .026 suggested that only 2.6% of the variation in firm strategic capabilities could be attributed to Age and Sub-sector, with 97.4% influenced by other unexamined factors. The F value of 4.081, with a P value of .018 (<0.05), signified the statistical significance of Model 1. Regression coefficients revealed that only Age had a significant effect on Firm Strategic Capabilities at a 95% confidence level (β = .114, p = .045<.05), while Sub-sector did not show statistical significance (β = .103, p = .069>.05). In Model 2, which introduced EO while controlling for Age and Sub-sector, a correlation value (R) of .318 indicated a linear relationship between EO and Firm Strategic Capabilities. The R Square of .101 suggested that 10.1% of the variation in Firm Strategic Capabilities was accounted for by EO, controlling for Age and Sub-sector. The F value of 11.542, with a P value of .000 (<0.05), confirmed the statistical significance of Model 2. Regression coefficients under Model 2 further revealed that, controlling for both Age and Sub-sector, EO had a significant effect on Firm Strategic Capabilities at a 95% confidence level (β = .276, p = .000<.05). Consequently, the null hypothesis ($H_{02}$) positing that EO does not significantly influence Firm Strategic Capabilities is rejected.

**Effect of Firm Strategic Capabilities on MSME Growth**

The third hypothesis of the study stated that Firm strategic capabilities do not have a significant effect on MSME Growth ($H_{03}$). Firm strategic capabilities variable was conceptualized as unidimensional and therefore the composite variable was computed with the aid of SPSS. To test this null hypothesis, Model 4 of the Process Macro by Hayes (2013) was also adopted. Findings are presented in Table 3.


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**Table 3: Test Results for $H_{03}$**

| **Variables** | **Model 1** (Age, Sub-sector) | **Model 2** (Age, Sub-sector, FSC) |
|---|---|---|
| Constant | 18.847 (.000) | 14.852 (.000) |
| **Independent Variables** | | |
| Age | .205 (.000)** | .191 (.001) |
| Sub-sector | .094 (.093) | .081 (.146) |
| FSC | | .124 (.026)* |
| R | .234 | .264 |
| $R^2$ | .055 | .070 |
| Adjusted $R^2$ | .048 | .061 |
| $R^2$ change | .055 | .015 |
| F Statistics | 8.916 (0.000) | 7.679 (0.000) |

Dependent Variable: MSME Growth

Values of Standardized beta coefficients, with standard errors in Parenthesis *P<.05, **P<0.01 (2 tailed test)

Source: Survey Data (2020)

The analysis of Model 1 in Table 3 displayed a correlation value (R) of .234, signifying a linear relationship between the control variables, Age and Sub-sector, and MSME growth. The R Square of .055 indicated that only 5.5% of the variation in MSME growth could be explained by Age and Sub-sector, with the remaining 94.5% attributed to unexplored factors. An F value of 8.916, with a P value of .000 (<0.05), demonstrated the statistical significance of the regression model, supporting further inferences. Regression coefficients revealed that, within Model 1, only Age significantly affected MSME growth at a 95% confidence level (β = .205, p = .000<.05), while Sub-sector did not show statistical significance (β = .094, p = .093>.05). Moving to Model 2, a correlation value (R) of .264 indicated a linear relationship between firm strategic capabilities and MSME growth, accounting for Age and Sub-sector. The R Square of .070 suggested that 7.0% of the variation in MSME growth was accounted for by firm strategic capabilities, controlling for Age and Sub-sector, with the residual 93.0% attributed to other factors. An F value of 7.679, with a P value of .000 (<0.05), confirmed the statistical significance of Model 2. Regression coefficients under Model 2 further revealed that, controlling for both Age and Sub-sector, firm strategic capabilities had a significant effect on MSME growth at a 95% confidence level (β = .124, p = .026<.05). Consequently, the null hypothesis ($H_{03}$) stating that firm strategic capabilities do not significantly influence MSME Growth is rejected.

