

COOPETITION AND MICRO, SMALL AND MEDIUM ENTERPRISES PERFORMANCE

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ABSTRACT

This study investigates coopetition in addressing the interactions among micro, small and medium enterprises. The fundamental cause of coopetition was examined and the degree to which it affects the enterprise performance as evidenced from micro, small and medium enterprises (MSMEs) was evaluated. Premised on existing literature, intensity of cooperation, intensity of competition and intensity of equality were used as the dimensions of coopetition. The descriptive survey research method was applied. Structured questionnaires were administered to 1876 MSMEs in Nigeria. The structural equation model was used in analyzing data to establish the extent of influence of coopetition on MSMEs performance. It was established that coopetition affects access to technology and market share. It was also revealed that the intensity of competition affects coopetition more and access to technology was seen as the most significant reason MSMEs are involved in coopetition. The findings of the study also show that MSMEs mostly take part in coopetition in order to reap the benefits of technological advancement. The study is limited in scope to micro, small and medium enterprises (MSMEs). Future studies should investigate the effect of coopetition on specific industries. MSMEs should engage more in coopetition in order to achieve their objectives and Entrepreneurs should design and manage competitive relationships with their key competitors in order not to lose their core competence. The study pays attention to the fundamental cause of coopetition and establishing factors that influence cooperation which have direct effect on competition. This

study also adds intensity of equality as a measurement of cooperation based on literatures reviewed as previous empirical studies did not include it.

Keywords: Coopetition, Competition, Cooperation, Enterprise, Entrepreneur

1. INTRODUCTION

In an ever changing, global and complex business environment, enterprises are constantly engaging in simultaneous pursuit of competition and collaboration to achieve competitive advantage. Sherer (2003) posits that having superior resources or product advantage is insufficient most times in ensuring the sustainability of start-up enterprises. It is therefore imperative for these enterprises to cooperate with other firms in order for them to compete favourably (Worimegbe, 2020).

This seemingly absurd opinion shows the complex environment in which entrepreneurial activities take place. Business enterprises face similar pressure, hence the need to collaborate with competitors in order to gain and give room for innovation and use of new technology. Dagnino & Roco (2010) are of the opinion that new resources, skill, and processes are stimulated through cooperation. In recent times business enterprises have become convoluted in complex interactions with other firms, and these networks can be a major source of competitive advantage.

Business enterprises not only collaborate with complementary ventures such as their customers and suppliers but they also increasingly cooperate with their actual competitors. This unique situation has been named cooperation. Byung-Jin (2011) posits that cooperation is an act or process cooperating with competitors to create a bigger value.

Cooperation looks at how an enterprise can utilize the resources of other business enterprises in alignment with their own resources thereby achieving more in their businesses than by operating alone. Fast and consistently developing enterprises are out-performed by large firms with global affiliations and in order for enterprises to enter into the integrated horizontal value chain, it is pivotal for them to create and develop cooperative link with such firms (Crick & Crick, 2019).

As a result of resources, skill and power disparity, there exist a challenging and asymmetric relationship between larger firms and MSMEs. According to Bengtsson & Johansson (2011), the asymmetric relationship among enterprises of heterogeneous nature result in large firms profiting more from new technology and this could create a situation

whereby large firms might take different steps to capture suppliers within their value chain or discover new ways to replicate products and services offered by MSMEs.

Various studies in the last decade have looked into the nature of coopeitiveness between small and large firms (Bar-Nir & Smith, 2002; Bengtsson & Johansson, 2011; Byung-Jin, 2011) but there is dart on literature on how MSMEs can create, maintain and sustain coopeitiveness specifically.

This study explores the concept of coopeitition in micro, small and medium enterprise context in Nigeria. The study pays attention to the fundamental cause of coopeitition and establishing the factor(s) that most significantly influence cooperation in micro, small and medium enterprise. Based on existing literature, the study developed a theoretical model of coopeitition which captures the concept of the intensity of equality, cooperation and competition among MSMEs. The apriori expectation is that coopeitition should have a degree of influence on MSMEs. The main aim of this study is to establish the effect of coopeitition on MSMEs. The study explores the following specific objective:

- a) To determine the nature of coopeitition among MSMEs
- b) To establish the effect of coopeitition in MSMEs technological advancement
- c) To determine the effect of coopeitition on MSMEs market share. To determine the nature of coopeitition among MSMEs.

2. LITERATURE REVIEW

2.1. Nature of Coopeitition

Coopeitition is created when two or more enterprises complement themselves in certain business activities while simultaneously providing products of close substitute to one another. Laine (2002) is of the opinion that coopeitition occurs when firms cooperate to coordinate and complement their operations while simultaneously competing for better industrial performance. In coopeitition, the elements of cooperation and competition are both present.

According to Dagnino & Padula (2002), coopeitition is a strategic relationship among enterprises involving the the presence both competition and cooperation to create a new survival technique. Coopeitition creates cooperation system which leads to an enterprise gaining and sustaining competitive advantage when the objective on new value creation.

Ritala, Hallikas & Sissonens (2008) concluded that Coopetition creates an extreme and complex relationship phenomenon which is paradoxical because opposite forces of competition and cooperation are simultaneously present in the same relationship. Bengtsson & Kock (2014) argue that in a coopetition three nature and levels of relationships exist based on the value given to each behavior. Hence, it is pivotal to focus on influence and appropriateness in the different levels of relationship in a coopetition.

