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The moderating effect of corporate governance on the relationship between entrepreneurial orientations and business performance of women owned enterprises in North-western States of Nigeria

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Abstract

Purpose: This study aimed to examine the moderating effect of corporate governance on the relationship between entrepreneurial orientation and business performance of women owned enterprise in North-Western states of Nigeria. However, the nature and existence of this potential relationship were found to be mixed, which prompted this study to re-examine the relationship.

Methodology: The data were collected from a field survey of the women owned enterprise in north-western region of Nigeria. A total of 222 questionnaires were returned, but only 210 was usable for data analysis from the target respondents, which consist of women owners/managers of business in the selected SMEs. This study employed the quantitative survey research approach and Partial Least Squares Structural Equation Modelling (PLS-SEM) algorithm, and bootstrap techniques to test the hypotheses.

Results and conclusion: Results obtained support the hypothesis on the direct influence of the Entrepreneurial Orientation and its proxies such as Innovativeness, competitive aggressiveness, autonomy and corporate governance on business performance. Similar results regarding the moderating effects of corporate governance on the relationship between entrepreneurial orientation and business performance were also found. Interestingly, the findings indicated that corporate governance positively moderates the relationship between entrepreneurial orientation and business performance.

Implication of findings: Finally, this study has succeeded in validating the aforementioned conceptualization as well as advancing significant theoretical and practical contributions to the researchers, entrepreneurs and regulatory authorities for further understanding of the influence of entrepreneurial orientation and business performance.

Keywords: Entrepreneurial orientation, Innovativeness, Competitive aggressiveness, Autonomy, Business performance.

1. Introduction

Entrepreneurial orientation is used to explain the mind-set of firms involved in pursuing a new venture and provides a useful framework to investigate entrepreneurial activities and reflects how a firm operates rather than what it does (Lumpkin & Dess, 1996). Moreover, the entrepreneurship space in Nigeria remains a traditionally male dominated territory. Nigerian women entrepreneurs operate in an unfavorable business environment, characterized by various challenges. Despite the crucial role of women entrepreneurs in the economic development of the country, it is however discovered that women entrepreneurs have low business performance when compared to their male counterparts (Idris & Agbim, 2015). Given the current economic challenges facing many countries across the globe, entrepreneurial activity and become a prominent goal for many national governments, because

entrepreneurial activity increases employment opportunities and influences the economy at the regional and national levels (Kosa et al., 2018).

However, there are a large number of women in Nigeria that engages in entrepreneurship business. But the region does not yet exploit them very well to contribute a lot for economic development which led to failure of so many women owned enterprises. Some of the reasons are complete lack of funds, lack of skills/poor skills, lack of motivation, lack of rightful characteristic, poor infrastructure and inadequate access to training, for this might be problems of women entrepreneurs in Small and Medium Scale Enterprises (SMEs) (Ekwochi, 2020). Furthermore, most of the women entrepreneurs do not have the requisite entrepreneurial autonomy and competitive abilities, which are the main requirements for business performance (Olaolu & Obaji, 2020). As a result, most women entrepreneurs are not able to develop and perform better. In today's business environment, training, innovativeness, autonomy, and the ability of the business owner to take well-calculated risks and stay in healthy competitions has the hallmark of a successful business performance (Olaolu & Obaji, 2020). This is because training, innovation, and risks-taking are seen as factors or indices that determine how a business performs.

Similarly, Usman et al., (2025) reported that if the SMEs' level of responsiveness is satisfactory, it will improve their business performance. Furthermore, performance of SMEs in Nigeria is below expectations. It is argued that the contribution of SMEs in Nigeria to the national GDP is poor for numerous reasons. These include inadequate infrastructural/financial support**s** to businesses operating within the various sectors; entrepreneurial and marketing ability; limited application of innovation to operations within the segment; and unfavorable competition from foreign goods and services (Bangudu, 2013; Ndumanya, 2013). This is confirmed by the data on poverty and unemployment rate in Nigeria, which shows that poverty and unemployment have not decreased in recent years. The people living below US$ 1.25 per day rose to 70% in 2023 from 62.8% in 2021 and 54% in 2020. In the same vein, the National Bureau of Statistics (NBS), revealed that Nigeria has the highest unemployment and underemployment rates in Africa, which are estimated at 23.1% and 20.1% respectively and the rising unemployment rate is projected to hit 33.5% by 2020 (National Bureau of Statistics report 2019). It is therefore a worrisome development with Nigeria's ranking as the global poverty capital which has resulted in the related increased prevalence rate of crimes and criminality, not limited to mass murders, insurgency, militancy, armed robbery, kidnappings and drug abuse, among others. As a result, the African Economic Outlook had estimated that 20 million new jobs are required to be created in the continent annually up to 2030 in order to absorb new entrants into the workforce (Ibrahim & Abu, 2020). So, this study aims to examine the moderating effect of corporate governance through accountability on the relationship between three proxies of entrepreneurial orientation, namely innovativeness, competitive aggressiveness, autonomy and business performance of women owned enterprise Nigeria. This study seeks to address the research gap by exploring the challenges that female entrepreneurs face in the context of Nigeria.