**Entrepreneurial Orientation, Firm Strategic Capabilities and MSME Growth**

The fourth hypothesis of the study stated that firm strategic capabilities do not significantly mediate the association between EO and MSME Growth ($H_{04}$). To test the null hypothesis, a three-step mediation procedure was adopted employing model 4 of the Process Macro by Hayes (2013):

Step 1: The effect of entrepreneurial orientation on firm strategic capabilities indicated as path "$a_5$"

Step 2: The effect of firm strategic capabilities on MSME growth, path "$b_6$"

Step 3: The indirect path between entrepreneurial orientation and MSME growth via firm strategic capabilities ($a_5$*$b_6$)

Covariates (Age and Subsector) were included in the analyses, results of which are summarized on Table 4.

**Table 4: Test Results for $H_{04}$**

| Variables | Model 1 (Outcome: FSC) | Model 2 (Outcome: Growth) |
|---|---|---|
| Constant | 34.6458 (.000)** | 12.1639 (.000)** |
| **Independent Variables** | | |
| EO | .1863 (.000)** | .0516(.047)* |
| Age | .5122 (.097) | .7007(.001)** |
| Sub-sector | .0789 (.083) | .045 (.145) |
| FSC | | .0617(.111) |
| F Statistics | 11.5419 | 6.8089 |
| R | .3179 | .2855 |
| $R^2$ | .1011 | .0815 |
| **Direct effect of X on Y** | | .052 |
| LLCI | | .0007 |
| ULCI | | .1024 |
| **Indirect effect(s) of X on Y** | | .012 |
| LLCI | | -.0020 |
| ULCI | | .0273 |

Dependent Variable: MSME Growth

Values of Standardized beta coefficients, with standard errors in Parenthesis *P<.05, **P<0.01 (2 tailed test)

Source: Survey Data (2020)

The study's Model 1 exhibited a correlation value (R) of .3179, indicating a linear relationship between entrepreneurial orientation and firm strategic capabilities. The R Square value of .1011 suggested that 10.1% of the variation in firm strategic capabilities is accounted for by the direct effect of entrepreneurial orientation and the mediating effect of firm strategic capabilities, with the residual 89.9% attributed to other unexplored factors. The P value of .0000 at a 95% confidence level confirmed the statistical significance of the regression model. Furthermore, Model 1 revealed that entrepreneurial orientation has a significant effect on MSME growth at a 95% confidence level (β = .1863, p = .000<.05). However, the direct effects of the control variables, Age and Sub-sector, on firm strategic capabilities were not significant at a 95% confidence level (β = .5122, p = .097>.05). In Model 2, the direct effect of entrepreneurial orientation on MSME growth was statistically significant (β = .0516, p = .047<.05), controlling for Age (β = .7007, p = .001<.05) and Sub-sector (β = .045, p = .145>.05). The mediating variable, firm strategic capabilities, did not show statistical significance (β = .0617, p = .111>.05), with both the lower limit (-.0020) and the upper limit (.0273) including zero (0). Therefore, the study fails to reject the fourth null hypothesis, stating that firm strategic capabilities do not significantly mediate the association between entrepreneurial orientation and MSME growth ($H_{04}$).

**Entrepreneurial Orientation, Environmental Factors and Firm Strategic Capabilities**

The fifth hypothesis of the study stated that environmental factors do not significantly moderate the relationship between entrepreneurial orientation and firm strategic capabilities ($H_{05}$). Model 59 based on both Baron and Kenny (1986) and Hayes (2013) were adopted to test the null hypotheses. Results are as tabulated in Table 5.


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**Table 5: Test Results for Model 8**

| Variables | Model 1 ($H_{05a}$) |
|---|---|
| Constant | 11.5055 (.2011) |
| **Independent Variables** | |
| Entrepreneurial Orientation | -.0568 (.636) |
| Environmental Factors | .6373 (.000) ** |
| Int_1 | .0014 (.493) |
| Age | .0995(.295) |
| Subsect | .0144(.303) |
| F Statistics | 667.4872 |
| R | .9571 |
| $R^2$ | .9160 |
| $R^2$ Change | .0001 (.493) |
| **x*w** | |
| LLCI | -.0026 |
| ULCI | .0054 |