They further established that three types of relationship that exist are equal relationships, competition dominated relationship and cooperation dominated relationship. Equal relationships behavior involves the interplay among the various enterprise which put each enterprise in a position of strength and balance which bring simultaneity in coopetition. Coopetitive relationships between firms of different sizes are often more complementary to each other, allowing less competition and more cooperation, while competition between firms of similar sizes operate on equal terms and are more competitive. Krommendijk (2016) argues that equal relationship occurs when the degree of competition and cooperation is equally concentrated on.

Relationship which are dominated by competition deals with enterprises formulating strategies which concentrate on how they can outdo their competitors. Competitiveness is concerned with how an enterprise gain, maintain and sustain advantage over its rivals. Park Srivastava and Gnyawali, (2014) are of the opinion that in a competition-dominated relationships enterprise show competitive rent-seeking behavior which brings about economic efficiency by encouraging enterprises to optimize their scarce resources while providing the enabling atmosphere for innovation and entrepreneurship.

Quintana-García & Benavides-Velasco (2004) views that competitive behavior is revealed when enterprises protect their essential virtuosity, potentials capabilities and resources while simultaneously optimizing their resources and distinctive competencies in dealing with its rivals. Kale, Singh & Perlmutter (2000). explained that in as much as competitive behavior aids an enterprise in earning temporary rents, it could also be difficult for such firms with competitive behavior to sustain competitiveness.

According to Child, Faulkner, & Tallman (2005) cooperation dominated relationship stresses the creation and maintaining of relational or collaborative advantage. As a result of scarce resources, it is only few enterprises that favourably and effectively compete in the current market dynamics and volatile business atmosphere, hence the need for cooperative relationship.

A cooperative relationship has the potential of offering superior advantages for enterprises to contribute resources and optimize valuable resources and competencies, create easier new markets entries, and give room for mutual synergies. Krommendijk (2016) posits that cooperation occurs when there is less presence of competition and more of cooperation within a relationship.

2.2. The Case for Coopetition

Studies in the past showed that cooperation and competition are opposite ends of a single sequence (Gomes-Casseres, 1994; Hamel, Doz and Prahalad, 1991; Branden-burger and Nalebuff, 1999). These studies looked at different distinct perspectives, focusing on either competitiveness or on cooperation among enterprises, with one of the perspectives arguably harming or threatening the other concept.

In most recent times, the studies of Bengtsson & Kock (2014) and Quintana-García & Benavides-Velasco (2004) looked into the alliance with competitors from the single perspectives of cooperation theory and competition theory. Chen (2008) revealed that as the strategic partnership between competitors becomes more profound as studies in cooperation or competitive dynamics paid more attention to the concepts, although different terms were employed, such as alliance competition, cooperation with rivals and competitive collaboration depending on the viewpoints of the studies (either the standpoint of competition-oriented or cooperation-oriented).

Hamel et al (1991) posit that cooperation between/among rival firms often result in a learning race in which enterprises take advantage of one another by competing over gets more advantage from the strategic alliance before it comes to an end. Ketchen & Snow (2004) added that coopetition is one of the six components in competitive dynamics studies while Krommendijk (2016) explains that cooperation-competition literature used different competitive features such as industry structure and inter-enterprise alliance to determine results such as learning organization, intensity, and duration among enterprises of cooperative arrangements (such as joint ventures, alliances).

Bengtsson & Kock (2014) argue that the benefit of coopetition can be seen in the integration of pressure to create within new channels brought about by competition and the ability to utilize resources provided by cooperation. They further mentioned that the advantages of cooperation among others is the joint bearing of cost of research and development of new

products by cooperating enterprises, shorter lead time is created and each enterprise can contribute its core competence to achieve better performance (Worimegbe, 2020).

Coopetition leads to efficiency. Hamel et al (1991) mentions that coopetition enhances the internal competencies and digitalization of competing enterprises while mitigating transferring of competitive advantages to aggressive partners. Quintana-Garcia & Benavides-Velasco (2004) are of the opinion that coopetition enhances the increase in technological diversity and integrates complementary resources of competitors in creating products, services and new technologies while Luo (2006) concluded that coopetition also lessens the uncertainties, risks and costs borne as a result of innovation or product development during internationalization of firms.

Gnyawali & Park (2009) opine that coopetition is especially advantageous to Micro, Small and Medium Enterprises (MSMEs) since they often times limited in capacity to innovate and create new technologies on their own due to the risks, uncertainties and costs, associated with the process. Coopetition makes MSMEs to spread risks and costs across multiple enterprises which enhances them in competing with larger ones. Park et al (2014) also added that spreading risks is also an advantage for larger firms when they are faced with radical innovations that require a large investment involving high risks.

Therefore, coopetition can be seen used as a risk management tool during volatile and uncertain markets and high costs of technology. Carayannis & Alexander, (1999) concluded that coopetition can be of special benefit to enterprises that operate in highly complex, knowledge driven, and ever-changing environments.

