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Effect of Entrepreneurial Alertness on the Growth of Small and Medium Enterprises in North Central Nigeria

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ABSTRACT : *This study empirically examined the effect of entrepreneurial alertness on the growth of Small and medium enterprises in North Central Nigeria. Specifically, the study investigated the impact of scanning and search, association and connections, evaluation and judgment, on the growth of Small and medium enterprises in the region. The study adopted a survey research design and relied on primary data collected through structured questionnaires. The population of the study comprised 13,378 medium enterprises across the North Central states and the Federal Capital Territory, from which a sample of 388 owners and managers was selected using proportionate stratified random sampling. Data were analyzed using descriptive and inferential statistics. The hypotheses were tested using Partial Least Square Structural Equation Modelling with the aid of Smart PLS 4 at a 5 percent significance level. The findings revealed that scanning and search have a positive and significant effect on the growth of small and medium enterprises in North Central Nigeria ($\beta = 0.456$, $t = 6.251$, $p = 0.000 < 0.05$). Association and connections also exhibited a positive and significant effect on enterprise growth ($\beta = 0.323$, $t = 4.121$, $p = 0.031 < 0.05$). However, evaluation and judgment showed a negative but significant effect on growth ($\beta = -0.311$, $t = -3.687$, $p = 0.003 < 0.05$). Based on these findings, the study recommended that entrepreneurs and policy makers should strengthen mechanisms that promote environmental scanning and market information access in order to improve opportunity recognition. Business development institutions should also support networking platforms that enhance association and connections among entrepreneurs. Training programs should emphasize balanced decision making to avoid excessive evaluation that delays opportunity exploitation. The study contributes to knowledge by providing empirical evidence on the role of entrepreneurial alertness as a key driver of enterprise growth in emerging economies.*

Keywords: *Entrepreneurial Alertness, Scanning and Search, Associations and Connections, Evaluation and Judgement, Growth of Small and medium enterprises, North Central Nigeria.*

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1. Introduction

Small and Medium Enterprises are crucial to national economies across the world, serving as engines of innovation, job creation, and economic resilience. In Nigeria, and particularly in the North Central region, medium enterprises play a central role in providing employment, enhancing income generation, and driving community-level development. However, despite their immense potential, many Small and Medium Enterprises continue to grapple with limited growth trajectories due to constraints such as poor access to finance, inadequate infrastructure, low innovation, and weak institutional support. In such a dynamic and often unpredictable economic environment, the capability to and act upon" emerging opportunities becomes a key factor necessary

for survival and growth. This calls attention to the issue of entrepreneurial alertness, which encapsulates the cognitive capacity of entrepreneurs to recognize and exploit business opportunities before competitors do.

Growth of medium enterprises, in this study, is defined as measurable improvement in firm performance indicators such as market expansion, competitive advantage and brand expansion over time (Zainol *et al*., 2021; Boso *et al*., 2019). Small and Medium Enterprises play a pivotal role in national economies, particularly in developing countries like Nigeria, by fostering innovation, reducing unemployment, and stimulating grassroots economic development (Organisation of Economic Cooperation and Development, 2020). However, SME growth is constrained by limited access to finance, poor infrastructure, and weak institutional framework. Despite these challenges, the integration of entrepreneurial alertness into business decision-making has proven to significantly enhance small and medium enterprises performance across various contexts, including Malaysia, South Africa, and Ghana (Zainol *et al.,* 2021; Boso *et al.,* 2019).

Entrepreneurial alertness, as conceptualized in this study, it refers to the cognitive ability of individuals to scan, recognize, and act upon business opportunities in uncertain or dynamic environments before competitors do. It involves three core dimensions: scanning and searching for new information, connecting seemingly unrelated market cues, and evaluating potential opportunities (Ogunbiyi and Onuocha, 2023; Tang *et al.*, 2022). This alertness empowers entrepreneurs to detect environmental shifts and emerging demands that others may overlook, thereby facilitating strategic adaptability, early market entry, and innovation (Roundy *et al.,* 2018). Entrepreneurs with heightened alertness are better positioned to respond proactively to these challenges by adjusting their offerings, leveraging informal networks, and identifying underserved market segments. Globally, entrepreneurial alertness has been on the rise acknowledged as a foundational construct in entrepreneurship research and practice. It reflects an individual's preparedness and sensitivity to changes in the environment, enabling them to detect changes, gaps, or emerging demands that others may overlook (Tang *et al.,* 2022). Countries with robust medium enterprise growth, such as the United States, Germany, and South Korea, they often report high degree of entrepreneurial alertness among their business owners as a cognitive capability that enhances opportunity recognition, early market entry, and innovation performance which in turn contributes to SMEs' adaptability and competitive performance in dynamic markets (Lew et al., 2022; Montiel-Campos, 2023; OECD 2025). Entrepreneurial alertness in the United States has been a key driver of SME growth, leveraging its high trust in entrepreneurship and digital ecosystem. The Global Entrepreneurship Monitor (GEM) reports that the U.S. consistently ranks high in nascent entrepreneurial activity about 12.8% compared to 5–6% in European countries suggesting a conducive environment where alert individuals quickly perceive and act on opportunities (Mason and Brown, 2019). Studies in the U.S. also indicate that alertness, when combined with robust broadband infrastructure and access to venture capital, enhances SME innovation and expansion (Chen *et al.,* 2023). Entrepreneurs in the U.S. convert environmental scanning and opportunity recognition into new services, market entry, and scalable business models fueling both job creation and GDP growth.

In the United Kingdom, entrepreneurial alertness has supported the growth of SMEs' especially in the post-pandemic period, despite challenges such as fear of failure (Global Entrepreneurship Monitor, 2024). France demonstrates how institutional support systems such as incubators and startup ecosystems can enhance the effectiveness of alertness in driving enterprise growth (Spigel and Harrison, 2018; Stam and van de Ven, 2021). In contrast, countries with weaker institutional frameworks, such as Russia, show lower levels of entrepreneurial alertness and slower SME growth (OECD, 2020). Across Asia, particularly in China and India, entrepreneurial alertness has facilitated rapid expansion of medium enterprises through innovation and responsiveness to market changes (Nguyen et al., 2019; Yuan et al., 2021). In emerging economies like Nigeria, entrepreneurial alertness remains underexplored despite its potential to enhance enterprise performance. The Nigerian business environment is characterized by volatility, policy inconsistency, inflationary pressures, and infrastructural deficits. These conditions require entrepreneurs to remain highly alert to changes in the market and policy environment. Entrepreneurs who can effectively scan for opportunities, adapt to disruptions, and leverage available resources are more likely to achieve sustained growth (Nwachukwu and Osemene, 2020). Conversely, low levels of alertness often result in missed opportunities and business stagnation.

