Innovations

Exploring the Link between Entrepreneurial Orientation and Firm Performance among Manufacturing Enterprises in Southeast Nigeria

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Abstract

This study aimed at entrepreneurial orientation and the performance of manufacturing firms in South-East, Nigeria. In this study, the survey research design was used. The study used of well-structured questionnaires. The sample size of the study was 363. A multi-stage sampling technique was used to choose the samples in stages. Internal consistency was measured by calculating a statistic known as Cronbach's coefficient alpha. The Kaiser-Meyer-Olkin measure was used to assess the sampling adequacy. Descriptive statistics was employed to analyze the responses obtained from the survey instrument. The study employed a Structural Equation Model (SEM) path modeling approach to test the formulated hypotheses. Finding revealed that innovation has positive effect on profitability, and that a significant positive relationship exists between proactiveness and sales volume. Furthermore, finding revealed a significant positive relationship between risk-taking and market shares of manufacturing firms in South-East Nigeria. These findings shed light on the crucial relationships between innovation and profitability, proactiveness and sales volume, risk-taking and market shares among others. The study recommended that manufacturing firms in South-East Nigeria should consider encourage and support a culture of innovation within the organization, encourage employees to explore innovative solutions and provide them with the necessary resources and support to implement their ideas, allocate resources to research and development activities to promote innovation, foster collaborations and partnerships with external entities and continuously monitor and evaluate the impact of entrepreneurial innovativeness on profitability among others.

Keywords: *Entrepreneurial Orientation, Performance, Entrepreneurial Innovativeness, Profitability, Proactiveness, Sales Volume.*

Introduction

Entrepreneurial orientation (EO) refers to the strategic decisions, processes, methods, and practices employed by organizations to improve the value of their products or services. It involves meeting the needs, preferences, and demands of customers in exchange for enhanced business performance, including increased sales and profits. Entrepreneurship is widely recognized as a primary driver of productivity and growth for firms (Ambad&Wahab, 2016), contributing significantly to economic benefits (Van Trang, Do, & Luong, 2019). Extensive conceptual and empirical evidence supports the notion that entrepreneurial activities have a positive impact on enterprise performance, particularly in the manufacturing sector (Wales,Covin, &Monsen, 2020). At the heart of scholarly research, EO has emerged

as a crucial concept, representing the collective entrepreneurial endeavors at the organizational level (Szerb& Trumbull, 2018; Rigtering& Behrens, 2021; Ambad&Wahab, 2016).

The strategic concept of EO has emerged from the broader concept of entrepreneurship, gaining recognition among scholars in the fields of entrepreneurship and strategic management. The foundations of EO can be traced back to the strategic choice perspective on strategy (Lumpkin and Dess, 1996). It emphasizes that the success of a corporation is not solely determined by the external environment but is also influenced by strategic decision-making. In this context, EO aims to identify new economic opportunities for organizations (Dess& Lumpkin, 2015), reevaluate their strategies and operational processes (Eurydice, 2016), and enhance the overall economic performance of the firm. The objective is to ensure that organizations effectively adapt to their surroundings, especially in today's competitive and dynamic business landscape (Tseng & Tseng, 2019; Dess& Lumpkin, 2015). Successfully navigating the complexities of the business environment requires the firm's engagement in product and service innovation, exploration of new initiatives and markets, and meeting customer expectations ahead of competitors (Eurydice, 2016). Thus, a firm's EO refers to its inclination to act independently, foster innovation, take risks, and respond proactively and assertively to outperform competitors in the marketplace and enhance firm performance (Lumpkin, 1996; Ambad&Wahab, 2016).

The global manufacturing sector has played a pivotal role in driving production, innovation, globalization, and marketing activities. It serves as a significant source of employment in developed economies and contributes to their overall economic outlook. For instance, in 2022, Germany's manufacturing sector contributed approximately 18.17% to the country's gross domestic product (GDP), while China's manufacturing sector accounted for 40.7%, the United Kingdom for 11%, and South Africa for 13.01% (World Bank report, 2022). However, Nigeria's manufacturing sector presents a worrisome picture. Over the years, its contribution to the country's GDP has remained relatively low, ranging from 10.00% to 13.00% from 2002 to 2022 (NBS, 2022). Moreover, the sector generates less than 20% of employment in the country, in stark contrast to emerging economies like India and China, where it accounts for 55% and 65% of total employment, respectively (NBS, 2022).

Nigeria's manufacturing industry still heavily relies on conventional methods of operation, lagging behind recent advances in information systems, business practices, engineering techniques, and manufacturing science. These advancements enable companies to produce superior products more efficiently and at reduced costs, posing a challenge for underdeveloped nations to compete in quality manufacturing. Additionally, Nigeria faces the issue of a strong preference for foreign goods over locally manufactured products, despite government support programs aimed at promoting domestic patronage, such as the industrialization strategy of 1970-74, the import substitution strategy of 1987, and the Buy Nigeria concept of 2013. This low patronage hampers the growth of the sector, as Nigerians continue to favor foreign-made goods. In this context, the potential impact of entrepreneurial orientation on improving the performance of Nigeria's manufacturing sector becomes a thought-provoking question.

Objectives of the Study

The broad objective of the study is to ascertain the influence of entrepreneurial orientation on the performance of manufacturing firms in South-East, Nigeria. However, the specific objectives were to:

- ascertain the extent to which entrepreneurial innovativeness affect profitability of manufacturing firms in South-East, Nigeria.
- determine the extent to which entrepreneurial proactiveness influence the sales volume of manufacturing firms in South-East, Nigeria.
- ascertain the extent to which entrepreneurial risk taking effect the market shares of manufacturing firm South-East Nigeria.
- assess the extent to which entrepreneurial autonomy affects resource utilization of manufacturing firms in South-East, Nigeria.

- establish the extent to which entrepreneurial competitive aggressiveness affects operating cash flow of manufacturing firms in South-East, Nigeria.

Review of Related Literature

Conceptual Review

Entrepreneurial orientation (EO) has gained significant attention in the field of entrepreneurship over time. The concept of entrepreneurial orientation is rooted in the broader concept of entrepreneurship itself (Schrage, 2017). Essentially, it refers to how an organization applies entrepreneurial principles and practices across all areas of its operations. According to Moige, Mukulu, and Orwa (2016), entrepreneurial orientation, also referred to as organizational entrepreneurship or entrepreneurship activity, involves the generation, development, and implementation of new ideas and behaviors within a company.