2.2.1. Micro, Small and Medium Enterprises (MSMEs) Performance

The issue of the measurements of MSMEs performance has generated a lot of concerns in the existing literature. Hamzani and Achmand (2016) opine that the performance of MSMEs is pivotal to their survival. Rante (2010) explains that the MSMEs performance can be measured using estimates such as financial conditions, profitability, competition, market share, increase in revenue, employees motivation and employees productivity. Adriana and subaedi (2010) emphasize that the level of performance in MSMEs is influenced by the capacity of the entrepreneurs since they make the pivotal decisions in the firm.

Chong (2003) advocates three approaches to the measurement of MSMEs performance which are financial measurement, customers approach and innovation. the financial return on

the money invested is the focus of the financial perspective. Returns could be represented in this context in the form of profit or cash or monetary efficiency generated over a number of years. Customer value measures the extent of customer satisfaction, retainment of customers, and loyalty of customers (Crick & Crick, 2020).

Satisfaction could be calculated by the number of complaint messages, input from members of field sales and support, customer answer cards and evaluations, while profitability could be assessed using the length of an ongoing partnership between a client and a business enterprise. Customers often leave due to irritation, disapproval of the goods or services and the company organization's responsiveness to requests and after-sales services. L Allegiance could be calculated by the amount of new clients added over a given period of time to the company while maintaining the same customer portfolio.

Learning and innovation and approach examine the level of innovation (including product and service design leadership, emerging markets and consumer needs) and the learning process (includes quality measures, cycle time and after-sales services). This approach aims at developing value for consumers and evaluating the time scale from the recognition of the needs of customers to satisfying their needs by not sacrificing the quality of goods and services (Worimegbe, 2020). Process-quality metrics are typically adopted by manufacturing firms. In this study, the market share and .

2.3. Coopetition and Micro, Small and Medium Enterprises (MSMEs)

Previous studies primarily examined coopetition influence on larger or/and multinational firms (Parker, Srivastava & Gnyawali, 2014; Dagnino & Padula, 2002; Kanter, 1994). According to Morris, Kocak and Ozer (2007), to larger firms, it seems that start up enterprises are faced with distinctive issues that have effect on the logic of pursuing a competition-collaboration relationship and that in comparison to larger organizations, MSMEs ventures are more exposed to the adverse effect of environmental forces, as a result of scarce resources, limited sizes, debt capacity, the propensity of larger firms to depend on customer niche base, and their frequent dependency on limited product or service line. MSMEs operations are affected by limited market presence which subjects them to aggressive competition, volatile demand fluctuations, and limited support on the part of the distributors and suppliers.

Aldrich and Auster (1986) mentioned that small enterprises liability includes capital, higher costs of operation, errors and blunder, huge 'liability of newness' and fewer tax advantage. Morris et al (2007) opined that MSMEs can overcome these problems through coopetition as it enhances the enterprise efficient utilization of limited resources and removes barriers for enterprises to access market they would have otherwise been unable to enter. They further argued that coopetition makes MSMEs to compete in major markets dominated by larger firms through technological advancement and undertake research and development activities which bring about innovation. Gomes-Casseres (1997) added that coopetition offers scale economics to MSMEs, as they benefit from joint volume opportunities. MSMEs achieve scale economies from lower costs of operation, reduces capital expenditure and research and development.

2.3.1. Empirical Evidence

In order to build entrepreneurial prospects in Sweden, Bengtsson and Johansson (2014) investigate the relationship between coopetition and small and medium-sized enterprises (SMEs) in the telecoms industry. The study discusses the management challenges faced by SMEs as they employ the policy of co-operation with larger organizations and how such a partnership could be managed in order to retain critical opportunities. Using three exploratory case studies, the study developed that by managing their status and retaining their competitiveness through coopetition, SMEs could increase their ability. The study showed the portfolio of partnerships, sector specifics, and entrepreneurial prospects as cooperative steps in SMEs

The relation between cooperation and the business model is examined by Ornstein and Sandahl (2015). The thesis explores how technical advances have brought about dramatic changes in the market world of telecommunications and information technology. The changes that have arisen and have forced businesses to change the way they work and do business and function. They thought that it was no longer possible for companies to act in isolation and that companies could participate in strategic alliances, such as partnership with horizontal and vertical rivals. Furthermore the study shows that collaboration is important to build and deliver values that will increase the satisfaction of consumers and capture the market. The study enriches current literature by linking cooperation with business models, as the crux of both principles is value capture and value development.

Morris et al. (2007) are examining co-operation in Turkey as a driver of small business strategy and efficiency. The study explores the essence of co-operation in small businesses and its importance to small business operations, using the dimensions of mutual benefit, confidence and engagement as a measure of co-operation. The study shows that coopetition is based on reciprocal advantages in small businesses using a survey research design and a sample of 647 small businesses and that the dimensions of coopetition employed in the study depend on each other.

Crick and Crick (2020) in their report on co-operation as a strategic instrument for small enterprises, technology firms, pharmaceutical organizations, non-governmental organizations and retailers to tackle the COVID-19 pandemic. By exposing the heterogeneity of various companies during the global crisis, the study added to the current literature.