Empirical studies provide support for the role of entrepreneurial alertness in enhancing enterprise growth. Evidence from Malaysia indicates that firms with higher alertness levels achieve improved market responsiveness

and revenue performance (Zainol et al., 2021). In Ghana, entrepreneurial alertness enhances innovation and business expansion (Boso et al., 2019). Studies in South Africa also link alertness to adaptability and innovation in business models (Urban, 2017; Lew et al., 2022). These findings suggest that entrepreneurial alertness is a critical determinant of enterprise success across diverse economic contexts.

1.2 Statement of Problem

Despite growing global evidence, limited studies have examined the effect of entrepreneurial alertness on the growth of SMEs in Nigeria, particularly in the North Central region. This region presents unique socio-economic conditions, including a mix of rural and urban markets, infrastructure deficits, and security challenges. These factors increase uncertainty and make opportunity recognition more critical for business survival and growth. Understanding how entrepreneurial alertness influences enterprise growth in this context is essential for developing targeted policies and business strategies.

1.3 Objective of the Study

The main objective of this study is to examine the effect of entrepreneurial alertness on the growth of small and medium enterprises in North Central Nigeria. The specific objectives of this study are to:

i. examine the effect of scanning and search on the growth of small and medium enterprises in North Central Nigeria;
ii. analyse the effect of association and connections on the growth of small and medium enterprises in North Central Nigeria;
iii. determine the effect of evaluation and judgment on the growth of small and medium enterprises in North Central Nigeria;

Consequently, the following research hypotheses were tested:

H_{o1}: Scanning and search have no significant effect on the growth of SMEs in North Central Nigeria.
H_{o2}: Association and connections have no significant effect on the growth of SMEs' in North Central Nigeria.
H_{o3}: Evaluation and judgment have no significant effect on the growth of SMEs in North Central Nigeria.

The study provides value across key stakeholder groups. It deepens academic understanding of how entrepreneurial alertness drives the growth of SMEs and strengthens teaching and research in entrepreneurship and small business development. It offers policymakers practical insight to design targeted interventions such as training programs and funding schemes that support opportunity recognition and enterprise expansion. It also supplies a strong empirical base for researchers to extend studies on entrepreneurial behavior and regional development, while giving business owners clear guidance on how alert decision making can improve performance and growth outcomes in North Central Nigeria. The remaining part of the study is structured as literature review, methodology, results and discussions, as well as conclusion and recommendations.

2.0 Literature Review

This section focuses on the theoretical framework, conceptual framework and review of empirical studies.

2.1 Theoretical Framework

The study is based on two theories. These include: Kirzner's Discovery Theory of entrepreneurship and Resource-Based View (RBV) Theory.

2.1.1 Kirzner's Discovery Theory of Entrepreneurship

Kirzner's Discovery Theory of Entrepreneurship, explains entrepreneurship as a process driven by alertness to previously unnoticed opportunities. Entrepreneurs do not mainly create opportunities but discover them through keen awareness of market gaps, price differences, and unmet needs (Kirzner, 1973; 1999). This alertness is often intuitive and arises from exposure to incomplete information, enabling individuals to identify and exploit profit opportunities that already exist due to changes in technology, policy, or consumer preferences. The theory views entrepreneurs as arbitrageurs who move resources to more productive uses, helping markets move toward equilibrium. It also assumes that opportunities are objective and exist independently of the entrepreneur, waiting to be discovered by those with superior perceptive ability (Shane and Venkataraman, 2000; Alvarez and Barney, 2009). The theory highlights alertness, information processing, and opportunity recognition as key drivers of

entrepreneurial success and provides a strong basis for understanding how entrepreneurial alertness can influence the growth of SMEs.

2.1.2 Resource-Based View (RBV) Theory

The Resource-Based View (RBV), introduced by Birger Wernerfelt, explains firm success through the possession and use of internal resources that are valuable, rare, inimitable, and non-substitutable (VRIN). These resources include financial, human, and social capital, as well as intangible assets such as knowledge and skills (Barney, 1991; 2001). In entrepreneurship, RBV extends to cognitive abilities, where entrepreneurial alertness is treated as a strategic resource that enhances opportunity recognition and exploitation (Alvarez and Busenitz, 2001). Differences in resource ownership and perception explain why some entrepreneurs identify and act on opportunities more effectively than others (Shane and Venkataraman, 2000).

The theory also shows that access to resources determines the ability to transform opportunities into business growth. Financial capital supports venture creation, social networks enable opportunity exploitation, and human capital improves decision making and innovation (Aldrich, 1999; Davidson and Honing, 2003). Despite criticisms such as overemphasis on internal factors and limited attention to dynamic environments, RBV remains relevant. It highlights how entrepreneurial alertness, as a cognitive resource, shapes how entrepreneurs evaluate and deploy resources, thereby influencing the growth of SMEs.

2.2 Conceptual Framework

This section covers a review of literature on concepts of entrepreneurial alertness and growth of medium enterprises including their corresponding dimensions and relationships.