Dependent Variable: Firm Strategic Capabilities

Values of Standardized beta coefficients, with standard errors in Parenthesis *P<.05, **P<0.01 (2 tailed test)

Source: Survey Data (2020)

In the established model, a robust correlation value (R) of .9571 indicated a strong, linear relationship among entrepreneurial orientation, environmental factors, and firm strategic capabilities. The R Square value of .9160 suggested that 91.6% of the variation in firm strategic capabilities is accounted for by the direct effect of entrepreneurial orientation and its interaction with environmental factors, while the residual 8.4% is attributed to unexplored factors. Despite a non-significant R square change of .0001, the overall model exhibited statistical significance with a P value of .0000 at a 95% confidence level. However, the analysis revealed that entrepreneurial orientation does not have a significant direct effect on firm strategic capabilities (β = -.0568, p = .636>.05). Conversely, the direct effect of environmental factors on firm strategic capabilities was significant (β = .6373, p = .000<.05). Controlling for Age (β = .0995, p = .295>.05) and Sub-sector (β = .0144, p = .303>.05), the interaction between entrepreneurial orientation and environmental factors was not significant at a 95% confidence level (β = .0014, p=.493>.05), with the lower limit (-.0026) and the upper limit (.0054) crossing zero, indicating no moderation. Therefore, the study fails to reject the null hypothesis that environmental factors do not have a significant moderating effect on the association between entrepreneurial orientation and firm strategic capabilities (H05).

**Entrepreneurial Orientation, Environmental Factors and MSME Growth**

The sixth hypothesis of the study stated that environmental factors do not moderate significantly the relationship between entrepreneurial orientation and MSME growth ($H_{06}$). Further, both Model 59 based on Baron and Kenny (1986) and Hayes (2013) were also adopted to test the null hypotheses.

**Table 6: Test Results for Model 9**

| Variables | Model 1 ($H_{06}$) |
|---|---|
| Constant | 52.5904 (.0081) |
| **Independent Variables** | |
| Entrepreneurial Orientation | -.4885 (.065) |
| Environmental Factors | -.6352 (.059) |
| Int_1 | .0092 (.040)* |
| Age | .7119 (.001)** |
| Subsect | .0431(.161) |
| F Statistics | 6.4522 |
| R | .3088 |
| $R^2$ | .0954 |
| $R^2$ Change | .0125 (.040)* |
| **x*w** | |
| LLCI | .0004 |
| ULCI | .0180 |

Dependent Variable: MSME growth

Values of Standardized beta coefficients, with standard errors in Parenthesis *P<.05, **P<0.01 (2 tailed test)

Source: Survey Data (2020)

As presented in Table 6, the established correlation value (R) in the model was .3088, indicating a linear relationship among entrepreneurial orientation, environmental factors and MSME growth. An R Square value of .0954 was also recorded implying that 9.5% of the variation in MSME growth is accounted for by the direct effect of entrepreneurial orientation, and its interaction with environmental factors, while the residual 90.5% is attributed to factors not of interest to the present regression model. An R square change of .0125 was further established which was significant at 95% confidence level (.040<.05). A P value of .0000 was further established at 95% confidence level implying that the regression model adopted is statistically significant and can be relied upon to make further inferences.

The model further revealed that entrepreneurial orientation does not have a significant direct effect on MSME growth at 95% confidence level (β=-.4885, p=.065>.05). The direct effect of environmental factors on MSME growth was also not significant at 95% confidence level (β=-.6352, p =.059>.05). It was further established that controlling for Age (β = .7119, p = .001<.05) and Sub-sector (β=.0431, p=.161>.05) the interaction between entrepreneurial orientation and environmental factors was significant at 95% confidence level (β =.0092, p=.040<.05) with both the lower limit (.0004) and the upper limit (.0180) above zero (0), indicating moderation. The study therefore rejects the null hypothesis that environmental factors do not moderate significantly, the association between entrepreneurial orientation and MSME growth ($H_{06}$).

**Firm Strategic Capabilities, Environmental Factors and MSME Growth**

This section presents the test results for the seventh hypothesis of the study which states that environmental factors do not significantly moderate the relationship between firm strategic capabilities and MSME Growth ($H_{07}$). Model 59 based on Baron and Kenny (1986) and Hayes (2013) were also adopted to test this null hypothesis. Results are as depicted in Table 7.