The study advises that before incorporating it into their acts, organizations should determine the benefits and risks involved in the coopetition strategy. The authors propose that it is crucial to decide the essence of coopetition between the various players in the economy and to further investigate which coopetition companies can embark on the most important form.

Worimegbe (2020) explores how coopetition contributes to customer experience using technology as a moderating factor in the Nigerian banking sector. As a cooperative measure, the dimensions of common network governance, sales of a common commodity, strategic partnership, and common central procedures were used. Using a sample of 1, 537 customers of deposit money banks and the analytical method of PLS-SEM, the study found that cooperation is a driver of customer experience. The report advises that in more vibrant sectors of the economy, further studies should be undertaken.

2.4. Games Theory

This study is anchored on the games' theory. Carfi and Okura (2014) assert that coopetition is built on the games' theory. Games theory explains the interrelationship between firms and how the individual actions of the firms influence the payoff of the other firms. How the firms in an industry relate is pivotal to the existence of coopetition. This is based on the fact that there exists a multi-complex relationship among firms and from the perspective of market structure, there is similarity between games theory and coopetition.

Ohkta and Okura (2014) opine that the presence of at least two relationships (cooperative and competitive) makes games theory the driver of coopetition. Therefore, firms

seek to balance the equilibrium between meeting their specific goals (performance) and sustaining a tolerable relationship with their rivals. Coopetition involves firms (players) applying strategies (equalities, competition and cooperation) and payoffs (performance). It is imperative on firms to seek the best strategy(ies) which will bring about better reward, a gap this study seeks to fill among MSMEs.

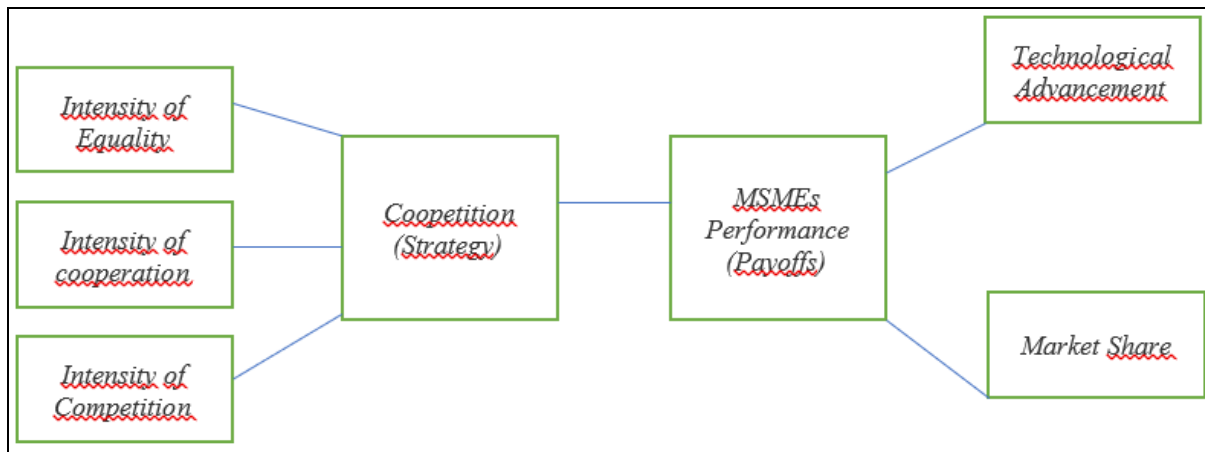


Figure 1: Conceptual Review
 Source: Researchers (2020)

2.5. The Study

There are limited empirical studies done on coopetition and performance, especially among MSMEs in Nigeria. This study builds on previous studies (Gnyawali & Park, 2011; Faloye, 2013) that focused on coopetition in large firms, in establishing the effect of Coopetition on MSMEs. This study also adds intensity of equality as a measurement of competition based on literatures reviewed (Bengtsson & Kock 2014; Faloye, 2013; Krommendijk 2016) as previous empirical studies did not include it.

2.6. Research Hypotheses

- a) Coopetition dimensions do not significantly affect MSMEs Technological advancement
- b) Coopetition dimensions do not significantly affect MSMEs Market Share.

3. RESEARCH METHODOLOGY

The survey research designed was employed in this study. According to Small and Medium Enterprise Agency of Nigeria (SMEDAN, 2016), there are over 37,000,000 MSMEs in Nigeria. The study employed the normal distribution sample estimation technique at 95 %

confidence interval and 5% error margin in arriving at a sample of 1876. The sample size was divided equally between the service industry and the manufacturing sector. Each sector was given 938 questions which were distributed with the aid of research assistants and the MSMEs operators.

Well-structured questionnaire on a seven Likert scale ranging from 1 (minimum) to 7 (Maximum) was distributed among Chief Executive Officers of MSMEs in Lagos, Nigeria. The choice of lagos was influenced by the fact that lagos has the highest number of MSMEs in Nigeria (Worimegbe, 2020). The questionnaire was grouped into Section “A” (Demographic), “B” (nature and of Coopetition), “C” (Coopetition and Technological Line) and “D” (Coopetition and Market Share).

A total of 1388 questionnaire were returned, giving a 74 percent response rate, which is adequate for this study. The questionnaires measuring coopetition was adopted from thwe study of Crick and Crick (2019) while the MSMEs performance was adopted from the study of Chong (2003). The interrater reliability test method was conducted.