Entrepreneurial orientation (EO) reflects the inclination of a firm and its managers/employees to engage in entrepreneurial practices (Covin et al., 2020). EO encompasses the methods, practices, and decision-making styles employed by managers to embrace entrepreneurial behaviors (Lumpkin &Dess, 1996). The concept of EO originated from the research of Covin and Slevin (1989), who distinguished between EO at the individual and organizational levels. They proposed that individual level EO exists when managers actively define and formulate policies, goals, competitive plans, and organizational strategies aligned with entrepreneurial approaches and strategies. Individual level EO is accurately described as "a propensity exhibited by individual employees within an organization to engage in innovative, proactive, and risk-taking behaviors in the workplace" (Covin et al., 2020). This definition implies that managers and employees who display these behaviors are more likely to thrive as entrepreneurial individuals compared to those who do not.

According to Schrage (2017), entrepreneurial orientation encompasses a company's collective efforts in innovation, renewal, and venturing. Organizations that exhibit entrepreneurial orientation are typically characterized by three key attributes: innovation, risk-taking, and proactiveness (Covin&Slevin, 1991). EO is the active pursuit of new ideas and opportunities, whether within established companies or for the purpose of enhancing organizational efficiency and gaining a competitive advantage. It can also involve strategic rejuvenation of existing businesses.

Dimensions of Entrepreneurial Orientation

Researchers have approached the conceptualization and measurement of entrepreneurial orientation in different ways, depending on their specific research environments and areas of interest. Nevertheless, existing literature indicates that innovation, risk-taking, proactiveness, autonomy, and competitive aggressiveness are the dimensions most frequently utilized to capture the essence of entrepreneurial orientation (Covin& Miller, 2014).

i. **Innovation:** The term "innovation" originates from the Latin word "innovare," which means to create something new. According to Tseng and Tseng (2019), innovation refers to an interactive process where a company gains knowledge through its own experiences in designing, developing, producing, and marketing new products. It continuously learns from its interactions with various external sources, such as customers, suppliers, and other organizations like technological institutes and consultants. Innovation relates to a company's capacity to conceive and bring to market products and services, spanning the entire process from conceptualization to realization. Innovativeness has emerged as a key factor used to characterize the nature and outcomes of entrepreneurial behavior.

ii. **Proactiveness:** According to Lumpkin and Dess (2001), being proactive signifies a forward-looking approach to capitalizing on market opportunities. Kokemuller (2017) described a proactive organization as one that prioritizes future-oriented strategic planning rather than simply reacting to the actions of other firms. In this regard, a proactive company must

consistently adopt a forward-thinking mindset and possess the ability to anticipate the future actions of its competitors. It should take proactive steps to ensure that it maintains a competitive edge and stays ahead of others in the industry.

iii. **Risk Taking:** Numerous scholars have made efforts to define risk-taking within the field of entrepreneurship (Adømako et al., 2019). Risk-taking involves the process of making decisions and implementing them without considering the resources currently available or having complete knowledge of potential outcomes. It is widely acknowledged that a crucial individual characteristic necessary to support entrepreneurial orientation is the willingness to take calculated risks. Risk propensity can be understood as the general inclination of entrepreneurs to engage in more or less risky behavior and how they evaluate the trade-off between risk and potential return (Covin& Wales, 2018).

iv. **Competitive Aggressiveness:** It refers to the ability of firms to challenge and match their competitors especially with regards to newly entering an industry/market or improving their market position. It is the unstinting nature of a firm's competitive strategy which aims to outwit competitors in order to gain more share of the market (Kozubiková, Sopková, Krajik&Tyll, 2017).

v. **Entrepreneurial Autonomy**: It refers to the degree of independence and decision-making authority that an entrepreneur possesses in running their business or pursuing entrepreneurial activities. It reflects the level of freedom and control an entrepreneur has over strategic decisions, resource allocation, and the overall direction of their venture.

Performance of Manufacturing Firms

The concept of performance has generated a range of research and debates. Cascio (2015) provided a definition of performance as the achievement of predetermined goals and objectives within a specified time frame. Similarly, Al-Tit (2017) described performance as the overall outcome that measures the degree to which expected goals are attained within an organization over a specific period. In the manufacturing sector, performance is influenced by various factors. According to Al-Tit (2017), some of these factors include enterprise risk management, organizational structure, leadership style, innovation, and management practices. As a result, it becomes challenging to establish a universally agreed-upon method for measuring performance, leading to ongoing research in the behavioral and social sciences literature.

Dimensions of Performance

i. **Profitability:** In measuring profit, studies have adopted an objective approach and some have adopted a subjective approach (Abata&Migiro, 2016). The objective approach measures profit using indicators such as return on assets, return on investment, return on equity and Tobin's Q (Agiomirgianakis, Magoutas&Sfakianakis, 2013). The subjective measure of profit details the managers' perception of the overall index of the organization over a period.

ii. **Sales volume:**Measuring sales volume is one of the easiest measures of performance, as it is actual and specific from the firm's daily activities. Sales volume shows the daily, weekly, monthly, quarterly and annual sales percentage of the business over a period. The sales volume is an indicator of performance, as it shows the extent that the product is accepted in a given market.

iii. **Market shares:** It has been a major discussion in strategic management literature given its relevance in the competitive advantage discussion (Enekwe, Okwo&Ordu, 2013). Market share is the percentage of the market that a business has control over (Margaretha&Supartika, 2016).

ii. Resource Utilisation: The effective utilization of organizations resources is a fundamental performance metrics that show the position of the organization (Parnell &Carraher, 2001). The resources both human and material are expected to contribute optimally towards the growth and expansion of the organization. Resource utilization simply denotes the effective use of organization resources towards achieving the expected organization's goals and objectives.

iii. **Cash flow:** Business needs some level of cash flow to remain operationally. The cash flow is the amount of physical cash that the organization has readily available to undertake activities that would drive the growth of the organization (Bodie, Kane & Marcus, 2016). The cash flow is a performance measure that shows the volume of transaction that the business engages into daily, weekly or annually.