Despite the importance of entrepreneurial orientation in poverty reduction, employment creation and stabilizing the economy, many empirical studies concerning the relationship between entrepreneurial orientation and business performance in both developed and developing economies appeared to be mixed, inconsistent, contradicting and coupled with weak findings. For instance, studies of Aliyu et al.,

(2025) Aloulou, (2023) Arabeche et al., (2022) Gupta and Gupta, (2015) Ince et al., (2021) Kropp and Lindsay, (2006) Li et al., (2008) Mohammed and Obeleagu-nzelibe, (2014) Nugroho, (2023) found significant positive relationship between entrepreneurial orientation or its proxies and business performance while significant negative relationship were also discovered in the study of (Crick & Crick, 2023; Nugroho, 2023; Salehe et al., 2024; Sebora et al., 2009). While recently Alam et al., (2022) revealed that autonomy as subcomponent/proxy of entrepreneurial orientation does not exhibit any relationship with business performance. Therefore, the conflicting/mixed findings from previous literature are usually caused by factors like inconsistent operationalization of entrepreneurial orientation variable and its proxies, limited scope, convenience samples, and usually focus mainly on a single strategy or approach of entrepreneurial orientation and business performance.

This study selected its entrepreneurial orientation proxies, i.e. innovativeness, competitive aggressiveness and autonomy to address the aforementioned problems. Similarly, a moderator variable is an independent variable that affects the direction or strength of the relationship between predictor variable and criterion variable, and it can be introduced to the model when there is a weak, inconsistent/contradictory results in findings (Aguinis et al., 2017; Baron & Kenny, 1986; Fairchild & MacKinnon, 2009; Frazier et al., 2004). Furthermore, this study is proposing a framework that selects the most appropriate variables best to address entrepreneurial orientation and business performance problems peculiar to Nigeria, and introducing a moderating variable that will strengthen the inconsistency and weak relationship between entrepreneurial orientation and business performance as suggested (Baron and Kenny, 1986; Fairchild and MacKinnon, 2009). Similarly, this study posits as a primary relationship between entrepreneurial orientation and business performance of women owned enterprise with the moderating variable of corporate governance through accountability.

Conclusively, the effect of entrepreneurial orientation on the performance of women owned enterprises in the North-Western States of Nigeria has not yet been explored. Further, the current study is explorative in approach by adopting the liberal feminist theory, which stated that, once equal access to resources is ensured, gender differences in performance seemingly disappears (Brazel et al., 2009; Carter et al., 1997; Kalleberg & Leicht, 1991). This necessitates the adoption of the path modelling method since it has been recommended that if a study is prediction-oriented, PLS path modelling should be adopted (Hair et al., 2011; Henseler et al., 2009; Hulland, Baumgartner, & Smith, 2017). Additionally, this study adopted both financial and non-financial measurements of business performance (Dikko et al., 2021; Wu et al., 2009). Finally, the outcome of this study shall be of immense importance to academics, regulators, shareholders, and policymakers.

2. Literature review

This section provides justification for the adopted variables in the present study based on the existing literature. The variables under consideration are entrepreneurial orientation as the independent variable with business performance as the dependent variable. Previous literature indicated that the entrepreneurial orientation can be grouped into dimensions: innovativeness, competitive aggressiveness and autonomy (Hughes & Morgan, 2007). Therefore, this study adopts these dimensions in measuring the effect of entrepreneurial orientation. Subsequently, research hypotheses were generated for each variable under consideration. Therefore, in line with the previous relevant literature, the following hypotheses were developed.

The relationship between entrepreneurial orientations and their proxies with business performance.
In studying entrepreneurial orientation and performance, some studies have considered the effect of the individual dimensions as they behave differently, as opined by (Lumpkin & Dess, 1996). They argue that the important dimensions are clear avenues for entrepreneurial success. Using quantitative methods to survey 124 executives from 94 firms, the study found that competitive aggressiveness shows poor relationship with firm performance. Similarly, Loos and Coulthard, (2005) stress that entrepreneurial orientation and all dimensions including two by (Lumpkin & Dess, 1996) impacted on firm performance within the Australian automotive components industry.

Aloulou (2023) investigate the relationship between entrepreneurial orientation dimension on firm performance in a specific context from 225 randomly selected SMEs in Saudi Arabia and the result revealed that there is a significant relationships between entrepreneurial orientation dimensions of innovativeness with firm performance. This may be found among Saudi firms to manifest their entrepreneurial orientation behaviors through innovativeness in enhancing business performance. Likewise, Hughes and Morgan, (2007) examine the individual impact of innovativeness, competitive aggressiveness, and autonomy on performance of the firm. The study reveals that innovativeness has a positive relationship with business performance.

Furthermore, Salehe et al. (2024) investigate the relationship between individual entrepreneurial orientation on firm performance within the context of SMEs using a structured questionnaire to gather data from a sample of 389 entrepreneurs working in the Tanzanian Nile perch fishery in Lake Victoria. PLS-SEM was used to assess the three constructs' direct relationship and the result revealed that innovativeness has a significant direct positive relationship with firm performance. However, recently Aliyu et al., (2025) found a contradictory result on the relationship between innovativeness and firm's performance and revealed that innovativeness does not support this expectation as innovativeness has a significant negative influences on business performance while reported that both competitive aggressiveness and autonomy are statistically significant to business performance. This result also contradict the work of Ibrahim and Abu, (2020) competitiveness aggressiveness was insignificant to business performance and recommended that similar studies in this area should be replicated to validate this result.