This method was adopted in order to ascertain the degree of agreement of measurement of the research instrument. The correlated result gave a Cronbach Alpha value of 0.87, 0.82, 0.78, 0.84 and 0.76 for the measures of intensity of cooperation, intensity of coopetition, intensity of equality, technological advancement and market share. The study adopted the research instrument from the studies Gnyawali and Park, (2011) and Faloye (2013). However, the research instrument was modified to suit local the local environment.

A multivariate analysis was employed to test the impact of Coopetition on MSMEs Performances

Model Specification

$$PERF = f(\text{coopetition}) \quad \text{eq (1)}$$

$$PERF = \beta_0 + \beta_1(INEQ) + \beta_2(INCOOP) + \beta_3(INCOMP) + \mu \quad \text{eq (2)}$$

$$PERF = TECHAD + MARSHAR$$

$$TECHAD = \beta_0 + \beta_1(INEQ) + \beta_2(INCOOP) + \beta_3(INCOMP) + \mu \quad \text{eq (3)}$$

$$MARSHAR = \beta_0 + \beta_1(INEQ) + \beta_2(INCOOP) + \beta_3(INCOMP) + \mu \quad \text{eq (4)}$$

Where INEQ: Intensity of Equality

INCOOP: Intensity of Cooperation

INCOM: Intensity of Competition

PER: Performance

TECHAD: Technological Advancement

MARSHAR: Market share

$\beta_1, \beta_2, \beta_3$: Coefficients of variables

μ : Error term

3.1. Apriori Expectation

Hinged on the study of Krommendijk (2016), it is expected that there will be a positive relationship between the dimensions of cooperation (intensity of equality, intensity of cooperation and intensity of competition) and the dimensions of performance (technological advancement and market share). That is, $\beta_1, \beta_2, \beta_3 < 0$.

Test of Normality

Table 1: Normality, Multicollinearity, Collinearity and Independence of Residual

		Recommended Value	INEQ	INCOOP	INCOM	TECHAD	MARSHAR
Normality	Skewness	-3 to 3	-0.844 to 1.997	-0.989 to 2.057	-0.772 to 0.821	-0.211 to 0.322	-0.622 to 0.448
	Kurtosis	-10 to 10	-0.192 to 4.113	-1.104 to 3.593	-0.191 to 4.113	0.411 to 3.260	-1.063 to 2.641
Multicollinearity	Tolerance	>0.10	0.226 to 0.370	0.144 to 0.642	0.338 to 0.466	0.416 to 0.518	0.214 to 0.871
	VIF	< 10	1.644 to 2.596	1.222 to 1.964	1.336 to 4.26	1.014 to 1.059	1.003 to 1.041
Collinearity Statistics	Correlation between variables	< 0.90	-0.341 to 0.621	-0.229 to 0.513	0.116 to 0.381	-0.161 to 0.371	-0.193 to 0.117
Independence of Residual	Cook's distance for residual	< 1.0	0.337	0.484	0.332	0.437	0.214

Hinged on the suggestions of Kline (1998) all variables employed in the multivariate analysis were considered satisfactory within the recommended threshold of normality i.e. -10 to 10 for kurtosis and -3 to 3 for skewness.

4. RESEARCH FINDINGS

The chart shows 80% MSMEs sampled are involved in coopetition while 20% of the sampled enterprises are not. This reflects the general situation in Nigeria, majority of MSMEs in Nigeria are involved in coopetition

Figure 1 shows the degree of coopetition in MSMEs

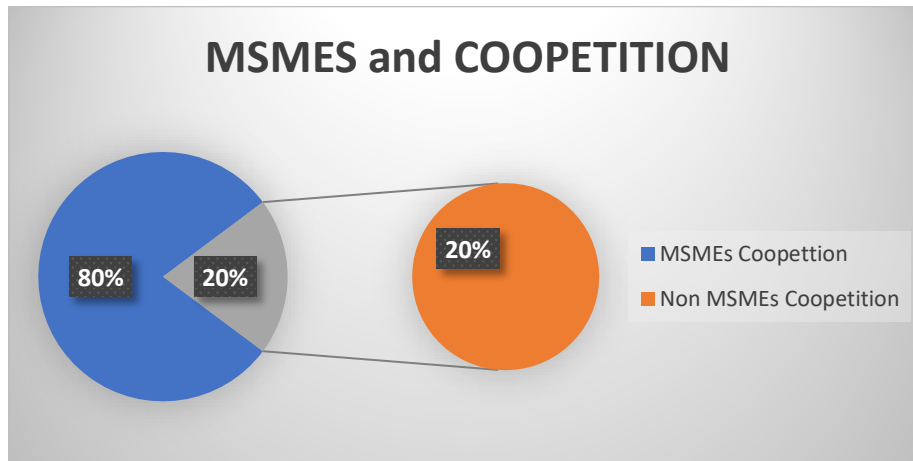


Figure 1: MSMEs and Coopetition
 Authors Computation (2020)

The profile of the survey respondents is shown in Table 2. The profile suggests that the majority of respondents (n = 738, 53.89%) are male. This illustrates that the majority of small businesses are owned/managed by men. The majority of respondents sampled were married (n= 592, 42.65%). A consequence of this is that most small businesses are owned and operated by married individuals. The survey shows that a greater number of respondents had formal education (n=1014, 73.1%). The majority of respondents in Nigeria are between working-class age, while the highest age bracket of business owners/managers is between 41-60 (n= 563 40.6) age bracket. The survey analysis reveals that most small businesses are between 1-5 years of age (operations), while the mean age of small businesses is 3.76 years of age (μ).