Theoretical and Hypotheses Development

Schumpeterian theory on innovation posits that entrepreneurs possess qualities such as innovation, foresight, and creativity. It asserts that entrepreneurship is driven by the introduction of new products to existing markets or the creation of new markets through innovative approaches. This theory recognizes the significance of innovation in driving entrepreneurship and organizational performance. In this study, the application of this theory supports the hypothesis that innovation plays a significant role in the performance of manufacturing firms. The study by Zemplinerová and Hromádková (2012) established that large firms make use of innovation to drive in increased performance. Tuan, Nhan, Giang, and Ngoc (2016) also revealed that organizational innovations have positive effects on firm performance in supporting firms. These suggest that skills such as innovativeness and critical thinking are essential for improving performance, and organizations can foster these skills through management support and training. Thus, the hypothesis one that:

H_1: Innovativeness significantly affects the profitability of manufacturing firms in South-East Nigeria

The resource-based view emphasizes the role of resources in driving organizational performance. It suggests that lower cost and product differentiation can be key resources that lead to improved performance and competitive advantage. The theory highlights the importance of effectively utilizing internal resources, fostering innovation, and allowing for entrepreneurial autonomy in resource utilization. In different direction, the study of Amarasena, Ajward, and AhasanulHaque (2015) reported that difference in education has a significant effect of autonomy influence on job satisfaction in the academic sector. Saragih (2011) used Structural Equation Modeling (SEM) and found that autonomy can be mediated with self-efficacy and has an indirect effect on work outcomes. The study of Munyoki and K'Obonyo (2015) found that autonomy has a significant effect on competitive strategies among the state owned corporations. Similarly, the study of Majeed (2011) established that there is relationship between competitive aggressiveness and the performance of the SMEs. In addition, the study of Aigboje (2018) found that competitive aggressiveness has significant effect on profitability of hotels. In the context of this study, the resource-based view supports the idea that manufacturing firms can enhance their performance by differentiating their products, optimizing resource utilization, and developing competitive aggressiveness. Hence, the hypotheses that:

H_2: Autonomy affects the resource utilization of manufacturing firms in South-East Nigeria

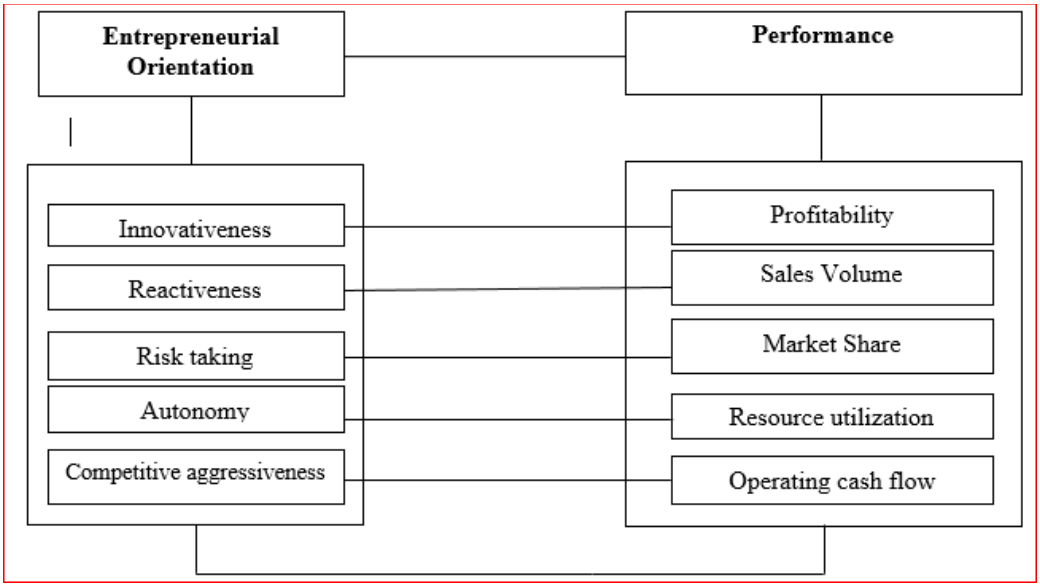
H_3: Competitive aggressiveness has an effect on the operating cash flow of manufacturing firms in South-East Nigeria

Frank Knight's risk-bearing theory highlights the importance of risk-taking in entrepreneurship. It suggests that organizations must be willing to take risks and act in anticipation of future events to achieve success and gain competitive advantage. The theory emphasizes the proactive nature of organizations in understanding market demands and reducing the chances of failed risks. The application of this theory in the study supports the hypothesis that risk-taking and proactive behavior positively influence the performance of manufacturing firms.Bruno (2015) stated that proactiveness is key determinants of firm performance. The study of McDowell (2017) indicated that risk propensity is a cultural phenomenon that does not necessarily have a significant effect on performance. Thus, the development of the hypotheses that:

H_4: Risk taking affects the market shares of manufacturing firms in South-East Nigeria

H_5: Proactiveness affects the sales volume of manufacturing firms in South-East Nigeria.

Figure 1: EO - Performance Model



Source: Authors' Design

Methodology

In this study, the survey research design was used. This will include the use of a standardized research instrument for gathering information and collecting data. The data for this study was collected from primary sources. This involves the use of well-structured questionnaires. The study focused on the managers of selected manufacturing firms in South East geopolitical zone. The accessible populations were 3875 owner/managers of the selected manufacturing firms in the five States. The criteria for selection of the manufacturing firms for the study are registration with the manufacturing association of Nigeria (MAN), 10 years minimum of operations, registered with corporate affairs commission (CAC) and operational facility in the region.The sample was determined using Slovin's 1960 formula (Tejada & Punzalan, 2012). The sample size of the study was363.A multi-stage sampling technique was used to choose the samples in stages. The researcher divided the respondents into groups based on their activities in the first stage. The researcher classified the respondents in the second stage based on common features at the time of the study. The survey in the selected states will be carried out in the third stage, which comprised choosing samples based on cadre, specialization, department and understanding of the subject matter among others.