**Table 7: Test Results for Model 10**

| Variables | Model ($H_{07}$) |
|---|---|
| Constant | 23.6057 (.1791) |
| **Independent Variables** | |
| Firm Strategic Capabilities | -.1570 (.6654) |
| Environmental Factors | -.0889 (.7810) |
| Int_1 | .0029 (.6240) |
| Age | .7265 (.0006)** |
| Subsect | .0474 (.1306) |
| F Statistics | 4.7088 |
| R | .2673 |
| $R^2$ | .0714 |
| $R^2$ Change | .0007 (.6240) |
| **x*w** | |
| LLCI | -.0087 |
| ULCI | .0145 |

Dependent Variable: MSME growth

Values of Standardized beta coefficients, with standard errors in Parenthesis *P<.05, **P<0.01 (2 tailed test)

Source: Survey Data (2020)

In Table 7, the established correlation value (R) in the model was .2673, signifying a linear relationship among firm strategic capabilities, environmental factors, and MSME growth. The recorded R Square value of .0714 suggested that 7.1% of the variation in MSME growth is explained by the direct effect of firm strategic capabilities and its interaction with environmental factors, while the residual 92.9% is attributed to unexplored factors. The R square change of .0007, however, was not significant at a 95% confidence level (.6240>.05). With a P value of .0000, the regression model demonstrated statistical significance and reliability for further inferences. Nevertheless, the analysis revealed that firm strategic capabilities do not have a significant direct effect on MSME growth (β=-.1570, p=.6654>.05), and the direct effect of environmental factors on MSME growth was also not significant (β=--.0889, p =.7810>.05). Furthermore, controlling for Age (β=.7265, p=.001<.05) and Sub-sector (β=.0474, p=.1306>.05), the interaction between firm strategic capabilities and environmental factors was not significant at a 95% confidence level (β =.0029, p=.6240>.05), with both the lower limit (-.0087) and the upper limit (.0145) including zero (0), indicating no moderation. Consequently, the study fails to reject the null hypothesis that environmental factors do not have a significant moderating effect on the association between firm strategic capabilities and MSME growth ($H_{06}$).

**Entrepreneurial Orientation, Firm Strategic Capabilities, MSME growth and Environmental Factors**

The eighth hypothesis of the study stated that environmental factors do not moderate the indirect relationship between entrepreneurial orientation and MSME growth via firm strategic capabilities ($H_{08}$). Model 59 based on Baron and Kenny (1986) and Hayes (2013) were further adopted to test the null hypothesis. Table 8 presents the test results.

**Table 8: Test Results for Model 11**

| Variables | Model 1 (First Interaction) | Model 2 (Second Interaction) |
|---|---|---|
| Constant | 11.5055 (.2011) | 49.2516 (.0309) |
| **Independent Variables** | | |
| Entrepreneurial Orientation | (.6363) | |
| Environmental Factors | .6373 (.0000)** | |
| Int_1 | .0014 (.4933) | |
| Age | .0995(.2946) | |
| Subsect | .0144(.3033) | |
| Entrepreneurial Orientation | | -.5231 (.0646) |
| Firm Strategic Capabilities | | .0880 (.8166) |
| Environmental Factors | | -.5494 (.1680) |
| Age | | .7160(.0007)** |
| Subsect | | .0423(.1746) |
| Int_1 | | .0098 (.041)* |
| Int_2 | | -.0021 (.7384) |
| F Statistics | 667.4872 | 4.6061 |
| R | .9571 | .3097 |
| $R^2$ | .9160 | .0959 |
| $R^2$ Change | .0125 (.0415)* | .0003 (.7384) |
| **Int_1** | | |
| LLCI | | .0004 |
| ULCI | | .0192 |
| **Int_2** | | |
| LLCI | | -.0143 |
| ULCI | | .0102 |

Dependent Variable: Firm Strategic Capabilities (First Interaction)

Dependent Variable: MSME Growth (Second Interaction)