Table 2: Sample Profile

Demographics	Frequency (n)	%
Gender (1388)		
Male	748	53.89
Female	640	46.11
Marital Status		
Singles	428	30.84
Married	592	42.65
Others (widowed and separated)	358	26.51
Education		
Formal Education	1014	73.1
Informal Education	374	26.9

Age of Respondents		
18-40	498	35.8
41-60	563	40.6
61 and above	327	23.6
Years of Firm Existence		
1-5	644	46.4
6-10	483	34.8
Above 10 years	261	18.8
		Mean age (μ)= 3.76

4.1. Examining research models

Hypothesis 1: Coopetition dimensions do not significantly affect MSMEs Technological Line.

Model 1:

$$\text{Technological Adv} = 1.272 + 0.143 \cdot \text{INTEQ} - 0.231 \cdot \text{INTCOO} + 0.481 \cdot \text{INTCOM} + \text{Error}$$

Standerr	(0.369)	(0.01)	(0.049)	(0.021)
T-values	3.447	14.322	-4.714	22.905
p(0.05)**	0.000	0.008	0.004	0.002

$$R^2 = 0.536$$

$$\text{Error Variance} = 0.195$$

From the results presented, the T-values of the coefficients reveals that there is an empirical evidence for accepting the alternative hypothesis (HA) while rejecting the null hypothesis (Ho). Intensity of equality (T-values=14.322, P=0.008), intensity of competition (T-values=-4.714, p=0.004) Intensity of cooperation (T-values = 22.905, p=0.002) of coopetition. The coefficient of determination which is the R2 shows 0.536 and this indicates that 53.6% variation in MSME technological line is caused by coopetition.

The result also reveals that as intensity of cooperation reduces, there is an increase in technological advancement. That is, for every per unit increase in technological line, intensity of cooperation reduces by 0.231. The P-values of all the measured dimensions of coopetition reveal that intensity of cooperation and intensity of competition are significant to the model. The result also establishes that intensity of competition is the most significant driver of technological advancement in MSMEs. The findings of this work lend support to the work of Bengtsson & Kock (2013) and Faloye (2013).

Hypothesis 2: Competition dimensions do not significantly affect MSMEs Market Share.

Model 2:

Market Share =	4.418	-0.242*INTEQ	+0.896*INTCOO	+ 0.*885*INTCOM	+Error
Standerr	(0.661)	(0.015)	(0.012)	(0.70)	
T-values	6.683	-16.133	74.667	6.148	
P-values	0.000	0.001	0.015	0.006	

Error Variance = 0.195

R² = 0.482

The result reveals that based on the T-values associated with the coefficients of cooperation, there exist an empirical evidence for accepting the alternative hypothesis (HA) while rejecting the null hypothesis (HO)intensity of equality (T-values =-16.133, P=0.001), intensity of competition (T-values =74.667, p=0.015) Intensity of cooperation (T-values = 6.148, p=0.006) of cooperation. Therefore, we can confirm the existence of these two relations of causality and must therefore reject the null hypothesis and Accept HA.

The coefficient of determination which is the R2 shows 0.482 and this indicates that 48.2% variation in MSME market share is brought about by Cooperation. The result also reveals that as intensity of equality reduces, there is an increase in market share. That is, for every per unit increase in market share, intensity of equality reduces by .242. The P-values of all the measured variables measured reveal that intensity of equality, intensity of competition and intensity of cooperation and are significant to the model.

4.2. Test of Goodness Fit

The paths of the equation were freely estimated. The structural equation model reveals a good fit ($\chi^2 = 818.93$, $df = 108$, $p < 0.00$; $RMSEA = 0.088$, $CFI = 0.93$ $IFI = 0.94$, $GFI = 0.92$). figure 3 reveals the interaction among the variables.

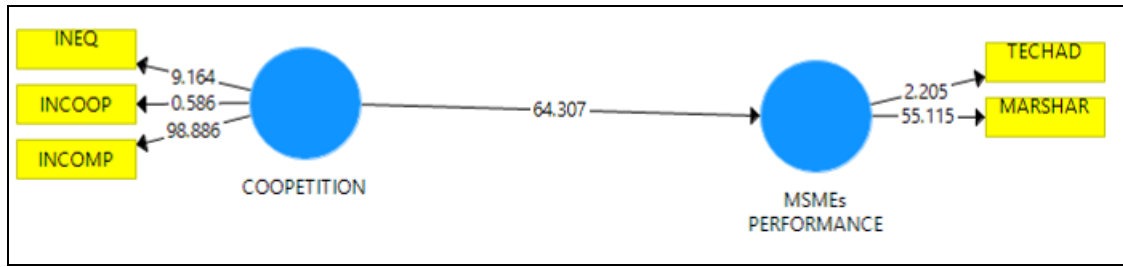


Figure 3: Path Analysis

The estimated values of the coefficients of the structural equations provide relevant information about the ways in which cooepetition affects MSMEs performance. The result reveals that intensity of competition ($t=98.886$, $p=0.000$) is the main driver of cooepetition. The path analysis also shows that market share ($t=55.115$, $p=0.000$) is the main reason MSMES are into Coopetition. It can be inferred from the analysis that the combined dimensions of cooepetition have significant effect on the combined dimensions of MSMEs performance.