In the research instrument, the five dimensions of entrepreneurial orientation will be measured using a construct adapted from prior studies (Hughes & Morgan 2007; Hornsby, Kuratko&Zarah 2002).Performance was measured subjectively using the instrument designed by (Gupta and Govindarajan, 1984). The study used content validity. The study also employed construct validity. Internal consistency was measured by calculating a statistic known as Cronbach's coefficient alpha. The Kaiser-Meyer-Olkin measure was used to assess the sampling adequacy. In the quantitative analysis of the study, both descriptive and inferential statistics was utilized. Descriptive statistics such as mean and standard deviation was employed to analyze the responses obtained from the survey instrument. Furthermore, the study employed a Structural Equation Model (SEM) path modeling approach to test the formulated hypotheses.

Analyses and Results

Table 1. Participant profile

Profile	Response	No.	Percent
Gender	Male	222	61.7
	Female	138	38.3
Age Distribution	20—30	111	30.8
	3l—40	148	41.1
	4l—50	57	15.8
	51 years and above	44	12.2
Marital Status	Single	126	35.0
	Married	212	58.9
	Divorced	16	4.4
	Separated	6	1.7
Managerial Cadre	Top	100	27.8
	Middle	186	51.7
	Lower	74	20.6

Source: Field Survey (2023)

Table 1 shows that out of the total respondents, there were 222 males, which represents 61.7% of the total sample. On the other hand, there were 138 females, accounting for 38.3% of the total respondents. Looking at the age distribution of the respondents, we find that the largest group falls within the 20 to 30 age range. There were 111 respondents in this category, making up 30.8% of the total. The next significant group consists of respondents aged 31 to 40, with 148 individuals, representing 41.1% of the total sample. Moving further, the 41 to 50 age range had 57 respondents, accounting for 15.8% of the total. Lastly, there were 44 respondents aged 51 years and above, making up 12.2% of the total sample.

Analyzing the marital status of the respondents, we observe that the majority were married. There were 212 married individuals, comprising 58.9% of the total sample. Following that, the single category had 126 respondents, accounting for 35.0% of the total. In contrast, a smaller proportion consisted of divorced respondents, with 16 individuals making up 4.4% of the total sample. Lastly, there were only 6 respondents who were separated, representing 1.7% of the total.

When considering the managerial cadre of the respondents, we find that the largest group falls into the middle cadre. There were 186 respondents in this category, making up 51.7% of the total sample. The next significant group consists of individuals in the top managerial cadre, with 100 respondents, accounting for 27.8% of the total. Lastly, the lower cadre had 74 respondents, representing 20.6% of the total sample.

Table 2.Reliability and Sampling Adequacy

Codes	Question Items	Mean	STD	CR	AVE	KMO
	Risk Taking					
RSK1	The term 'risk taker' is considered a positive attribute for people in our business area	3.3139	1.17723	.613	.551	.898
RSK2	People in our business area are encouraged to take calculated risks with new ideas	3.0056	1.32471			
RSK3	In our firm, emphasizes both exploration and experimentation for opportunities	3.8333	2.89366			
RSK4	In our firm, a worker with a good idea is often given free time to develop that idea	2.9417	1.28390		.	

	Innovativeness					
INS1	In our firm, there exists a strong emphasis on research and development (R&D) and technological leadership	3.6056	1.09187	.694	.755	
INS2	We actively introduce improvements and innovations in our business	3.5250	1.16324			
INS3	Our business is creative in its methods of operation	3.5167	1.11697			
INS4	Our business seeks out new ways to do things	3.4667	1.50542			
	Pro-activeness					
PTS1	In our firm, we always try to take the initiative in every situation	3.4389	1.41486	.891	.756	
PTS2	We initiate actions to which other organizations respond	3.1417	1.24870			
PTS3	In this firm, we are constantly seeking new opportunities related to present operations	2.7722	1.37154			
PTS4	We are usually the first ones to introduce new brands or products in the market	2.9694	1.32541			
PTS5	We are constantly on the lookout for businesses that can be acquired	3.0389	1.20752			
	Competitive aggressiveness					
CAS1	We often cut prices to increase market share	3.0111	1.29059	.808	.692	
CAS2	We often seek market share position at the expense of cash flow and profitability	2.6083	1.47569			
CAS3	Our business is intensely competitive	3.1556	1.26589			
CAS4	In general, our business takes a bold or aggressive approach when competing	3.4000	1.34185			
CAS5	We try to undo and out-maneuver the competition as best as we can	2.9861	1.31303			
	Autonomy					
AUT1	In our firm, employees are permitted to act and think without interference	2.6389	1.37330	.936	.866	
AUT2	In our firm, employees perform jobs that allow them to make and instigate changes in the way they perform their work tasks	2.6000	1.31670			
AUT3	Employees are given freedom and independence to decide on their own how to go about doing their work	2.7667	1.41264			
AUT4	Employees are given freedom to communicate without interference	2.6639	1.35623			
AUT5	Employees are given authority and responsibility to act alone if they think it to be in the best interests of the business	3.0056	1.35176			
AUT6	Employees have access to all vital information	2.5472	1.39757			
	Advanced Manufacturing Technology					
PRF1	The profitability of our manufacturing firm has been consistently strong in recent years	3.6472	1.05582	.840	.695	
PRF2	The overall financial performance of our	3.7806	1.21236			

	manufacturing firm in the last fiscal year has been impressive					
PRF3	You confident in your manufacturing firm's ability to maintain profitability in the face of changing market conditions and economic uncertainty	3.4750	1.15121			
	Sales Volume					
SVE1	Your company has experienced a consistent increase in sales volume over the past year.	2.9917	1.29599	.887	.728	
SVE2	The sales volume of our company is affected by changes in market conditions and consumer preferences.	3.2528	1.35589			
SVE3	You are confident in your company's ability to sustain a consistent increase in sales volume in the future.	2.9833	1.29699			
	Market Shares					
MKS1	Your company has consistently gained market share in the manufacturing industry over the past year.	3.8139	1.13015	.836	.619	
MKS2	Your company's market share is a key indicator of its overall success in the manufacturing industry	3.7028	1.13589			
MKS3	Your company's market share is a reflection of its ability to understand and respond to the needs of our target customers	3.4944	1.21732			
	Resource Utilization					
RSU1	Your firm efficiently utilizes its production resources (e.g. machinery, raw materials, labor).	2.7861	1.45741	.897	.838	
RSU2	Your manufacturing firm's resource utilization is influenced by its supply chain management practices.	2.6833	1.39228			
RSU3	Your manufacturing firm's inventory management practices are effective in minimizing waste and maximizing resource utilization.	2.8639	1.42435			
	Operating Cash Flow					
OCF1	Your manufacturing firm generates a consistent positive operating cash flow each quarter.	2.9917	1.32784	.953	.799	
OCF2	You are satisfied with the level of transparency and communication regarding your manufacturing firm's operating cash flow	3.1694	1.31274			
OCF3	Your manufacturing firm maintains a positive operating cash flow, compared to other financial metrics such as net income or return on investment.	3.1972	1.33414			