Values of Standardized beta coefficients, with standard errors in Parenthesis *P<.05, **P<0.01 (2 tailed test)

In Table 8, the correlation value (R) of .9571 indicates a robust linear association in Model 1 among entrepreneurial orientation (EO), environmental factors, and firm strategic capabilities. The recorded R Square value of .9160 suggests that 91.6% of the variation in firm strategic capabilities is elucidated by the direct impact of EO and the moderating effect of environmental factors, with the remaining 8.4% attributed to unexplored factors. The significant R square change of .0125 at a 95% confidence level (.0415<.05) and a P value of .0000 affirm the statistical significance and reliability of the adopted regression model for further inferences. Model 1 further reveals that entrepreneurial orientation does not have a significant direct effect on firm strategic capabilities at a 95% confidence level (β = -.0568, p =.6363>.05). Conversely, the direct effect of environmental factors on firm strategic capabilities is significant at a 95% confidence level (β=.6373, p=.000<.05). However, the first interaction between entrepreneurial orientation and environmental factors is not significant at a 95% confidence level (β=.0014, p=.4933>.05). The control variables, Age (β=.0995, p=.295>.05) and Sub-sector (β=.0144, p=.303>.05), also do not exhibit significance at a 95% confidence level. The conditional effect of the focal predictor, entrepreneurial orientation, on firm strategic capabilities is visually represented in Figure 3.


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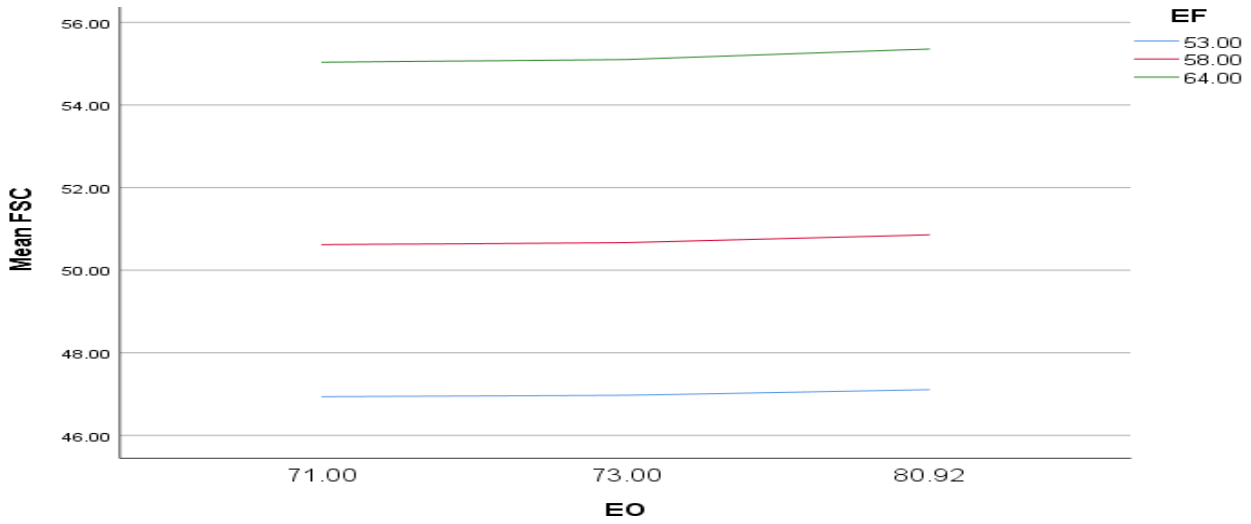


**Figure 3: Conditional Effect of Entrepreneurial Orientation on Firm Strategic Capabilities**

The result presented in Figure 3 reveals that whereas entrepreneurial orientation exerts an effect on firm strategic capabilities at all levels of environmental factors, the effect is more pronounced when environmental factors are perceived more positively, as opposed to when environmental factors are perceived negatively. As such, a favorable and supportive policy and competitive environment enhances the relationship between entrepreneurial orientation and firm strategic capabilities. The effect is however not significant, as indicated by an only slightly steeper slope in the upper line graph, compared to the lower line graphs.