5. DISCUSSION

The study reveals the influence of cooepetition on MSMEs performance. The study establishes that the dimensions of cooepetition (intensity of equality, intensity of cooperation and the intensity of competition) have significant impact on performance of MSMEs. This supports the position of Krommendijk (2016), who envisaged a positive relationship between cooepetition and the performance of a firm.

The result indicates that the intensity competition is the most significant construct in cooepetition determining technological advancement. That is, the level of firms' competition in the industry will determine the type and level of technology employed by a firm in sustaining their performance level. The intensity of cooperation is the most significant measure of cooepetition is the most significant variable influencing the market share of the firm. The more firms in the same industry cooperate, the more their market shares increase.

The path analysis established that when all the dimensions of cooepetition are combined, the intensity of competition determines the degree of cooepetition while technological advancement is the most significant measure of MSMEs performance. The study establishes that by applying the games theory to MSMEs activities, firms should first seek to be competitive (strategy) in achieving market share (payoffs) before considering any other type of strategy and rewards. The findings of this work lend support to the work of Bengtsson & (Kock, 2013; Faloye, 2013).

6. RESEARCH IMPLICATION

The findings of this study are critical to the improvement of MSMEs performance. Coopetition should be employed by MSMEs in meeting their corporate and strategic goals. That is, in the face of constrained resources and a dynamic environment, coopetition should be utilized to increase market share and access better technology.

7. CONCLUSION

Coopetitive relationships exist, the degree to which coopetition affects MSMEs performance, the most significant dimension of coopetition and the determinant of performance in MSMEs. The study concludes that MSMEs activities are done in a volatile environment that is dynamic and influenced by global activities and as such MSMEs need to coopetite in order to penetrate and enter the market. When MSMEs coopetite they are able to overcome the challenge of liability that comes with innovation of technology and their limited size. The present study hence contributes to understanding why MSMEs and competing enterprises should collaborate.

The study also revealed that coopetition is a pivotal strategy for leveraging resources and reducing risk not so just an action of necessity. Although collaborating with competitors creates some level of risk, coopetition is actually an essential tool for risk management for MSMEs. The estimation of SEM reveals that intensity of competition is a key factor in coopetition and this implies that in coopetition, enterprises should not ignore the activities of rivals but should operate from position of strength while harnessing resources together.

Coopetition is also pivotal to MSMEs in accessing new technology which they cannot afford. The study recommends that MSMEs engage more in coopetition in order to achieve their objectives. When strategic alliances are formed with fiercest of competitors, enterprises suffer under some conditions. Entrepreneurs should therefore design and manage cooperative relationships with their key competitors. This is so because result suggests that enterprises in competitive relationship loose intensity of equality.

REFERENCES

Ardiana,!. & subaedi., A.(2010). Kompetensi SDM UKM dan Pengaruhnya Terhadap Kinerja UKM di Surabaya. **Jurnal Manajem dan Kewirausahaan**. 12(1), 45-53

Ahuja, G., Lampert, C.M., Tandon, V. (2008). Moving beyond Schumpeter: management research on the determinants of technological innovation. **The Academy of Management Annals**, 2(1), 1–98.

Bengtsson, M. And Kock, S. (2014). Coopetition - Quo vadis? Past accomplishments and future challenges. **Industrial Marketing Management**, 43(2), 180-188.

Bengtsson, M., & Johansson, M. (2011). Clashes between contending market regimes: A challenge for firms in converging industries. **European Business Review**, 23(5), 454–476.

Barnir, A., & Smith, K. (2002) Interfirm alliances in the small business: The role of social networks. **Journal of Small Business Management**, 40(3), 219-232

Brandenburger, A. M., & Nalebuff, B. J. (2011). **Co-opetition**. doubleday, New York

Carfi, D. & Okura, M. (2014). Coopetition and game theory. **Journal of Applied Economic Sciences**, 9(3 (29)),458-469

Carayannis, E. G., Alexander, J. (1999). Winning by co-opeting in strategic government-university-industry R&D partnerships: the power of complex, dynamic knowledge networks. **The Journal of Technology Transfer**, 24, 197–210.
<https://doi.org/10.1023/A:1007855422405>

Chong, G. H. (2003). Performance Measurement of small and medium enterprises. **International journal of condition monitoring and diagnostic engineering**, 6 (3)

Crick, J. M & Crick D. (2020). Coopetition and COVID-19: Collaborative business-to-business marketing strategies in a pandemic crisis. **Industrial Marketing Management**, 88, 206-213

Byung-Jin, R. P. (2011). **The Effects of Coopetition and Coopetition Capability on Firm Innovation Performance**. Virginia Polytechnic Institute and State University. Dissertation submitted to the faculty in partial fulfillment of the requirements for the degree of. Doctor of Philosophy in Business Management.