Source: Field Survey (2023)

Table 2 shows that the overall KMO value for the data set was 0.812, indicating that the sample size and the intercorrelations among the variables are adequate for conducting factor analysis. The Risk Taking construct demonstrated acceptable internal consistency reliability (α = 0.819), indicating that the items reliably measure the same construct. The innovativeness construct exhibited high internal consistency reliability (α = 0.875), suggesting that the items consistently measure the same construct. The pro-activeness construct displayed excellent internal consistency reliability (α = 0.921), indicating that the items consistently measure the same construct. The competitive aggressiveness construct demonstrated good internal consistency reliability (α = 0.859), suggesting that the items reliably measure the same construct. The autonomy construct exhibited excellent internal consistency reliability (α = 0.926), indicating that the items consistently measure the same construct. The profitability construct demonstrated good internal consistency reliability (α = 0.861), indicating that the items consistently measure the same construct. The sales volume construct exhibited excellent internal consistency reliability (α = 0.917), suggesting that the items reliably measure the same construct. The market shares construct displayed good internal consistency reliability (α = 0.858), indicating that the items consistently measure the same construct. The resource utilization construct demonstrated high internal consistency reliability (α = 0.899), suggesting that the items consistently measure the same construct. The operating cash flow construct exhibited excellent internal consistency reliability (α = 0.944), indicating that the items reliably measure the same construct.

The constructs in this study generally showed acceptable to excellent levels of internal consistency reliability, indicating that the measurement scales used were reliable for assessing the intended constructs. All the constructs have higher AVE values. Constructs with higher AVE values have a greater impact on the observed variability, indicating their importance in the study context.

Table 3.Covariance of Latent Variables

Latent Variables				**Estimate**	**S.E.**	**C.R.**	**P**
Risk		<-->	Innovation	-.034	.038	-.897	.370
Risk		<-->	Proactiveness	.027	.037	.742	.458
Risk		<-->	Comp	.020	.043	.472	.637
Risk		<-->	Autonomy	.069	.040	1.757	.079
Innovation		<-->	Proactiveness	-.046	.051	-.918	.359
Innovation		<-->	Comp	-.050	.059	-.852	.394
Innovation		<-->	Autonomy	-.032	.053	-.602	.547
Proactiveness		<-->	Comp	.668	.078	8.532	***
Proactiveness		<-->	Autonomy	.042	.052	.819	.413
Autonomy		<-->	Comp	.001	.060	.021	.983

Source: Amos 24

The correlation between risk-taking and innovation is estimated to be -0.034, with a standard error of 0.038. The critical ratio is -0.897, and the associated p-value is 0.370. These results indicate a weak negative relationship between risk and innovation, although the relationship is not statistically significant. On the other hand, the correlation between risk-taking and proactiveness is estimated to be 0.027, with a standard error of 0.037. The critical ratio is 0.742, and the p-value is 0.458. This suggests a positive relationship between risk-taking and proactiveness, but it is not statistically significant. Similarly, the correlation between risk-taking and competitive aggressiveness is estimated to be 0.020, with a standard error of 0.043. The critical ratio is 0.472, and the p-value is 0.637. This indicates a positive relationship between risk and competitive aggressiveness, but it is not statistically significant.

The correlation between risk-taking and autonomy is estimated to be 0.069, with a standard error of 0.040. The critical ratio is 1.757, and the p-value is 0.079. These results indicate a positive relationship

between risk and autonomy, and the relationship is approaching statistical significance. On the other hand, the correlation between innovation and proactiveness is estimated to be -0.046, with a standard error of 0.051. The critical ratio is -0.918, and the p-value is 0.359. This indicates a weak negative relationship between innovation and proactiveness, although the relationship is not statistically significant. The correlation between innovation and competitive aggressiveness is estimated to be -0.050, with a standard error of 0.059. The critical ratio is -0.852, and the p-value is 0.394. This suggests a weak negative relationship between innovation and competitive aggressiveness, but the relationship is not statistically significant.

The estimate (between innovation and autonomy) is -0.032 with an S.E. of 0.053. The C.R. is -0.602, and the p-value is 0.547. This suggests a weak negative relationship between innovation and autonomy, although the relationship is not statistically significant. The estimate (between proactiveness and competitive aggressiveness) is 0.668 with an S.E. of 0.078. The C.R. is 8.532, and the p-value is ***. This indicates a strong positive relationship between proactiveness and competitive aggressiveness, and the relationship is highly statistically significant. The estimate (between proactiveness and autonomy) is 0.042 with an S.E. of 0.052. The C.R. is 0.819, and the p-value is 0.413. This suggests a positive relationship between proactiveness and autonomy, but the relationship is not statistically significant. The estimate (autonomy and competitive aggressiveness) is 0.001 with an S.E. of 0.060. The C.R. is 0.021, and the p-value is 0.983. This indicates a very weak positive relationship between autonomy and competitive aggressiveness, and the relationship is not statistically significant.

The covariances provide insights into the relationships between the latent variables in the model. While some relationships show weak associations, only the relationship between proactiveness and competitive aggressiveness is found to be strong and statistically significant. However, the results show that there is no covariance among other latent variables.