As also presented in Table 8, the study then tested whether environmental factors significantly moderate the indirect effect of entrepreneurial orientation on MSME growth via firm strategic capabilities in Model 2. The established a correlation value (R) of .3097 indicating a linear relationship between entrepreneurial orientation, firm strategic capabilities, environmental factors and MSME Growth. An R Square value of .0959 was also recorded implying that 9.6% of the variation in MSME Growth is accounted for by the direct effect of entrepreneurial orientation, a mediating effect of firm strategic capabilities and a moderating effect of environmental factors, while the residual 90.4% is attributed to factors not of interest to the present regression model. An R square change of .0003 was further established in the second moderation which was also not significant at 95% confidence level (P=.7384>.05). A P value of .0000 was further established at 95% confidence level implying that the regression model adopted is statistically significant and can be relied upon to make further inferences.

The regression Model 2 further revealed that entrepreneurial orientation does not have a significant direct effect on MSME Growth at 95% confidence level (β = -.5231, p=.0646>.05). The direct effect of firm strategic capabilities on MSME growth was also not significant at 95% confidence level (β=.0880, p=.8166>.05). Environmental factors on MSME Growth was further not significant at 95% confidence level (β=.7160, p=.001<.05).

It was further established that controlling for Age and Sub-sector, the first interaction between entrepreneurial orientation and environmental factors was significant at 95% confidence level (β=.0098, P=.041<.05) with the lower limit (.0004) and the upper limit (.0192) both greater than zero (0) indicating moderation. The second interaction between the firm strategic capabilities (mediator) and environmental factors was however not significant at 95% confidence level (β=-.0021, P=.7384>.05) with the lower limit (-.0143) and the upper limit (.0102) including zero (0) indicating no

moderated mediation. The study thus fails to reject the null hypothesis that the indirect association between EO and MSME growth via firm strategic capabilities is not moderated by environmental factors ($H_{08}$). The conditional effect of the focal predictor, entrepreneurial orientation on MSME growth at values of the moderator, environmental factors, was visualized as presented in Figure 4.