Additionally, Patel and D'Souza, (2009) did not find support for innovativeness as a factor that improves performance. Additionally, the study reports no significant relationship between competitive aggressiveness, autonomy to firm performance. In the same vein, Awang *et al.*, (2010) examine the entrepreneurial orientation dimensions as separate components and the study indicates that there is significant differences among all entrepreneurial orientation dimensions in terms of their influence on the firm's performance. In addition, Fairoz *et al.*, (2010) found that all the entrepreneurial orientation dimensions are significantly correlated with market share growth. Similar studies on entrepreneurial orientation, strategy and performance of 117 small firms have shown an effect of the entrepreneurial orientation on firm performance. Positive and significant effects have been reported between innovativeness and performance, while competitive aggressiveness is negatively significant. On the other hand, autonomy has no significant effect on performance (Lechner & Gudmundsson, 2014). A study of logistics firms in Turkey, found out that innovativeness does not significantly influence

performance (Polat & Mutlu, 2012). A contrary findings also indicate innovativeness have positive effects on small business performance (Soininen et al., 2012). A significant positive relationship between entrepreneurial orientation and corporate performance of service firms has been identified, with a strong support that innovativeness plays an imperative role in influencing firm performance (Kraus, 2013). A high level of entrepreneurial orientation among owner-managers of manufacturing SMEs of a western province in Sri Lanka has been reported; however, innovativeness shows high influence on business performance (Wijetunge & Pushpakumari, 2014).

Contrary to studies that reported a linear relationship between entrepreneurial orientation and some of its dimensions with performance, other studies have reported a non-linear relationship. Some studies have shown that the relationship between entrepreneurial orientation and firm performance is not so straight forward. For example, a study of 185 enterprises in northern China reports a U- shaped relationship between entrepreneurial orientation and firm performance. The results shed light that the entrepreneurial orientation and firm performance relationship is not necessarily linear but may be curvilinear (Tang, Tang, Marino, Zhang, & Li, 2008). It can be seen from the discussion overall that many studies report a positive effect of entrepreneurial orientation and its dimensions on performance and some reports otherwise and it can be seen clearly that entrepreneurial orientation dimensions may behave differently when predicting firm performance.

However, the existing literature on the relationship between corporate governance and performance appeared to be mixed or even contradictory in findings, with some results showing a significant positive relationship while some reported a negative relationship and others find no relationship. However, many empirical studies were conducted concerning how corporate governance affects performance. For instance, the following studies reported a significance positive relationship between corporate governance and performance (Hakimi et al., 2018; Haniffa & Hudaib, 2006; Jinarat & Quang, 2003). Other empirical studies also reported a significance negative relationship between corporate governance and performance (Faleye & Krishnan, 2017; Lensink, 2007; Shahwan, 2015; Talavera et al., 2018). In another development, some empirical studies revealed that there is no significance relationship between corporate governance and performance.

Therefore, based on the existing empirical literature discussed above, is expected to examine the relationship between entrepreneurial orientation and its proxies, corporate governance on business performance. As such, the following hypotheses are formulated:

H1: There is a significant positive relationship between innovativeness, and the performance of women owned enterprises in the North-Western States of Nigeria.

H2: There is a significant relationship between competitive aggressiveness, and the performance of women owned enterprises in the North-Western States of Nigeria.

H3: There is a significant relationship between autonomy, and the performance of women owned enterprises in the North-Western States of Nigeria.

H4: There is a significant relationship between entrepreneurial orientation, and the performance of women owned enterprises in the North-Western States of Nigeria.

Corporate governance

The effectiveness of corporate governance mechanisms has become a burning issue globally due to the failure of several giant companies (Salihu et al., 2024). Corporate governance is the processes and systems

where by firms are directed and controlled to align the corporate operations with shareholder value, ethical standards, and regulatory compliance (Chukwuma et al., 2025). According to Rustam et al., (2013), corporate governance as a policy, measures the procedures that could align the interest of both managers and all other stakeholders of a business organization. Moreover, the most recommended and principal of corporate governance mechanism among the researchers is a board of directors (Jinarat and Quang, 2003; Stanwick and Stanwick, 2002). Jinarat and Quang (2003) argue that before a business organization can achieve excellent business performance, it requires the overall commitment of the board of directors to exercise their monitoring function that can translate the corporate governance practice in better organizational performance and it can be done through empirically tested component i.e., accountability. Egbadju (2024) reported that the robustness test indicates corporate governance helped in improving accountability of firms for the period under consideration. However, Baron and Kenny (1986), a moderator variable is an independent variable that affects the direction or strength of the relationship between independent or predictor variable and dependent or criterion variable, and it can be introduced to the model when there is a weak, inconsistent or contradictory results in findings. In addition, Frazier et al., (2004) show that a moderator addresses the issues of 'when' or 'for whom' a predictor/independent variable is more related to an outcome/dependent variable. It was revealed that a moderator effect is an interaction whereby the effect of one variable depends on the level of another variable (Aguinis et al., 2017; Hair et al., 2017). Similarly, Fairchild and MacKinnon (2009) analyzed the moderation model as a test whether the prediction of a dependent variable affects the strength or direction of the relation between a predictor and an outcome by changing, reducing, or enhancing the influence of the predictor:

H5: There is a significant relationship between corporate governance, and the performance of women owned enterprises in the North-Western States of Nigeria.

H6: Does corporate governance moderate the relationship between the entrepreneurial orientation and business performance of women owned enterprises in the North-Western States of Nigeria.