Table 4.Model Fit Summary

	RMR, GFI		**Baseline Comparisons**		Parsimony-Adjusted Measures		RMSEA	Chi-square (df)	P-value
	Default model	**Saturated model**	**Default model**	**Saturated model**	**Default model**	**Saturated model**	**Default model**		
RMR	.067	.000							
GFI	.909	1.000							
AGFI	.888							41.861(35)	.198
PGFI	.741								
NFI			.923	1.000					
RFI			.912						
IFI			.972	1.000					
TLI			.968						
CFI			.972	1.000					
PRATIO					.876	.000			
PNFI					.808	.000			
PCFI					.851	.000			
RMSEA							.038		
LO 90							.031		
HI 90							.045		
PCLOSE							.999		

Source: Amos 24

The RMR is a metric that quantifies the difference between the observed data and how well the model fits that data. A lower RMR value signifies a stronger fit. In the case of the default model, the RMR value of .067 indicates a reasonably adequate fit. The GFI, ranging from 0 to 1, serves as an index for evaluating model fit, with values closer to 1 denoting a better fit. For the default model, the GFI value of .909 suggests a relatively favorable fit. The AGFI is a modified version of the GFI that takes into account the degrees of freedom. With an AGFI value of .888, the default model demonstrates a good fit after considering the degrees of freedom. The PGFI assesses the parsimony of the model, with values closer to 1 suggesting a more concise model. In this case, the PGFI value of .741 indicates that the default model is reasonably parsimonious. The saturated model perfectly reproduces the observed data. Consequently, the RMR is 0, indicating a perfect fit. The GFI is 1.000, reflecting a perfect fit as well. In summary, the default model shows a reasonably good fit based on the RMR, GFI, AGFI, and PGFI indices.

The default model exhibits a relatively good fit based on several fit indices. The NFI value of .923 suggests that the model fits reasonably well, with values closer to 1 indicating better fit. The RFI value of .912, which represents relative fit, also suggests a favorable fit. The IFI value of .972, reflecting incremental fit, indicates a good fit, with values closer to 1 indicating better incremental fit. The TLI value of .968, representing the Tucker-Lewis Index, indicates a high level of fit, with values closer to 1 indicating better fit. Additionally, the CFI value of .972, representing comparative fit, also indicates a good fit, with values closer to 1 indicating better comparative fit. On the other hand, the saturated model, as previously mentioned, perfectly reproduces the observed data. Consequently, all the fit indices, including NFI, IFI, and CFI, have ideal values of 1.000, signifying a perfect fit.

The PRATIO, PNFI, and PCFI are parsimony-adjusted measures used to evaluate model fit and complexity. The PRATIO value of .876 reflects the parsimony ratio, which assesses the trade-off between model fit and complexity. A higher PRATIO indicates a more parsimonious model, striking a better balance between fit and simplicity. The PNFI value of .808 represents the parsimony normed fit index, which considers both fit and complexity. It provides an indication of how well the model fits the data while accounting for its complexity. Similarly, the PCFI value of .851, the parsimony comparative fit index, takes into account the model's complexity when evaluating its fit. In the case of the saturated model, which perfectly reproduces the observed data, the PRATIO, PNFI, and PCFI all have values of .000. This indicates that parsimony-adjusted measures are not applicable or meaningful for the saturated model since it already achieves a perfect fit. To summarize, the PRATIO, PNFI, and PCFI provide insights into the balance between model fit and complexity. Higher PRATIO values suggest greater parsimony, while the PNFI and PCFI values consider fit and complexity simultaneously. However, for the saturated model, these measures do not apply as it already perfectly reproduces the observed data.

The RMSEA is a measure of how well the model fits the data, with lower values indicating better fit. In this case, the RMSEA value of .038 suggests a reasonably good fit for the default model. The LO 90 and HI 90 represent the lower and upper limits of the 90% confidence interval for the RMSEA, respectively. The range from .031 to .045 indicates the precision of the RMSEA estimate. The PCLOSE value of .999 is a p-value for the RMSEA, indicating the probability of obtaining such a low RMSEA value by chance. A value close to 1 suggests that the model fits well. The chi-square statistic of 41.861 reflects the difference between the observed and expected data in the model. A larger chi-square value indicates a greater disparity between the observed and expected data. The degrees of freedom (df), which in this case is 35, represent the number of independent information points used in the analysis. There were 35 independent pieces of information available for estimation. The probability level, also known as the p-value, is .198. It signifies the significance level associated with the chi-square statistic. This probability level represents the likelihood of obtaining a chi-square value as extreme as the observed one (or more extreme) if the specified model fits the data well. In this instance, the probability level of .198 suggests a

19.8% chance of obtaining a chi-square value as extreme as 41.861 if the specified model fits the data well.