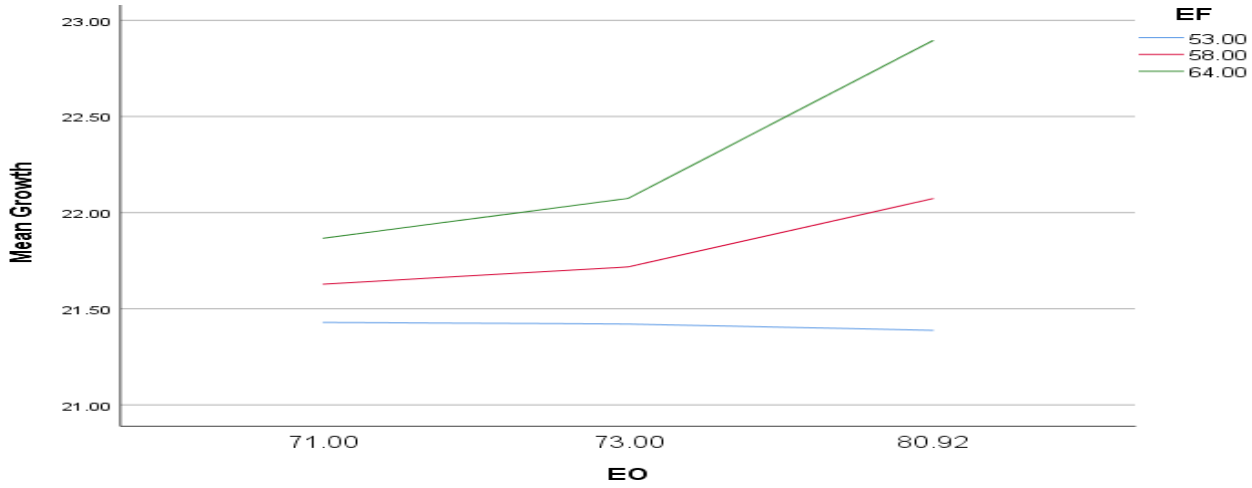


**Figure 4: Conditional Effect of Entrepreneurial Orientation on MSME growth**

The result presented in Figure 4 reveals that whereas entrepreneurial orientation exerts an effect on MSME growth at all levels of environmental factors, the effect is more pronounced when environmental factors are perceived more positively, as opposed to when environmental factors are perceived negatively. As such, a favorable and supportive policy and competitive environment enhances the relationship between entrepreneurial orientation and MSME growth. The effect is statistically significant, as indicated by a notably steeper slope in the upper line graph, compared to the lower line graphs. The conditional effect of the focal predictor, firm strategic capabilities on MSME growth at values of the moderator, environmental factors, was further visualized as presented in Figure 5.

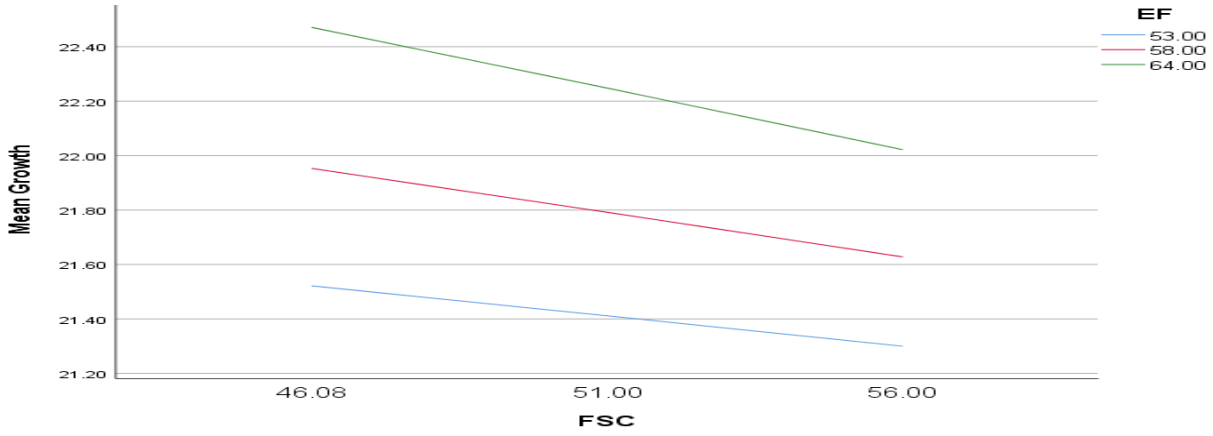


**Figure 5: Conditional Effect of Firm Strategic Capabilities on MSME growth**

The result presented in Figure 5 reveals a negative association between firm strategic capabilities and MSME growth at values of the moderator, environmental factors. Whereas firm strategic capabilities exert an effect on MSME growth at all levels of environmental factors, the effect is not

distinct at different perceptions of environmental factors. This was however not statistically significant as indicated by the largely negligible gradient difference in all the three (3) line graphs ($\beta$=.0029 > 0.05). The negative slopes can be attributed to the negatively perceived environmental factors (particularly policy environment) worsening the effect of the already limited FSC on MSME growth.

**Discussion**

It was hypothesized that environmental factors do not moderate the indirect relationship between entrepreneurial orientation and MSME growth via firm strategic capabilities ($H_{08}$). Findings provide evidence to fail to reject the hypothesis (β=-.0021, P=.7384>.05). It is implied that the high intensity at which MSMEs' owners/managers innovate negates the combined effect of adverse environmental factors and limited firm strategic capabilities leading to growth. This can be attributed to the ability of innovative MSME owners/managers to navigate challenging policy and business environmental conditions as well as limited strategic capabilities by devising innovative production, process, operational and marketing strategies that result in improvement in production process, efficiency in production process and operations as well as effective marketing practices leading to MSME growth. The finding is in contrast with Muthuvelayutham and Jeyakodeeswari (2014) who established in their study a significant association between performance and strategic orientations under a new context significantly moderated by environmental munificence. This is in contrast with Kraus et al. (2011) whose study found that a company whereby the extent of EO is not aligned with the level of environmental turbulence and market intelligence risks producing business performance that is inferior, especially in the context of risk-taking dimension.