The underpinning theory

The underpinning theory for this study rest on the fact that the factors that would affect business performance of women owned enterprises would be significantly different from male owned enterprises. This argument is anchored on liberal and social feminist theories. Liberal feminist theory is rooted in liberal political philosophy which encompasses basic beliefs in the equality of all beings, and in human beings as essentially rational, self-interest- seeking agents. The liberal feminist theory attributes gender-based differences to the variations in power and opportunity accorded men and women in society, that is, the structural positions women and men occupy in society (Beasley, 1999). Thus, differences in the achievements of men and women are ascribed to the inability of women to realize their full potential because they are denied equal access to opportunities in the labour markets and to resources. This in turn has hindered women from acquiring the skills and capabilities necessary to compete on equal basis with men. According to the liberal feminist theory, once equal access to resources is ensured, gender differences in performance seemingly disappear (Carter et al., 1997).

Overview of research framework

The review of the literature leads to several issues on entrepreneurial orientation and highlighted areas that required to be explored in this study. Based on the literature reviewed and suggestions from several studies, this study has developed a conceptual framework to investigate the moderating effect of corporate governance through accountability on the relationship between entrepreneurial orientations

on the business performance of women enterprises in north-Western States of Nigeria. The research framework has three variables and many proxies, which comprise the moderating variable (corporate governance) independent variable as entrepreneurial orientation (with innovativeness, competitive aggressiveness and autonomy as dimension), then, the dependent variable which is business performance.

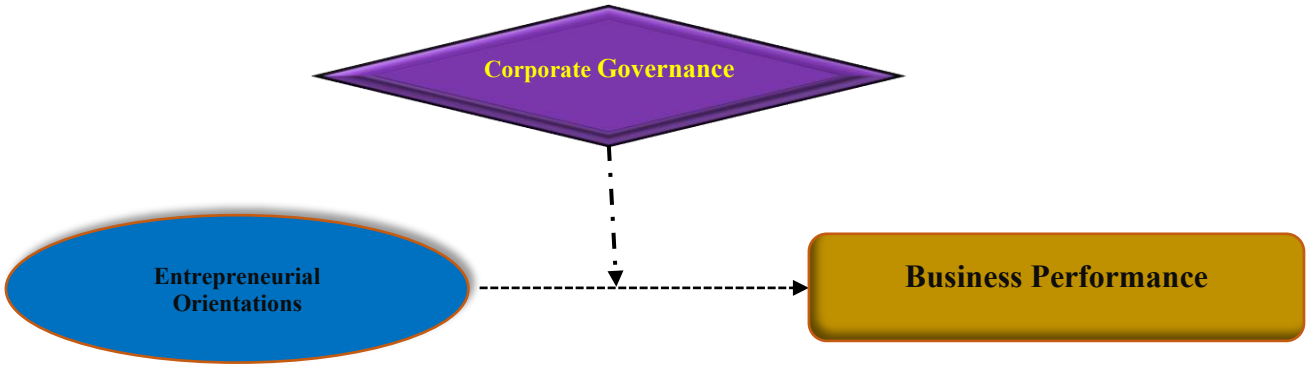

Figure 1. Conceptual research framework.

3. Methodology

Research design

In this study, data was collected using the survey research design. The administration of questionnaires was done directly to the respondents (women owned enterprises) and collected within the same period at the same point in time using the cross-sectional method of data collection. The researchers delivered the questionnaire in person, but insecurity as a result of armed banditry, kidnappings, and communal clashes in some of north-western states of Nigeria like Zamfara and Katsina States, have become major challenges. Some of the questionnaires were provided through email and few from postal address. The questionnaire with cover letter mentioning the clear intention of the research and ensuring the respondents' confidentiality was administered to the respondents of the study.

Sample selection

This study is a quantitative research approach designed to examine the moderating effect of corporate governance on the relationship between entrepreneurial orientation and business performance of women owned enterprise in north-western states of Nigeria. This present study purposely selected women owned enterprises in north-western states of Nigeria, because this region constitutes the largest population in the country and has a considerable portion of SMEs in Nigeria. According to Krejcie and Morgan (1970) this study distributed 234 questionnaires to respondents and received only 222 questionnaires from the responses, out of which 12 were excluded due to missing values. This makes the final sample size of 210 for the data analysis.

Instruments validation

To ensure the validity of the content, the instrument was evaluated by five academic experts and industrial practitioners. The experts provided feedback with respect to the suitability of the concept from the industries and academic perspectives in which they suggested some minor changes in the structure,

layout and sentences of the items. Additionally, a pilot study was conducted on 40 women/managers owned SMEs.

Method of data analysis

This study employed Partial Least Square Structural Equation Modelling (PLS-SEM) software version 3.2 to assess the measurement and structural models. PLS-SEM is an appropriate technique as it simultaneously analyzes multiple relationships among the constructs (Hair et al., 2017). To test the proposed hypotheses, this study used the 5000 bootstrapping technique. PLS-SEM is a non-parametric tool used for small sample sizes, and it does not require the assumption of data normality for analysis (Hair et al., 2014).

Characteristics of the respondents

Descriptive statistics were used to analyses the demographic and organizational variables which consist of six essential items namely: gender, age, educational qualification, business position, working experience and business type. The analysis unit was women own enterprises and managers who were chosen as respondents for this study (see table 1).