Chen, M. J. (2008). Reconceptualizing The Competition-Cooperation Relationship: A transparadox perspective. **Journal of Management Inquiry**, 17 (4), 288–305.

Child, J., Faulkner, D., & Tallman, S. (2005). **Cooperative Strategy: Managing Alliances, Networks, and Joint Ventures**. Oxford: Oxford University Press

Crick, J. M. & Crick, D. (2019). Developing and validating a multi-dimensional measure of cooperation. **Journal of Business & Industrial Marketing**, 34(4), 665-689.

Dagnino, G. B., & Rocco, E. (Eds.) (211). **Coopetition Strategy: Theory Experiments and Cases**. London: Routledge.

Dagnino, G. B., & Padula, G. (2002). Co-opetition strategy: A new kind of inter-firm dynamics for value creation, presented at EURAM: **Second Annual conference Innovative Research in Management**, Stockholm.

Faloye, O. T. (2013). **What factors influence coopetitive relationships within an inter-organisational network?**. Retrieved from <https://www.semanticscholar.org/paper/What-factorsinfluencecoopetitivrelationshipsFaloye/a3874d07074b3ec5a80cc7d4d84c44ce891383d6>

Gnyawali, D. R., & Park, B. J. (2011). Co-opetition and technological innovation in small and medium-sized enterprises: a multilevel conceptual model. **Journal of Small Business Management**, 47 (3), 308–330.

Gomes-Casseres, B. (1994). Group versus group: how alliance networks compete. **Harvard Business Review** (Jul.-Aug.), 62-74

Hamel, G., Doz, Y., & Prahalad, C. K. (1989). Collaborate with your competitors and win. **Harvard Business Review**. Retrieved from <https://hbr.org/1989/01/collaborate-with-your-competitors-and-win>

Hamzani, U., & Achmand, A. (2016). The performance of micro, small and medium enterprises (MSMEs):. Indegenious Ethnic Versus Non-Indeginous ethnic. **Procedia Social and Behavioural Sciences**. 219, 265-271

Kale, P, Singh, H. & Perlmutter, H. (2000). Learning And Protection Of Proprietary assets in strategic alliances: building relational capital. **Strategic Management Journal**, 21(3), 217-228

Kanter, R. M. (1994). Collaborative Advantage: The Art of Alliances. **Harvard Business Review**, 72, 4 (July–August), 96–108.

Ketchen, D., Snow, C., & Hoover, V. (2004). Research on Competitive Dynamics: Recent Accomplishments and Future Challenges. **Journal of Management**, 30, 779-804

Kline, R. B. (1998). **Principles and Practice of Structural Equation Modeling**. The Guilford Press. New York, NY

Krommendijk (2016) **Differences in coopetition due to firm size**. IBA Bachelor Thesis Conference, The Netherlands. University of Twente,

Laine, (2002). **Long-term capital movements**. NBER Macroeconomics Annual. Cambridge, Massachusetts: MIT Press.

Luo, Y., (2007). A coopetition perspective of global competition. **journal of world business**, 42 (2), 129–144.

Morris, M. H., Kocak, A. & Ozer, A. (2007). Coopetition as a small business strategy: Implications for performance. **Journal of Small Business Management**, 18(1), 35-55

Ohkita, K., & Okura, M. (2014), Coopetition and coordinated investment: protecting Japanese video games' intellectual property rights. **International Journal of Business Environment**, 6(1), 92–105.

Ornstein, C., & Sandahl, K. (2015). **Coopetition and business models**: How can they be integrated, and what effect does it have on value creation, delivery and capture? (Dissertation). Retrieved from <http://urn.kb.se/resolve?urn=urn:nbn:se:umu:diva-105963>

Paavo Ritala, Jukka Hallikas, Heli Sissonen, (2008). The effect of strategic alliances between key competitors on firm performance, management research: **Journal of the Iberoamerican Academy of Management**, 6(3), 179-187

Park, B. J., Srivastava, M. K., & Gnyawali, D. R. (2014). Walking The Tight Rope of coopetition: Impact of competition and cooperation intensities and balance of firm innovation performance. **Industrial Marketing Management**, 43 (2), 210–221.

Ritala, P., Hallikas, J., & Sissonen, H. (2008). Coopetitive networks in the ICT sector. **International Journal of Business Environment**, 2(1), 1-12



Sherer, A. S. (2003). Critical Success Factors For Manufacturing Networks As Perceived By Network Coordinators. **Journal of Small Business Management**, 41(4), 34-56

Quintana-García, & Benavides-Velasco (2004). Cooperation, competition, and innovative capability: a panel data of European dedicated biotechnology firms. **Original research article**: Pages 927-938

Singh, Harbir., & Perlmutter, H. (2000). Learning and protection of proprietary assets in strategic alliances: building relational capital. **Strategic Management Journal** 21(3), 217-237.

Worimegbe, P. (2020). Coopetition and customers' experience in the Nigerian banking sector: The moderating effect of technology. **Global Journal of Business, Economics and Management: Current Issues**, 10(2), 111-123. <https://doi.org/10.18844/gjbem.v10i2.4847>