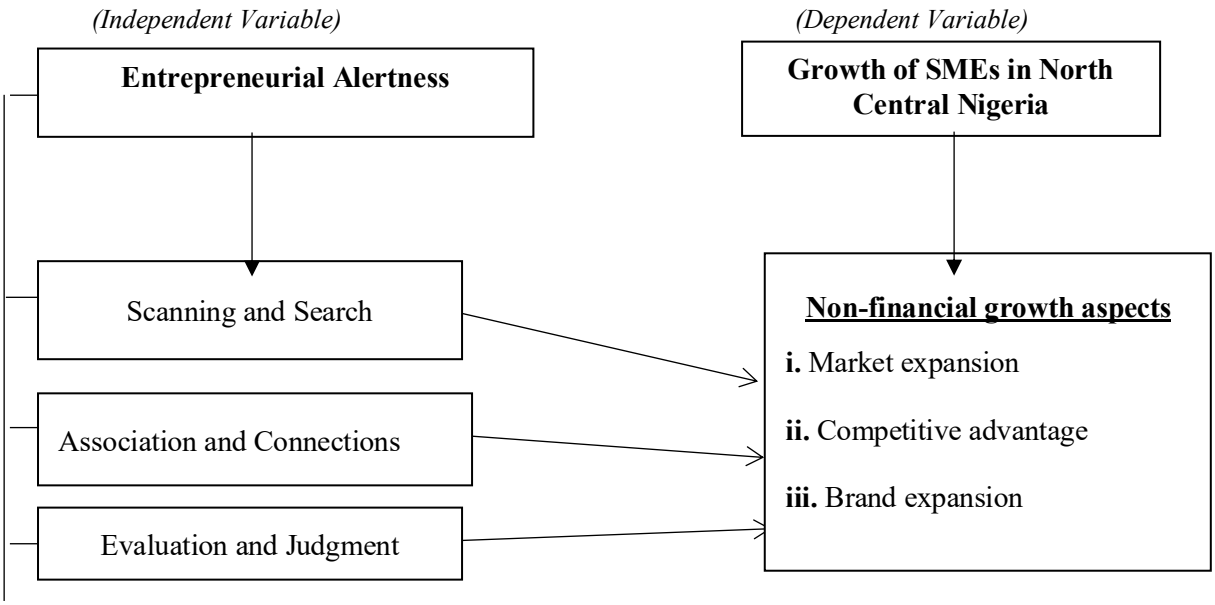


Figure 1: Conceptual Framework of Entrepreneurial Alertness and Growth of Medium Enterprises
Source: Researcher's Compilation, 2026.

2.2.1 Concept of Entrepreneurial Alertness

Entrepreneurial alertness has been defined in various ways by contemporary scholars, reflecting its cognitive and behavioral complexity. Kadile and Biraglia (2022) describe it as an individual's ability to gather, transmit, and select information that leads to potential business opportunities and profits. Tang *et al*. (2021) emphasize entrepreneurial alertness as the capacity to identify business opportunities that others may overlook, highlighting its impact in opportunity recognition. Nsereko *et al.* (2022) view entrepreneurial alertness as a cognitive disposition shaped by personal values, beliefs, personality traits, and different forms of capital such as human, social, and financial that enables individuals to interpret elements of their environment as entrepreneurial opportunities.

Entrepreneurial alertness is a person's ability to identify and respond to changes in the environment and recognise opportunities that others miss (Ike 2025). Alertness supports the capacity of a firm to adapt resources, meet client needs, and perform under environmental change (Mahamotse and Msimango-Galawe 2024). Alert individuals can scan information, associate data, and make judgments that improve decision making in dynamic contexts (Aliabadi et al. 2024). Firms with high alertness launch new products and adjust operations quickly when markets shift (Karami 2025). Alertness also helps organisations manage change in product mix, delivery schedules, and customer expectations effectively (Pidduck and Clark 2025).

Entrepreneurial alertness enables an entrepreneur to identify and exploit opportunities ahead of others and exploiting opportunities will lead to entrepreneurial profit (Lanivich *et al*. (2025). Alertness denotes a "state of mind" that is always open to spotting opportunities Mahamotse and Msimango-Galawe (2024) contend that alert entrepreneurs are able to look for changes in the business environment, identify and optimise opportunities. Lanivich *et al* (2022) asserts that alertness is the ability of an entrepreneur to exploit entrepreneurial opportunities and offer new products or services to the market. Montiel-Campos (2023) submitted that alertness can add value to a business because it assists entrepreneurs to recognise trends and opportunities that others overlooked. Arguably, entrepreneurs may recognize an opportunity in their business environment, but profitability can only be achieved when they act to leverage the opportunity before competitors (Shane & Venkataraman, 2000). Roundy *et al.* (2017) opined that alert entrepreneur decision making process can influence performance. Entrepreneurs in Ghana may hardly spot and leverage opportunities because of a low level of entrepreneurial alertness (Adomako *et al.,* 2021). In Ghana, Adomako *et al*. (2021) found that alertness and networking capabilities explain the performance of new ventures in Ghana. Arguably, entrepreneurial alertness through sensing and exploiting entrepreneurial opportunities can influence micro firm profitability.

Tang *et al*. (2021) emphasize entrepreneurial alertness as the capacity to identify business opportunities that others may overlook, highlighting its role in opportunity recognition. Tang *et al.* (2012) identified individual activities that constitute the entrepreneurial alertness process, these are: (1) scanning and search; (2) association and connection; and (3) evaluation and judgment. Scanning and search refer to continually scanning the environment to identify information or changes that have gone unobserved by some individuals. While association and connection relate to gathering information of different qualities and using that knowledge to build new alternatives (Baron, 2006; Tang *et al*. 2012). evaluation and judgment are concerned with how individuals making evaluations and judgments about changes or new information and deciding whether these will lead to a potential profit opportunity.

2.2.2 Dimensions of Entrepreneurial Alertness

2.2.2.1 Scanning and Search

Alert scanning and search allow entrepreneurs to be persistent and unconventional in their attempts to investigate new ideas (Mahamotse and Msimango-Galawe 2024). This dimension of alertness assists entrepreneurs in building a vast array of domain-relevant information. The information searched constitutes the individual's sensory store, which provides brief storage for information in its original form (Reed, 2004). Such a sensory store enhances the development of an individual's knowledge base: both tacit and explicit (Lanivich *et al*., 2022). Tacit knowledge is acquired during one's experience in a particular domain and often non-codified (Dimov and Shepherd, 2005). Explicit knowledge refers to knowledge and information which is external to the individual and can be easily shared with others. Both tacit and explicit knowledge facilitate the integration and accumulation of new knowledge as well as adapting to new situations (Kadile and Biraglia, 2022). Scanning and search also can happen when the entrepreneur starts to look for answers to a specific question. Since no systematic strategy is deployed an entrepreneur will typically search for multiple possibilities in the relevant places.

The scanning and search dimension helps lay the foundation for developing cognitive frameworks (i.e., prototypes and schemas that reflect an individual's knowledge and beliefs about the external world). Such cognitive frameworks represent the cumulative experience, learning, and meaning an individual has constructed about the specific domain. They are essential for processing and utilizing stored information and knowledge. Because the content and structure of schemas for a specific domain are idiosyncratic (Kadile and Biraglia, 2022), entrepreneurs

with more extensive scanning and search will have a wider range of knowledge and information, which can benefit them in attaining expert performance in enhanced alertness to business opportunities.