**CONCLUSION**

The study further makes an eminent contribution to the extant body of knowledge internationally, regionally and in the Kenyan context concluding that environmental factors do not moderate the indirect relationship between entrepreneurial orientation and MSME growth via firm strategic capabilities. To this end, the study particularly provides evidence to show that the high intensity at which MSMEs' owners/managers innovate, take risks and are proactive negates the combined effect of adverse environmental factors and limited firm strategic capabilities leading to growth. The study attributes this to the ability of innovative, risk taking and proactive MSME owners/managers to navigate challenging policy and business environmental conditions as well as limited strategic capabilities by devising innovative production, process, operational and marketing strategies that result in improvement in production process, efficiency in production process and operations as well as effective marketing practices leading to MSME growth. Against this backdrop, the study findings invalidate the proposed conceptual framework with regard to the moderating effect of environmental factors on the indirect relationship between entrepreneurial orientation and MSME growth via firm strategic capabilities.

In conclusion, the study puts forth the thesis the high levels of entrepreneurial orientation among MSME owners/managers negates the combined effect of adverse environmental factors and limited firm strategic capabilities resulting in MSME growth. The is established from both the strong, positive and significant direct effect of EO on MSME growth (β=.139, p<.05); and the weak, negative and non-significant moderated mediating effect of EF on the relationship between EO and growth via FSC (β=-.002, P>.05). The study attributes this to the ability of entrepreneurially oriented MSME owners/managers to navigate challenging environmental conditions and limited strategic capabilities by devising innovative production and operational practices, proactively seeking for opportunities and markets and taking risks by trying


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out new products, processes and markets hence growth.

## RECOMMENDATIONS

The study's implications for theory suggest that the findings align with the contingency fit view theory, Dynamic Capability Theory (DCT), Economic Theory of Entrepreneurship, and the life cycle theory. The confirmation of predictions from the contingency fit view theory highlights the interaction between environmental factors and owner/manager entrepreneurial orientation in influencing the growth of manufacturing sector MSMEs. DCT's assertions are validated as firm strategic capabilities significantly determine MSME growth, emphasizing the importance of resource capabilities. The economic theory of entrepreneurship is supported, indicating that government regulations and policies interact with entrepreneurial orientation to influence MSME growth. Additionally, the life cycle theory is affirmed, highlighting the moderating role of external environmental factors in the relationship between owner/manager entrepreneurial orientation and MSME growth.

In terms of policy implications, the study recommends that the government formulates supportive policies to encourage entrepreneurial orientation and strategic capacity building among manufacturing MSMEs. This includes providing training, access to credit, common equipment facilities, business incubation centers, technology transfer, and support for digital transformation technologies. A transparent and effective regulatory setting is crucial for MSME development, and the study suggests reducing the regulatory burden to enhance competitiveness and productivity. The creation of a dedicated fund for lending to manufacturing sector MSMEs is recommended to stimulate local manufacturing, export, and overall economic growth. Additionally, the study calls for the enhancement of business infrastructure and ecosystems through public-private partnerships and business education programs to support MSME growth in the manufacturing sector.

Entrepreneurship practice implications highlight the positive and significant influence of entrepreneurial orientation on MSME growth. MSMEs in the manufacturing sector are encouraged to be innovative, take moderate risks, and stay proactive to foster growth. Practical recommendations include regularly introducing improvements to products and production processes, exploring new markets through online platforms, and anticipating future opportunities. MSME owners/managers are advised to develop and implement risk-taking and proactive strategies to enhance competitiveness, considering innovations in organizational methods, processes, products, and marketing.

For research implications, the study, grounded in the Positivist philosophy, validates the use of quantitative methodologies, closed-ended questionnaires, and statistical hypothesis tests. The mix of cross-sectional survey and explanatory research designs is deemed appropriate for data collection and achieving research objectives. The study further validates the use of Hayes' regression models for testing direct relationships, mediations, moderation, and moderated mediations within SPSS, highlighting their versatility in statistical operations and contribution to literature.

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