Table 1. Demographic of the respondents Profile

Types of Enterprises	Frequency	Percentage %
Gender		
Males	63	30
Females	147	70
Which of the following age do you, fill-in		
18-29	31	14.7
30-39	44	20.9
40-49	109	51.9
50- and above	26	12.3
Highest Educational Qualification obtained		
Secondary School Certificate	0	0
OND/NCE	0	0
Bachelor's Degree/HND	176	89
Post Graduate Degree	23	10.9
Position		
Manager	34	16.2
Owner	176	83
Years of Experience		
Less than 5years	44	20.9
6-10 years	98	40.6
11-15 years	39	18.5
16 and above	29	13.8
Business Types		
Sole Proprietorship	65	30
Partnership	110	52
Limited Company	35	16

Common method variance

To ensure that data is free from common method bias (CMB), this study examined CMB by applying Harman's single factor test as suggested by Hulland, Baumgartner and Smith (2017) where all items in the study were subjected to a principal components factor analysis. The outcome of the factor analysis yielded four factors, explaining a total variance of 40.29%. This factor only explained 40.29% of the variance, which shows that CMB does not exist in the present study since it was less than 50% (Kumar, 2011). All analyses carried out showed that CMB is not a serious problem in this study. Therefore, this study has no problem with CMB, and there is no relationships between variables measured that could be inflated (Podsakoff, Mackenzie and Podsakoff, 2012).

4. Results and discussion

The statistical approach

The choice of this study is driven by the purpose to explore the relationship between the study variables, which concerned exploratory analysis in nature. Smart PLS-SEM was utilized in this exploratory study, and SPSS was also employed in the analysis. The goodness of the model was measured, otherwise known as the measurement model to determine the goodness of the indicators. Reliability is the internal consistency of the data, and in this study, it was assessed through Cronbach's alpha and composite reliability values. The reliability values are shown in Table 2. According to (Hair et al., 2014), reliability is established when the values of Cronbach alpha and composite reliability exceed 0.60 and 0.70. Table 2 depicts that reliability values are above 0.60 and 0.70 Cronbach alpha and composite reliability, thus confirms internal consistency in the data. Furthermore, Table 2 shows the values of average variance extracted (AVE). The values of AVE above 0.50 represent the presence of convergent validity. Convergent validity is the extent to which constructs are related to each other. In this study, convergent validity confirms as the values fall between 0.512 and 0.684, as shown in Table 2

Measurement model

An assessment of a measurement model involves determining individual item's reliability, internal consistency reliability, convergent validity and discriminant validity (Hair et al., 2011; Hair, Sarstedt, Hopkins and Kuppelwieser, 2014; Henseler et al., 2009).

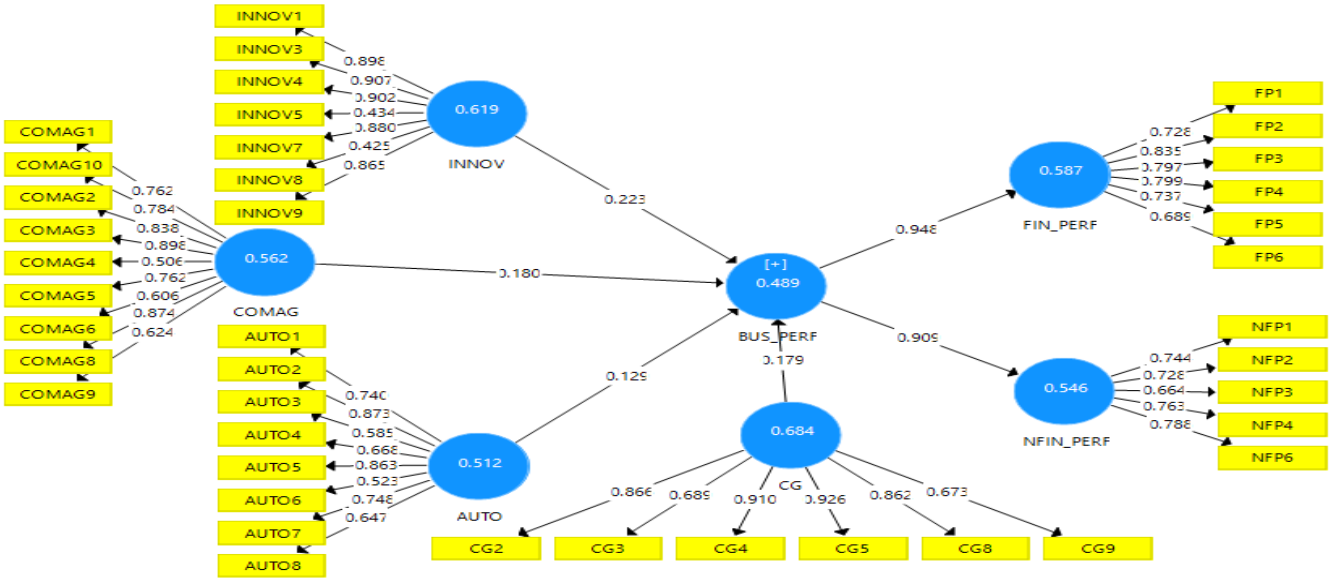

Figure 2. Measurement model.

This study evaluates individual items reliability based on their respective outer loadings and a threshold value ≥ 0.40 (Table 2) (Hulland, 1999; Hair et al., 2014). Nevertheless, indicators with weaker outer loadings of 0.40 or less were carefully considered for deletion (Avkiran, 2018; Hair et al., 2014). However, in some cases, indicators with loadings of between 0.4 and above were retained based on their contribution to the construct's validity (Avkiran and Ringle, 2018).