2.2.2.2 Association and Connections

Alert association and connection focuses on receiving new information, creativity, and making extensions in logic. It accounts for how information is applied or extended. Association allows an individual to consider multiple options and possibilities and to make unique connections. Rather than minimizing distractions and focusing on the relevant details of multiple pieces of information, association enables individuals to connect to the big picture so that distant and unprecedented connections can be made (Lehrer, 2008).

Social cognition theory suggests that the calculation of covariation and the strongly reappearing traces or responses are related and consist of multiple steps (Kadile and Biraglia, 2022). First, individuals must seek understanding of what data are relevant to assess covariation. Data on multiple sides of the issue are needed for the connection. Second, data are classified into types of evidence such as positive or negative. Positive data fitting expectations are usually more quickly and easily incorporated into the inference model than negative data. Third, individuals recall the evidence and estimate the frequency of each type of evidence. The recalling confirms some data and disconfirms other. Finally, there is the combining of the evidence into a form, often in various nonlinear or non-sequential combinations. These cognitive associations of present information depend heavily on whether individuals have a prior expectation or experience about the relationship between the two variables.

These four aspects of covariation enable individuals, entrepreneurs in this case, to get an informed picture before making an evaluation by keying on specific pieces of information. If scanning and search can be passive or active, association and connection of knowledge into potentially viable ventures is proactive (Lanivich *et al.* 2022). This is accomplished by deliberate manipulation of information (Araujo *et al.* 2023) such as adding, deleting, or interpreting the same information in a different manner. Whenever something unusual or unexpected is detected, association allows entrepreneurs to change their existing schema to accommodate non-matching information (Ashraf *et al.* 2024). In essence, the association and connection dimension of alertness allows individuals to move out of the routine track and modify the categories of their existing means-ends interpretation framework.

Association and connection also change the character of information through bisociation, the sudden interlocking of two or more previously unrelated matrices of information or thoughts (Aliabadi, *et al.*, 2024). Association is more likely to happen when the brain wanders (i.e., when entrepreneurs are engaged in "unconscious work" or "mental rambles," because too much concentration can actually diminish creative connections) (Lehrer, 2008). Although relaxing the brain enhances association and connection, it does not necessarily mean that such cognitive processes cannot be improved via effortful activities. Engaging in deliberate practice can help individuals acquire expert performance by promoting entrepreneurs' ability to connect the dots, think outside the box, and perceive links between seemingly unrelated events.

Once dots are connected, individuals may need to scan and search the environment again to further clarify the picture or to explore the usefulness of the newly-connected information. One is unlikely to go from scanning and search to making judgments about the potentiality of the new connections. Rather, the newly-sought information has to be interpreted and perhaps considered for more associations and connections. Thus, we suggest that scanning and search involves a recursive relationship with association and connection as a search may often trigger additional associations and ideas.

2.2.2.3 Evaluation and Judgment

The evaluation and judgment dimension of entrepreneurial alertness suggests that once entrepreneurs recognize one or more potential opportunities, they assess them based on various factors. This includes examining the potential of each opportunity to generate value whether economic, social, or a combination of both and considering whether they have the capability and resources to successfully pursue the opportunity (McMullen and Shepherd, 2006). An important part of this evaluation also involves distinguishing between genuine opportunities and false signals those that seem promising at first glance but lack real substance (Aliabadi *et al.*, 2024). When multiple opportunities are present, entrepreneurs must prioritize by selecting the one with the highest potential to deliver value. This decision is critical, especially given that entrepreneurs typically operate with limited resources and must commit to exploiting only the most promising opportunity.

In assessing and estimating if an opportunity arises from new information, an entrepreneur exercises judgment (McMullen and Shepherd, 2006) that involves two stages: (1) attention and third-person opportunity; and (2) evaluation and first-person opportunity (McMullen and Shepherd, 2006). The first stage occurs when an individual believes that a potential opportunity exists for someone (i.e., third-person opportunity). It may not represent an opportunity for everyone, but only for those with the right qualities. At the second stage, the third-person opportunity activates another evaluation process when the entrepreneur decides if it is an opportunity for him or her (i.e., first-person opportunity). In essence, believing that a third-person opportunity exists does not necessarily mean that one believes one possesses the right combination of knowledge and motivation to exploit it. If a prospective entrepreneur thinks that the opportunity may be positive, s/he will likely assess his/her own willingness to bear the uncertainties, and decide whether s/he will exploit the opportunity by engaging in entrepreneurial action. McMullen and Shepherd (2006) posit that Kirzner's theory of alertness addresses the attention stage of evaluation and focuses on judging the new changes, shifts, or information and deciding if they would reflect a business opportunity with profit potentials. Note that the evaluation here does not entail the actual launching and capitalizing on the opportunity, only whether an opportunity exists.

2.2.3 Small and Medium Enterprise Growth

Generally, the growth of an enterprise has been extensively defined and examined in contemporary academic literature, often capturing a range of dimensions including financial performance, organizational structure, and operational expansion. Nakku *et al*. (2019) describe small and medium enterprise growth as an enhancement in firm performance reflected through various indicators such as increased revenue, expansion of customer base, enlarged market share, and growth in employee numbers. The authors further establish a connection between growth and entrepreneurial orientation, contending that enterprises exhibiting greater levels of innovation, proactiveness, and willingness to take risks are more inclined to experience long-term growth trajectories. Likewise, Dvouletý *et al*. (2020) characterize small and medium enterprise growth as a quantifiable escalation in the size, productivity, and innovative capacity of a firm, which can be influenced by targeted public policy measures including financial grants, capacity-building programs, and infrastructural support. Their conceptualization of growth emphasizes the importance of tracking both input indicators such as external funding and resource allocation and output outcomes such as increased revenues and profitability over a sustained period.