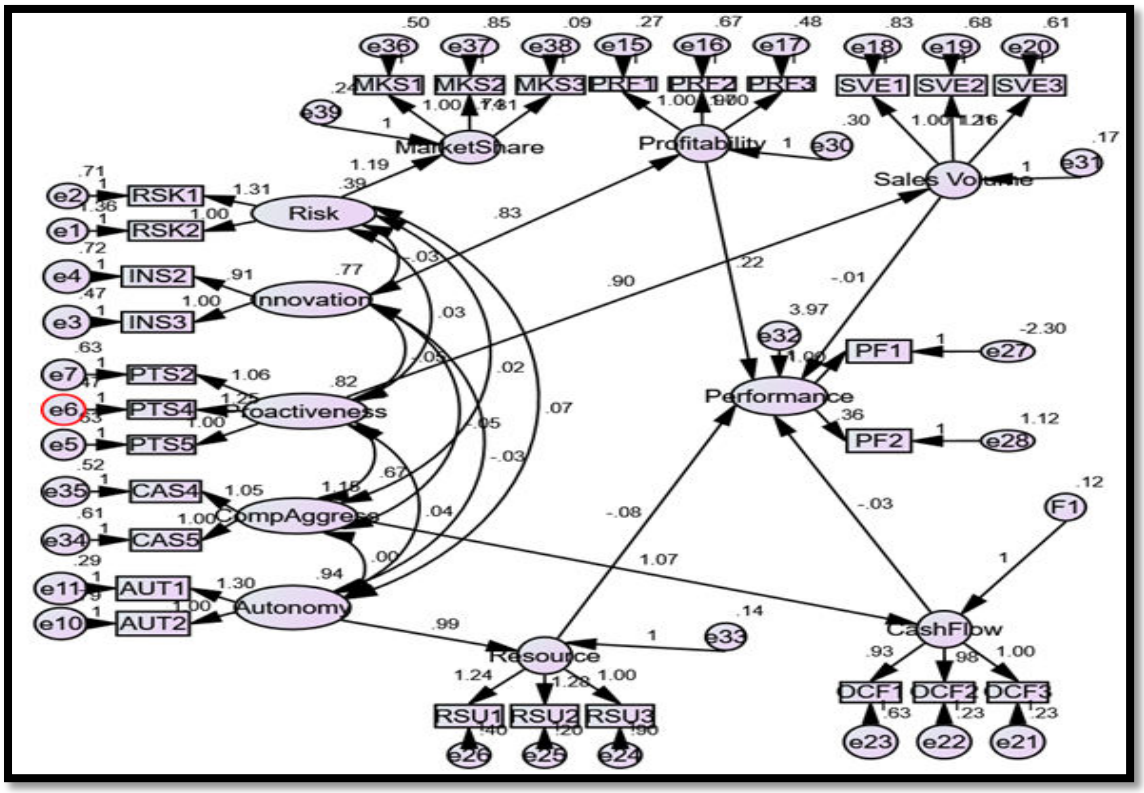


Fig 1.Structural Equation Model

Figure 1 shows a strong positive effect of innovation on profitability; strong and significant positive effect of autonomy on resource utilization; strong and significant positive effect of proactiveness on sales volume; strong evidence of a highly significant positive effect of competitive aggressiveness on operating cash flow; a significant positive effect of risk-taking on market shares. The table 5 below complements the results in figure 1.

Table 5. Regression Weights

Effects			Estimate	S.E.	C.R.	P	Label
PRF	<---	Innovation	.835	.080	10.489	***	Accept
SVE	<---	Proactiveness	.896	.075	11.945	***	Accept
RU	<---	Autonomy	.987	.076	12.988	***	Accept
OCF	<---	Comp	1.072	.057	18.829	***	Accept
PF	<---	PRF	.219	.076	2.883	.004	Reject
PF	<---	SVE	-.008	.074	-.112	.911	Reject
PF	<---	RU	-.077	.052	-1.481	.139	Reject
MKT	<---	Risk	1.191	.188	6.319	***	Accept
PF	<---	OCF	-.033	.055	-.609	.543	Reject

Source: Amos 24

The results show that there is a strong positive relationship between innovation and profitability. The estimate is 0.835 with an S.E. of 0.080. The C.R. is 10.489, and the p-value is *** (highly statistically significant). The estimated coefficient of 0.835 indicates the strength of the relationship between innovation and profitability. This means that for every unit increase in innovation, profitability is

expected to increase by approximately 0.835 units. The standard error of 0.080 provides an estimate of the uncertainty or variability associated with the estimated coefficient. Smaller standard errors indicate more precise estimates. The critical ratio (C.R.) of 10.489 is calculated by dividing the estimated coefficient by the standard error. This ratio is used to assess the statistical significance of the relationship. In this case, a C.R. value of 10.489 suggests a significant relationship between innovation and profitability. The p-value is stated as "***," indicating that it is highly statistically significant. This means that the probability of observing such a strong positive relationship between innovation and profitability by chance alone is extremely low.

The results reveal a significant positive relationship between proactiveness and sales volume based on the estimated coefficient, standard error (S.E.), critical ratio (C.R.), and p-value. The estimate is 0.896 with an S.E. of 0.075. The C.R. is 11.945, and the p-value is ***. The estimated coefficient of 0.896 represents the strength of the relationship between proactiveness and sales volume. It suggests that for every unit increase in proactiveness, there is an expected increase of approximately 0.896 units in sales volume. The standard error of 0.075 provides an estimate of the uncertainty or variability associated with the estimated coefficient. A smaller standard error suggests a more precise estimate. The critical ratio (C.R.) of 11.945 is obtained by dividing the estimated coefficient by the standard error. This ratio helps assess the statistical significance of the relationship. In this case, a C.R. value of 11.945 indicates a highly significant relationship between proactiveness and sales volume. The p-value, denoted as "***," suggests that the relationship between proactiveness and sales volume is highly statistically significant.

The results indicate a significant positive relationship between autonomy and resource utilization. The estimate is 0.987 with an S.E. of 0.076. The C.R. is 12.988, and the p-value is ***. The estimated coefficient of 0.987 represents the strength of the relationship between autonomy and resource utilization. This suggests that for every unit increase in autonomy, there is an expected increase of approximately 0.987 units in resource utilization. The standard error of 0.076 provides an estimate of the uncertainty or variability associated with the estimated coefficient. The critical ratio (C.R.) of 12.988, obtained by dividing the estimated coefficient by the standard error, indicates a highly significant relationship between autonomy and resource utilization. The p-value, denoted as "***," indicates that the relationship between autonomy and resource utilization is highly statistically significant.

The analysis indicates a highly significant positive relationship between competitive aggressiveness and operating cash flow. The estimate is 1.072 with an S.E. of 0.057. The C.R. is 18.829, and the p-value is ***. The estimated coefficient of 1.072 represents the strength of the relationship between competitive aggressiveness and operating cash flow. It suggests that for every unit increase in competitive aggressiveness, there is an expected increase of approximately 1.072 units in operating cash flow. The standard error of 0.057 provides an estimate of the uncertainty or variability associated with the estimated coefficient. The critical ratio (C.R.) of 18.829, obtained by dividing the estimated coefficient by the standard error, indicates a highly significant relationship between competitive aggressiveness and operating cash flow. This suggests that the observed relationship is unlikely to be due to chance. The p-value, denoted as "***," further confirms the highly significant relationship between competitive aggressiveness and operating cash flow.

The results reveal a significant positive relationship between risk-taking and market shares. The estimate is 1.191 with an S.E. of 0.188. The C.R. is 6.319, and the p-value is ***. The estimated coefficient of 1.191 represents the strength of the relationship between risk-taking and market shares. This means that for every unit increase in risk-taking, there is an expected increase of approximately 1.191 units in market shares. The standard error of 0.188 provides an estimate of the uncertainty or variability associated with the estimated coefficient. The critical ratio (C.R.) of 6.319, obtained by dividing the estimated coefficient

by the standard error, indicates a significant relationship between risk-taking and market shares. The p-value, denoted as "***," further confirms the significance of the relationship between risk-taking and market shares. The results further show a positive relationship between profitability and performance, and it is statistically significant. There is no significant relationship between sales volume and performance. A negative relationship between resource utilization and performance, but it is not statistically significant. There is no significant relationship between operating cash flow and performance.