Table 2. Convergent validity and reliability

Indicators	Construct Standardized loading	Cronbach's Alpha	Composite reliability	Average Variance Extracted (AVE)
Innovativeness		**0.880**	**0.914**	0.619
INNOV1	0.898			
INNOV3	0.907			
INNOV4	0.902			
INNOV5	0.434			
INNOV7	0.880			
INNOV8	0.425			
INNOV9	0.865			
Competitive Aggressiveness		**0.898**	**0.918**	0.562
COMAG1	0.762			
COMAG2	0.838			
COMAG3	0.898			
COMAG4	0.506			
COMAG5	0.762			
COMAG6	0.606			
COMAG8	0.874			
COMAG9	0.624			
COMAG10	0.784			
Autonomy		**0.865**	**0.891**	0.512
AUTO1	0.740			
AUTO2	0.873			
AUTO3	0.585			
AUTO4	0.668			
AUTO5	0.863			
AUTO6	0.523			
AUTO7	0.748			
AUTO8	0.647			
Corporate Governance		**0.904**	**0.928**	0.684
GG2	0.868			
CG3	0.689			
CG4	0.910			
CG5	0.926			
CG8	0.862			
CG9	0.673			
Financial Performance		**0.859**	**0.895**	0.587
FP1	0.728			
FP2	0.835			

FP3	0.797			
FP4	0.799			
FP3	0.737			
FP4	0.689			
Non-Financial Performance		**0.791**	**0.857**	0.546
NFP1	0.911			
NFP2	0.693			
NFP3	0.559			
NFP4	0.902			
NFP6	0.657			

Discriminant validity

Discriminant validity is established when the value of the square root of AVE of each construct is higher than the construct's highest correlation with any other latent construct (Hair et al., 2014; Henseler et al., 2009b). Further, the assessment of discriminant validity was done through two methods proposed by Fornell and Larcker (1981) criterion and Heterotrait–Monotrait (HTMT). Discriminant validity is the extent to which constructions in the study are unrelated to each other. The diagonal values in Table 3 are the square root of AVEs, and they are more significant than their corresponding correlation values Farrell et al. (2008), confirming discriminant validity through Fornell & Larcker's (1981) criterion. Next, the italic values in the bracket are the HTMT values which are below 0.90, confirming discriminant validity (Henseler et al.(2015). See Table 3.

Table 3. Discriminant validity: fornel l –larcker criterion & heterotrait-monotrait ratio (htmt)

	AUTO	BUS_PERF	CG	COMAG	FIN_PERF	INNOV	NFIN_PERF
AUTO	0.715						
BUS_PERF	0.231	0.700					
	(*0.246*)						
CG	0.134	0.274	0.827				
	(*0.146*)	(*0.303*)					
COMAG	0.223	0.301	0.222	0.750			
	(*0.244*)	(*0.324*)	(*0.242*)				
FIN_PERF	0.223	0.948	0.270	0.320	0.766		
	(*0.237*)	(*0.373*)	(*0.306*)	(*0.346*)			
INNOV	0.172	0.317	0.165	0.235	0.307	0.787	
	(*0.223*)	(*0.357*)	(*0.188*)	(*0.273*)	(*0.352*)		
NFIN_PERF	0.205	0.909	0.232	*0.224*	0.728	0.280	0.739
	(*0.236*)	(*0.378*)	(*0.272*)	(*0.266*)	(*0.860*)	(*0.333*)	

Note(s): Bold diagonal values represent the square of AVE, italic values in the brackets are the HTMT values, and the remaining are the correlation among the constructs.

Structural model

The next step was to assess the structural model. This involved evaluating the structural model's predictive abilities and relationships between the constructs. The fundamental criteria for evaluating a structural model in PLS-SEM are the significance of the path coefficients, coefficient determination (R^2), and predictive relevance of the model (Q^2) (Hair et al., 2014). A systematic model analysis of the

structural model was carried out to provide a detailed understanding of the results and to test Hypotheses H_1 to H_6. In addition, a standard bootstrapping procedure with-5,000 bootstrap samples and 210 cases in the original sample was used to assess the significance of the path's coefficients (Hair, Hult, Ringle and Sarstedt, 2017; Henseler et al., 2009). Figure 3 and Table 4 & 5 show the estimate for the full structural model of the current study.

Table 4. Hypotheses testing results (Direct relationship)

Relationship	Path Coefficient	Stand Dev.	T Statistics	P Values	Decision
INNOV -> BUS_PERF	0.223	0.055	4.081	**0.000**	Supported
COMAG -> BUS_PERF	0.180	0.051	3.491	**0.001**	Supported
AUTO -> BUS_PERF	0.129	0.042	3.036	**0.003**	Supported
CG -> BUS_PERF	0.179	0.054	3.319	**0.001**	Supported

Figure 3 focused on the analysis of the first order between the independent variables and the dependent variable (Hypotheses H_1 to H_3, and H_4). In Table 4, the PLS-SEM algorithm gives path coefficient or model relationships among the study constructs, which describes the hypothesized relationship between the constructs. The path coefficient offers standard values greater than zero, indicating a positive relationship between the constructs, while the t-value or p-value suggests the degree of relationship. The results of direct path analysis have been summarized in Table 4. The direct effect results show that innovativeness has positive impact on business performance ($\beta = 0.223$, $p <$ **0.000**, $t = 4.081$), supporting the H_1. The positive influence of competitive aggressiveness innovativeness on business performance has also confirmed ($\beta = 0.180$, $p <$ **0.001**, $t = 3.491$), supporting the H_2. The significant positive impact of autonomy on business performance is confirmed ($\beta = 0.129$, $p <$**0.003**, $t = 3.036$), supporting the H_3. Still on the direct relationship corporate governance has a positive and significant impact on business performance ($\beta = 0.179$, $p <$ **0.001**, $t = 3.319$), providing support to H_4. This study also confirmed that entrepreneurial orientation has a strong positive and significant impact on business performance ($\beta = 0.338$, $p < 0.000$, $t = 6.805$), supporting H_5.