The conceptualization of growth among Small and medium enterprises has traditionally emphasized financial metrics and operational expansion, but contemporary academic discourse increasingly recognizes that sustainable enterprise development encompasses broader non-financial dimensions that collectively determine long-term viability and competitive positioning. Small and medium enterprise distinguished from their smaller counterparts by more established organizational structures, greater resource endowments, and enhanced market presence; require a more nuanced understanding of growth that extends beyond conventional financial indicators to capture the qualitative transformations that underpin enduring success (Achtenhagen *et al.*, 2010; Davidsson *et al.*, 2006). While financial performance remains relevant, the growth of small and medium enterprise is more comprehensively understood through dimensions that reflect their relational capital, operational excellence, market positioning, and human resource development, all of which interact to create the foundation for sustained competitive advantage and organizational resilience in increasingly dynamic business environments (Nakku *et al.*, 2019; Ogundipe *et al.*, 2023).

2.2.4 Nexus between Entrepreneurial Alertness and Growth of Small and Medium Enterprise

(i) Scanning/Search and Growth of Small and Medium Enterprise

The relationship between scanning/search and the growth of small and medium enterprise in North Central Nigeria is a pivotal aspect for understanding how businesses expand and thrive in this region. This connection underscores how entrepreneurs' proactive efforts in gathering and analyzing information directly contribute to the success and expansion of their enterprises. Scanning and search activities essentially refer to the systematic process of collecting and interpreting data about the external environment, including identifying opportunities and threats, understanding market trends, and keeping a close watch on competitors (Robinson and Simmons, 2018). For Small and medium enterprise in North Central Nigeria, navigating the often-unpredictable business landscape

demands a robust approach to information gathering. This active engagement with their surroundings is intrinsically linked to their ability to achieve sustainable growth.

At its core, entrepreneurial alertness forms the foundation of effective scanning and search. Alertness, defined as the capacity to notice and act on opportunities that others might overlook (Karami, 2025), drives entrepreneurs to engage in these information-seeking behaviors. An alert entrepreneur in North Central Nigeria, through diligent scanning, can uncover emerging market needs, identify underutilized resources, or detect shifts in consumer preferences that present new business avenues. Scanning isn't just about collecting data; it's about interpreting that data to recognize actionable opportunities. For example, an enterprise owner who actively scans agricultural reports might identify a growing demand for organic produce, prompting them to adapt their farming practices or supply chain to capitalize on this trend. This direct translation of environmental insights into new business strategies is a key driver of growth (Pirhadi *et al.,* 2023).

Effective scanning also provides medium enterprises with the necessary intelligence to formulate sound business strategies, enabling informed strategic decision-making and adaptation. Studies emphasize that environmental scanning is a foundational topic in strategic management and a precursor to strategic change (Ben-Menahem *et al.,* 2013; Sharma and Yang, 2015). While some medium enterprises in Nigeria might engage in more informal and reactive scanning, those that adopt a proactive and systematic approach are better positioned for growth. Proactive scanning enables medium enterprises to anticipate challenges and opportunities rather than merely reacting to them, which is crucial for survival and expansion in a competitive environment (Ndila and Moose, 2025). This forward-looking stance, fueled by thorough scanning, can lead to increased market share and improved overall performance (Oluwaremi *et al.,* 2016).

(ii) Association/Connections and Growth of Small and Medium Enterprise

The association/connections dimension of entrepreneurial alertness is a critical cognitive capability that significantly influences the growth of small and medium enterprises particularly within the socio-economically diverse landscape of North Central Nigeria. This dimension refers to an entrepreneur's ability to link disparate market signals, trends, and pieces of information to uncover hidden or emerging opportunities. According to Alabi and Ogidi (2023), SMEs in Plateau State that exhibited a high degree of opportunity connectedness an outcome of associative alertness demonstrated enhanced growth performance. In addition to internal cognitive capacity, the role of external associative networks cannot be overstated. Entrepreneurs who build strategic connections whether through formal industry associations or informal community ties often enjoy improved access to critical resources, market intelligence, and collaborative platforms that stimulate business growth. Aladejebi (2020), in a study conducted among small and medium enterprise in Lagos, observed that strong participation in entrepreneurial networks significantly enhanced firm performance by fostering the flow of information and reciprocal support. This networked interaction supports the associative mechanism of entrepreneurial alertness, allowing entrepreneurs to detect patterns across fragmented data, identify complementary resources, and construct value-creating relationships. Such networks are especially valuable in under-resourced regions like North Central Nigeria, where informal institutions often fill the gap left by formal support systems.

(iii) Evaluation/Judgment and Growth of Small and Medium Enterprise

The relationship between evaluation/judgment and the growth of small and medium enterprise is a critical aspect of entrepreneurial success, building upon the insights gained from scanning and searching. While information gathering is essential, an entrepreneur's ability to critically evaluate and make sound judgments based on that information is what truly translates data into actionable strategies for growth. Evaluation involves assessing the relevance, accuracy, and potential impact of the information gathered through scanning and search, while judgment is the process of making well-reasoned decisions based on this evaluation. For instance, an entrepreneur might identify a demand for a new agricultural product in a specific local market through their scanning efforts. However, their evaluation would involve assessing the availability of raw materials, the cost of production, potential competition, and the logistical challenges of reaching that market. Sound judgment would then dictate whether to pursue this opportunity, scale it, or pivot to a different approach. The quality of this evaluative process directly impacts resource allocation and strategic direction, which are vital for growth (Ike, 2024; Karami, 2025)

2.3 Review of Related Empirical Literature

Farani *et al*. (2026) examined the relationship between prior knowledge, entrepreneurial alertness, and opportunity recognition among rural women engaged in sustainable tourism in Iran. The study adopted a cross-sectional survey design, employing validated measurement scales and analyzing the data using partial least squares structural equation modeling (PLS-SEM) to test the proposed relationships among the variables. The findings reveal that prior knowledge has a significant positive effect on entrepreneurial alertness. In addition, entrepreneurial alertness is found to be a strong predictor of opportunity recognition. The mediation results further demonstrate that entrepreneurial alertness fully mediates the relationship between prior knowledge and opportunity recognition, indicating that prior knowledge influences opportunity recognition primarily through enhanced alertness. Overall, the results, which align with alertness theory and absorptive capacity perspectives, highlight the importance of domain-specific experience in shaping cognitive processes such as scanning, interpretation, and information processing. These processes, in turn, facilitate opportunity recognition, particularly in resource-constrained rural environments where access to information and opportunities may be limited.

Troise *et al.* (2026) examine the impact of entrepreneurial alertness (EA) on three factors, namely digital platform capability (DPC), organisational agility (OA) and business model innovation (BMI); in United Kingdom. The adopted the PLS-SEM approach to test hypotheses and the results support them, in fact, all with significant and positive effects. The findings highlighted a set of capabilities and factors helping YICs to deal with uncertain and changing environments and to achieve a higher level of competitiveness and performance.