Discussion of Finding

Finding revealed compelling evidence supporting the positive effect of innovation on profitability. It suggests that innovation plays a significant and advantageous role in enhancing the profitability of manufacturing firms in South-East Nigeria. This finding is significant because it emphasizes the importance of innovation as a strategic driver for financial success in the manufacturing sector. It implies that firms that prioritize and invest in innovative practices, such as developing new products, improving processes, or implementing novel business models, are more likely to experience higher levels of profitability. The specific focus on manufacturing firms in South-East Nigeria adds local context to the finding, indicating that the positive relationship between innovation and profitability holds true within this particular regional context. This insight could be valuable for manufacturing firms operating in South-East Nigeria, as it suggests that embracing innovation can lead to improved financial performance. Furthermore, this finding aligns with that of Tuan et al. (2016) that innovation has positive effect on firm performance.

Finding revealed robust evidence indicating a significant positive relationship between proactiveness and sales volume. This finding suggests that being proactive, taking initiative, and actively seeking opportunities has a substantial effect on increasing sales volume. The significance of this finding lies in its implications for businesses seeking to enhance their sales performance. The positive relationship between proactiveness and sales volume aligns with theoretical perspectives and prior research on the subject. The study advances that of Bromiley (2017) which found that that proactiveness increases performance. This also advances the finding of Bruno (2015) that proactiveness is key determinants of firm performance.

Finding revealed compelling evidence supporting a significant positive relationship between risk-taking and market shares of manufacturing firms in South-East Nigeria. This suggests that companies or businesses that are willing to take calculated risks are more likely to achieve higher market shares compared to those that adopt a more conservative approach. This finding holds significant implications for strategic decision-making and competitive advantage. It implies that companies that are willing to venture into new markets, invest in innovative products or services, or undertake bold marketing campaigns are more likely to capture a larger share of the market. Risk-taking can provide opportunities for growth, differentiation, and expansion, leading to increased market presence and competitiveness. The finding of the study refutes that of McDowell (2017) which stated that risk propensity does not necessarily have a significant effect on performance. The study aligns with the finding of Broniiley (2017) that risk taking increase the performance of firms.

Finding revealed a significant positive relationship between entrepreneurial autonomy and resource utilization in manufacturing firms located in South-East Nigeria. This finding suggests that when entrepreneurs are granted autonomy to make decisions and take initiative within their organizations, it positively influences the effective and efficient utilization of resources. The significance of this finding lies in its implications for entrepreneurial practices and resource management. It implies that when entrepreneurs have the freedom to exercise their judgment, creativity, and entrepreneurial spirit, they are more likely to utilize resources effectively. This autonomy allows them to make strategic decisions

regarding resource allocation, optimize resource utilization, and drive the growth and success of their firms.

Finding demonstrated a highly significant positive effect of competitive aggressiveness on the operating cash flow of manufacturing firms in South-East Nigeria. This finding suggests that firms that exhibit a proactive and assertive approach in their competitive strategies tend to experience higher levels of operating cash flow. The significance of this finding lies in its implications for strategic decision-making and financial performance. It indicates that being competitively aggressive, such as actively pursuing market share, engaging in aggressive marketing tactics, or continuously innovating products or services, positively impacts the generation of operating cash flow for manufacturing firms. This aligns with the study of Lechner and Gudmundsson (2014) which found that competitive aggressiveness has significant effect on performance.

Conclusion

In conclusion, these findings shed light on the crucial relationships between innovation and profitability, proactiveness and sales volume, risk-taking and market shares, entrepreneurial autonomy and resource utilization, and competitive aggressiveness and operating cash flow. They provide valuable insights into the dynamics and potential drivers of success within manufacturing firms in South-East Nigeria. These findings underscore the importance of adopting innovative, proactive, and entrepreneurial approaches, embracing calculated risks, granting autonomy, and maintaining competitive aggressiveness to achieve positive financial outcomes and enhance market performance. By understanding and leveraging these relationships, businesses can strive for continuous growth, competitiveness, and success in the dynamic landscape of the manufacturing industry in South-East Nigeria.

Recommendations

Based on the specific objectives and findings, the following recommendations can be made:

- To enhance entrepreneurial innovativeness and its impact on profitability, manufacturing firms in South-East Nigeria should consider encourage and support a culture of innovation within the organization, encourage employees to explore innovative solutions and provide them with the necessary resources and support to implement their ideas, allocate resources to research and development activities to promote innovation, foster collaborations and partnerships with external entities and continuously monitor and evaluate the impact of entrepreneurial innovativeness on profitability.
- To leverage entrepreneurial proactiveness and drive sales volume, manufacturing firms in South-East Nigeria should cultivate a proactive mindset among employees and encourage them to take initiative in identifying and pursuing sales opportunities, invest in sales training programs to enhance employees' proactive selling skills and customer relationship management, develop proactive sales strategies tailored to meet customer needs and gain a competitive edge.
- To effectively leverage entrepreneurial risk-taking and enhance market shares, manufacturing firms in South-East Nigeria should consider establishing a risk management framework that balances calculated risk-taking with risk mitigation strategies, conducting comprehensive market analysis and feasibility studies and encouraging a culture that embraces a calculated approach to risk-taking.
- To optimize resource utilization and leverage entrepreneurial autonomy, manufacturing firms in South-East Nigeria should provide employees with the autonomy to make decisions and take ownership of their work, establish clear guidelines and boundaries to ensure that decision-making aligns with organizational objectives and values, offer training and development programs focused on enhancing resource management skills and nurture a culture that emphasizes accountability and responsibility for resource utilization.

- To capitalize on entrepreneurial qualities and drive business success in the manufacturing sector of South-East Nigeria, firms should perform a comprehensive analysis of the competitive landscape to identify areas where the firm can gain a competitive advantage, develop and implement aggressive marketing and sales strategies to increase market share and drive revenue growth.

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