Moreover, this study has used Preacher and Hayes's (2008) Moreover, this study has used (Aguinis et al., (2017), Baron and Kenny, (1986); Fairchild and MacKinnon, (2009), Frazier et al., (2004)) method to analyze moderating effects and 5000 bootstrapping resample has been applied to test the moderating effects. Besides, the results of the indirect effect analysis show that corporate governance moderate the relations positively between the entrepreneurial orientation and business performance ($\beta = 0.140$, $p < 0.004$, $t = 2.920$) respectively, supporting the hypotheses H_6. The results of the moderation analysis have been summarized in Table 5. The outcomes of the study demonstrate the presence of a link between INNOV, COMAG, AUTO, CG and Business performance, which was supported by earlier research hypothesis.

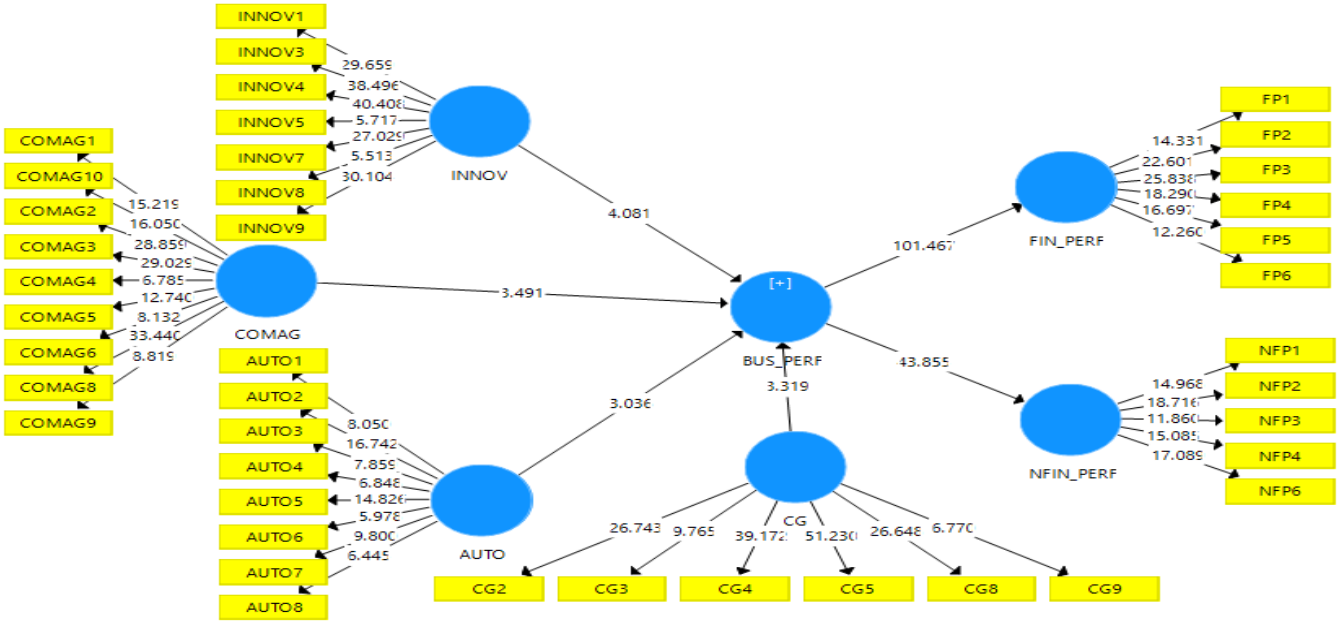

Figure 3. Structural model direct relationship.

As suggested by Hair et al. (2014), higher-order model involves testing second-order structures containing first and second-order levels of components. These types of models are increasingly being used in PLS-SEM, as they contribute to making the path model more parsimonious and create a reduction in model complexity (Duarte and Amaro, 2018). This procedure gives more evidence in support of the theoretical model as indicated in the structural model, and it was performed in line with the suggestions offered by Vinzi, Chin, Henseler and Wang (2010). In Figure 4 below, a second-order reflective was introduced, and analysis of the relationship between the independent variable (entrepreneurial orientation), moderating variable (corporate governance) on the dependent variable (business performance) Hypotheses H_5 and H_6 was carried out. Table shows the details of the results.

Table 5. Results of moderating effects (Indirect relationship)

Relationship	β	Stand Dev.	T Statistics	P Values	Decision
EO -> BUS_PERF	0.338	0.050	6.805	0.000	Supported
EO -> CG-> BUS_PERF	0.140	0.048	2.920	0.004	Supported