Ike *et al.* (2025) examine the mediating role of entrepreneurial alertness in the relationship between innovativeness, proactive personality, and entrepreneurial intention among undergraduate students in southeast Nigeria. A total of 1657 undergraduates (male = 976; female = 681) were recruited from different universities in southeast Nigeria using snowball sampling. Self-reported measures of the entrepreneurial intention questionnaire, individual innovativeness scale, proactive personality scale, and entrepreneurial alert Scale were used for the data collection. The Hayes Process Macro for SPSS Model 4, version 26 was used for data analysis. The results showed that innovativeness, proactive personality, and entrepreneurial alertness were positively associated with entrepreneurial intention respectively. In addition, entrepreneurial alertness significantly mediated the relationship between proactive personality and entrepreneurial intention among undergraduate, but did not on innovativeness.

Maymand and Rabbanizade (2025) examine the impact of entrepreneurial alertness on international performance, considering entrepreneurial learning as a mediating variable and domestic market dynamics as a moderating variable within the State Livestock Affairs Logistics Company in Iran. The research was descriptive-survey in terms of methodology. A questionnaire was used to collect data from 204 managers of the company, selected using Cochran's formula. Finally, path analysis was employed to test the research hypotheses. For data analysis, SPSS and Lisrel software were utilized. According to the results, the components of entrepreneurial alertness, as independent variables, significantly influence the international performance of the Company when considering entrepreneurial learning as a mediating variable. The direct impact of these variables on international performance is positive and significant Moreover; the study confirmed the moderating effect of domestic market dynamism on the relationship between entrepreneurial learning and the international performance of the company.

Lanivich *et al*. (2025) examine entrepreneurial alertness: A mechanism for innovation and growth in an emerging economy in Pakistan. The study draws from the conservation of resources theory to develop and test a model on the processes through which resiliency influences two entrepreneurial strategies, product differentiation and international diversification. Results from 226 entrepreneurs in Pakistan demonstrate that psychological resiliency predicts product diversification and international diversification through entrepreneurial alertness. Also, we find that institutional voids moderate the relationship between entrepreneurial alertness, product diversification, and international diversification. Our theorizing advances entrepreneurial alertness as a lynchpin variable for operationalizing founders' characteristics to affect innovation and expansion efforts. Furthermore, by demonstrating the complementary effect of institutional voids on the entrepreneurial alertness–product differentiation and entrepreneurial alertness–international diversification relationships, we draw the attention of entrepreneurs to the brighter side of institutional voids.

Zhu *et al.* (2025) examine entrepreneurial passion, alertness and opportunity recognition: Affective-cognitive interactions in dynamic environments in Ghana**.** The study analyses time-lagged data from 258 entrepreneurs to explore how, when and which aspects of entrepreneurial passion influence opportunity recognition through entrepreneurial alertness. The results indicate that all three types of entrepreneurial passion – passion for inventing, passion for founding and passion for developing – enhance opportunity recognition by increasing entrepreneurial alertness. Yet, only passion for inventing and passion for developing have a direct impact on opportunity recognition. Additionally, passion for inventing and passion for founding boost entrepreneurial alertness, but only in highly dynamic environments. Conversely, the effect of passion for developing alertness remains consistent regardless of environmental conditions. Further analysis reveals that each of the three passion domains affects opportunity recognition through different dimensions of entrepreneurial alertness.

Zhao et al. (2024) examined the relationship between entrepreneurial alertness and business model innovation, proposing a moderated mediation framework to handle the questions of why some entrepreneurs achieve business model innovation successfully while others do not. Based on a dataset of 150 firms in northwest China, this study finds that (1) entrepreneurial alertness facilitates business model innovation; (2) explorative learning and exploitative learning mediate the relationship between entrepreneurial alertness and business model innovation; and (3) risk perception moderates the mediating effects of different types of learning and then affects the relationship between entrepreneurial alertness and business model innovation. Specifically, with the increase of risk perception, the mediating role through explorative learning is weakened, while the mediating effect through exploitative learning is enhanced.

Pinheiro et al. (2024) conducted a qualitative case study in Portugal titled "Entrepreneurial alertness as a determinant of success in the SME context". Through interviews with four SME owners and thematic analysis, they revealed that entrepreneurial alertness is a pervasive trait that enables SMEs to uncover opportunities overlooked by competitors. They recommend that SME managers consciously cultivate alert awareness through deliberate environmental scanning and continual learning.

Asenge et al. (2021) examine the effect of entrepreneurial alertness on the performance of start-up firms in Nigerian publishing industry. The study measured the effects of three entrepreneurial alertness constructs; scanning and search, association and connection, evaluation and judgment on firm performance. A cross-sectional survey was adopted for the study and questionnaire was utilized for the collection of data from 125 employees of four start-ups publishing firms in Nigeria; Kachifo Limited, Cassava Republic Press, Masobe Books and Narrative Landscape Press that constituted the study population. The data collected were analysed using descriptive statistics (means and standard deviations) and inferential statistics (correlation and multiple regression). The study established a positive correlation between entrepreneurial alertness dimensions and firm performance. Results of tested hypotheses indicated that alertness scanning and search and alertness evaluation and judgment both have positive and significant effect on firm performance. The study however found that there is no significant effect of association and connection on firm performance.

Zhao et al. (2020) explored the relationship between entrepreneurial alertness and business model innovation, proposing a moderated mediation framework to handle the questions of why some entrepreneurs achieve business model innovation successfully while others do not. Based on a dataset of 150 firms in northwest China, the study finds that (1) entrepreneurial alertness facilitates business model innovation; (2) explorative learning and exploitative learning mediate the relationship between entrepreneurial alertness and business model innovation; and (3) risk perception moderates the mediating effects of different types of learning and then affects the relationship between entrepreneurial alertness and business model innovation. Specifically, with the increase of risk perception, the mediating role through explorative learning is weakened, while the mediating effect through exploitative learning is enhanced.

3.0 Methodology

This section outlines the key components to be covered, including the research design, study area, target population, sample and sampling method, data collection instrument, instrument validity and reliability, data collection procedure, model or variable specifications, and techniques for data analysis.

3.0 Methodology

3.1 The Study Area

This research on the effect of entrepreneurial alertness on the growth of Small and Medium Enterprises is concentrated on the North Central region of Nigeria. The region includes six States, which are Benue, Kogi, Kwara, Nasarawa, Niger, and Plateau as well the Federal Capital Territory (FCT). It has been purposefully chosen due to its strategic importance in terms of economic and agricultural contributions, especially as a center for Small and Medium Enterprises-related activities. The study covers all registered Small and Medium Enterprises operating within the North Central zone, with a focus on examining how entrepreneurial alertness influences their growth and overall contribution to development in Nigeria. The decision to focus on North Central Nigeria stems from its strategic role as a center for both agricultural and industrial activities, creating a favorable environment for medium businesses to thrive. The close proximity of the states within the region simplifies logistics for data collection and allows for comprehensive analysis of diverse food processing industry dynamics. The study adopted a survey research design and relied on primary data collected through structured questionnaires.

3.2 Population of the Study

The population of the study comprises of all the owners and/or managers of Small and Medium Enterprises in North Central Nigeria. The study focused on only owners and managers because they are considered more suitable to provide needed information for the study. This study examined Small and Medium Enterprises in North Central Nigeria using data from 2019 National Bureau of Statistics (NBS, 2019) and the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) websites. These two sources put the total number of Small and Medium Enterprises in the study area to be 13,378. This is presented in Table 1.

Table 1: Population of the Study

S/n	State	Number of SMEs
1.	Benue	1,811
2.	FCT Abuja	2,825
3.	Kogi	1,027
4.	Kwara	1,416
5	Plateau	1,574
6.	Nasarawa	2,604
7.	Niger	2,121
	Total	**13,378**

Source: NBS/SMEDAN MSME 2021 survey (2026)

3.3 Sample and Sampling Technique

The sampling method that is adopted for this study is the proportionate stratified random sampling technique. This technique is considered appropriate because it enables researchers to deliberately choose participants who possess the highest level of knowledge and experience regarding the subject under investigation. To determine a scientifically valid sample size for this study, the researcher applies the Taro Yamane formula, as proposed by Yamane (1967). The formula is presented below:

$$n = \frac{N}{1 + N(e)^2} \quad (1)$$

Where; n = Required sample size

N = Population of the study

e = Error margin (5%)

1 = Constant.

Therefore, the sample size is computed as:

$$n = \frac{13{,}378}{1 + 13{,}378(0.05)^2} \quad (2)$$

$$n = \frac{13{,}378}{1 + 13{,}378(0.0025)} \quad (3)$$

$$n = \frac{13{,}378}{1 + 33.445} \quad (4)$$

$$n = \frac{1827}{34.445} \quad (5)$$

$$n = 388.39 \quad (6)$$

Therefore, the sample size for this study comprises 388 owners/managers Small and Medium Enterprises across North Central Nigeria. Based on the calculated total sample size, the copies of the questionnaire to be distributed to each State is calculated using the Bowley's formula (Bowley, 1926) stated hereunder:

$$nh = \frac{nNh}{N} \quad (1)$$

Where; nh = the number of units allocated to each strata;
n = the total sample size;
Nh = the number of participants in each strata;
N = the population size.

The formula is applied to each state as shown in Table 2.

Table 2: Sample Size Distribution of SMEs in North Central Nigeria

S/n	State	Number of SMEs	Sample SMEs
1.	Benue	1,811	$\frac{388 \times 1811}{13378} = 52$
2.	FCT Abuja	2,825	$\frac{388 \times 2825}{13378} = 82$
3.	Kogi	1,027	$\frac{388 \times 1027}{13378} = 30$
4.	Kwara	1,416	$\frac{388 \times 1416}{13378} = 41$
5	Plateau	1,574	$\frac{388 \times 1574}{13378} = 46$
6.	Nasarawa	2,604	$\frac{388 \times 2604}{13378} = 76$
7.	Niger	2,121	$\frac{388 \times 2121}{13378} = 61$
	Total	**13,378**	**388**

Source: Researcher's Computation from Table 1.

3.4 Methods of Data Collection

This study depended primarily on original sources for collecting the essential data needed for thorough and comprehensive analysis. The use of primary data collection emphasizes the credibility and originality of the information obtained, ensuring that the data collected directly relates to the study's objectives. Primary data will be gathered from a total of 388 respondents, all of whom are owners/managers 388 selected Small and Medium Enterprises in North Central Nigeria. The data collection process will involve distributing self-administered questionnaires to participants, requesting that they fill out and promptly return them to facilitate timely analysis. To enhance the reliability and effectiveness of the process, the hand delivery and collection method also referred to as the drop and pick approach was employed. The researcher personally delivers each questionnaire to all respondents participating in the study. Once completed, the questionnaires will be collected at a mutually agreed-upon time. To improve response rates, follow-up visits will be made to the respective workplaces of the participants. In order to ensure the successful retrieval of the distributed questionnaire copies, the researcher will implement strategic measures including careful persuasion and oversight. A well-maintained log will be used to document the delivery and return status of each questionnaire, thereby ensuring a transparent and organized data collection process. This methodical procedure will help the researcher monitor which questionnaires have been completed and are ready for data analysis.

3.5 Model Specification

The model that will be used for this study is Partial Least Square – Structural Equation Model (PLS-SEM). The PLS-SEM for this study is presented in Figure 1.