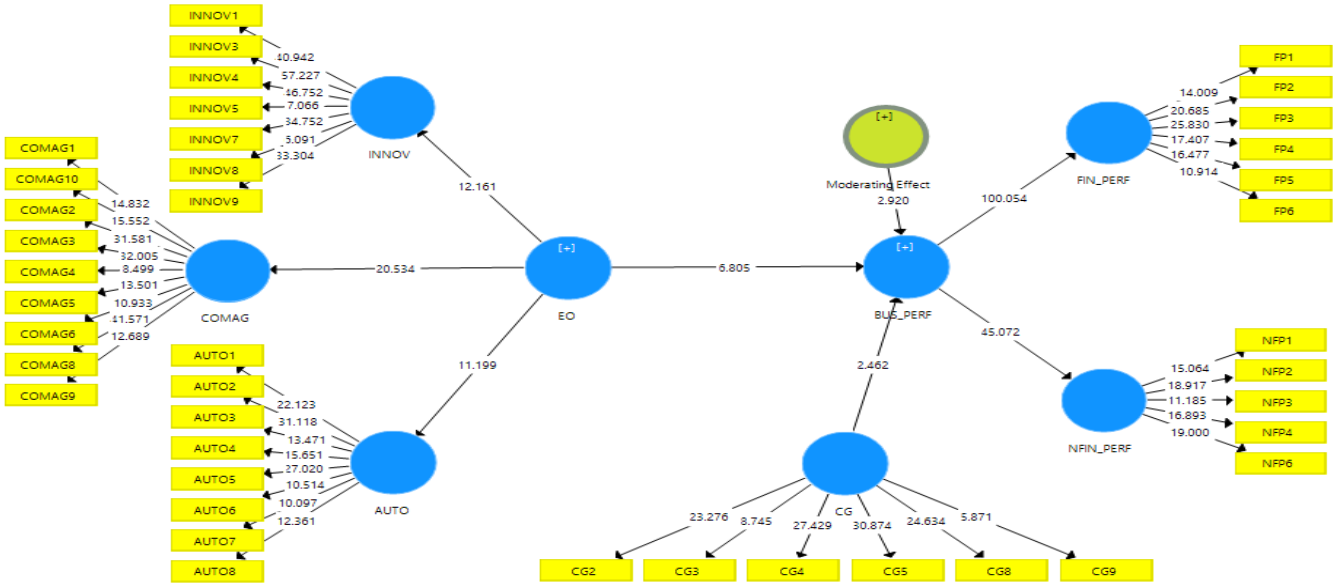

Figure 4. Second order structural relationship.

The fundamental criteria for evaluating a structural model in PLS-SEM are the significance of the path coefficients, coefficient determination (R^2) and predictive relevance (Q^2) (Hair et al., 2014). A systematic model analysis of the structural model was carried out to provide a detailed understanding of the results and to test Hypotheses H_1 to H_6. Model fit was assessed through the value of cross-validated redundancy (Q2) and R-square (R2). The value of Q2 for endogenous constructs indicates predictive relevance. In this study, the value of Q2 is 0.112 which is 11.2%, indicating the model's predictive relevance. This is consistent with Hair et al. (2013) who suggested that if $Q^2 > 0$, the model has predictive relevance, while if $Q^2 < 0$, the model has no predictive ability. Besides, the value of R-square (R2) has been considered for the predictive accuracy of the model. The value of R2 0.204 which is 20.4%, represents the predictive accuracy of the model and depicts total variance explained by exogenous constructs on endogenous constructs. As such, this study's model explains 20.4% of the total variance in business performance suggesting that the two exogenous latent constructs (entrepreneurial orientation and corporate governance) including their dimensions jointly explained 20.4% of the variance of the endogenous latent construct (business performance). Thus, following Falk and Miller (1992), and Chin (1998), this study's endogenous latent construct (dependent variable) showed adequate levels of R-squared values, which were considered as acceptable. Chin (1998) noted that even a model with a low R^2 can still yield excellent goodness of fit.

Conclusively, path coefficients, p-values and t-values have been used in this study to assess the relationship among variables. Path coefficients values near +1 indicate high and strong effects, and p-values less than 0.05 and t values greater than 1.96 refer to the acceptance of hypotheses. In this study, the conceptual model contains six hypotheses for direct relationships and indirect relationships.

5. Conclusion

This study is based on Liberal feminist theory to assess the business performance of women owned enterprises in the north-western states of Nigeria. According to the liberal feminist theory, once equal access to resources is ensured, gender differences in performance seemingly disappear (Carter et al., 1997). In this study, innovativeness, competitive aggressiveness and autonomy are taken as internal

resources of a firm that drives performance. It can be understood from the literature that innovativeness, competitive aggressiveness and autonomy are important dimensions of entrepreneurial orientation (Aliyu et al., 2025; Aloulou, 2023; Arabeche et al., 2022; Gupta & Gupta, 2015; Ince et al., 2021; Kropp & Lindsay, 2006; Lumpkin & Dess, 1996; Mohammed & Obeleagu-nzelibe, 2014; Nugroho, 2023). This study contributed to the literature of entrepreneurial orientation and business performance by incorporating the moderating effect of corporate governance through accountability in the context of women owned enterprises in the North-Western States of Nigeria. The findings of this study reveal that the firm innovativeness, competitive aggressiveness and autonomy approach of entrepreneurial orientation has a positive influence on business performance, which is in line with the findings of (Aloulou, 2023; Meekaewkunchorn et al., 2021; Shehu et al., 2014). In addition to this, the results of the study show that corporate governance acts as a moderator between entrepreneurial orientations and business performance. Moreover, the result of this study also proved that corporate governance through accountability plays an essential moderator between entrepreneurial orientation and business performance. The current study aims to contribute to entrepreneurial orientation literature and Liberal feminist theory. Although researchers have extensively studied entrepreneurial orientation in the context of women owned enterprises, but they have paid less or no attention to the corporate governance through accountability. This study has focused on the impact of three main dimensions of entrepreneurial orientation (innovativeness, competitive aggressiveness and autonomy) on business performance with corporate governance as a moderation. The addition of corporate governance as moderating constructs in the conceptual model is important because it contributes to the existing literature and helps to understand the effects of underlying constructs on business performance.

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