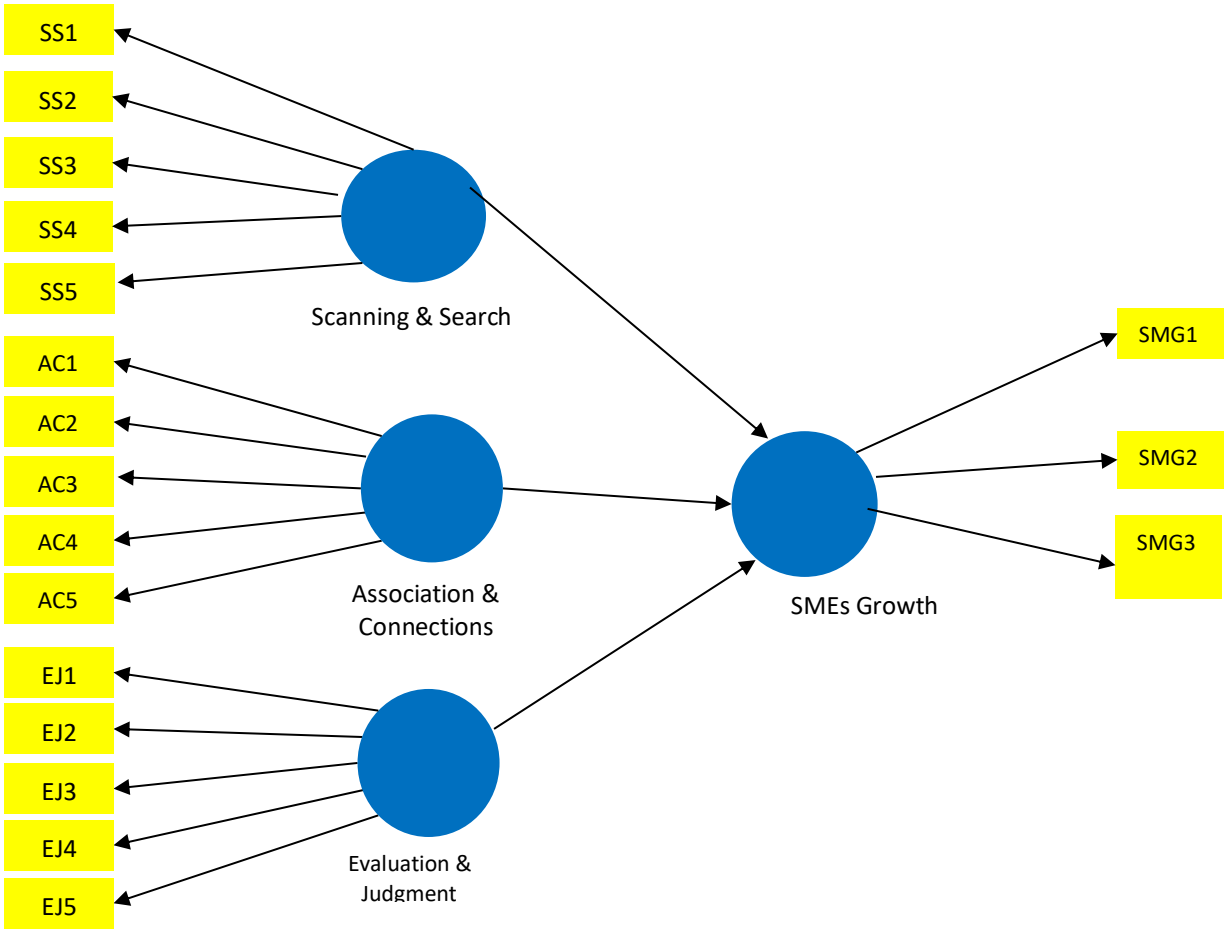


Fig. 1: Structural Model

Source: Smart PLS Researcher's Construction, 2026

In line with the research objectives, research questions, hypotheses, the SEM PLS regression model that will be estimated is stated in mathematical form implicitly as:

$SMG = f(EA)$ (7)

$SMG = f(SS, AC, EJ)$ (8)

Where, SMG = Small and Medium Enterprises Growth

SS = Scanning and Search

AC = Association and Connections

EJ = Evaluation and Judgment

When equation (8) is stated explicitly, we have:

$SMG = \beta_0 + \beta_1 SS + \beta_2 AC + \beta_3 EJ + \mu$ (9)

Where, β_0 = constant or intercept

$\beta_1 - \beta_5$ = parameter estimates

μ = Error term

The a priori expectation of the model is that all the dimensions of entrepreneurial alertness: scanning and search (SS), association and connections (AC), evaluation and judgment (EJ), will exert a positive and significant effect on the growth of small and medium enterprises (SMG) in North Central Nigeria.

3.5 Data Analysis Techniques

This study employs both descriptive and inferential statistical tools to analyse data for the study. This study will employ Factor Analysis using Structural Equation Modelling (SEM) in SmartPLS for data analysis. The procedure included the use of descriptive statistical tools (mean, median (p50), standard deviation, minimum, maximum and

total count values) to ascertain the general properties of the data for the study. The study used PLS-SEM because it is an appropriate technique for measuring opinions of respondents considering the sample size and data type to be used. The SEM technique combines principal component factor analysis and regression analysis but can handle all kinds of data and multiple variable relationship testing. The Structural Equation Modelling also shows the effect of one variable on another through a mediating variable in the analysis. Furthermore, the selection of survey research design is based on the nature of the study which provides data be collected within one year. The criterion for accepting or rejecting the study's hypotheses is outlined as follows: If the probability (p-value or significance level) exceeds 0.05 ($p > 0.05$), the null hypothesis (Ho) will be accepted, while the alternative hypothesis (H1) will be rejected. Conversely, if the p-value is less than 0.05 ($p < 0.05$), the null hypothesis (Ho) will be rejected in favor of the alternative hypothesis (H1), which will then be accepted.

4.0 Results and Discussions

4.1 Data Presentation

The presentation of the copies of questionnaire distributed and retrieved among the owners and managers in the study area is illustrated in Table 3.

Table 3: Distribution and Retrieval of Questionnaires

Copies of Questionnaire	Frequency	Percentage
Retrieved	346	89.18
Not retrieved	42	10.86
Total	**388**	**100**

Source: Researcher's Computations, 2026

The copies of the questionnaire were distributed to owners/management staff of Small and Medium Enterprises in north central Nigeria. The results presented in Table 3 show that a total of 388 copies of questionnaire were administered. However, only 346 copies were retrieved from these respondents, which constitute a response rate of 89.18%.

4.2 Demographic Characteristics of the Respondents

This section presents the demographic profile of the respondents. Participants were asked to provide information on their age, sex, marital status, and educational qualifications. The results are shown in Table 4.

Table 4: Demographic Characteristics of Respondents

Characteristics	Distribution	Frequency	Percentage (%)
Age Range	18-25 years	84	24.3
	26-30 years	55	15.9
	31-35 years	105	30.3
	36 years & above	102	29.5
	Total	**346**	**100.0**
Sex	Male	222	64.2
	Female	124	35.8
	Total	**346**	**100.0**
Marital Status	Single	82	23.7
	Married	132	38.2
	Divorced	107	30.9
	Separated	25	7.23
	Total	**346**	**100.0**
Educational Qualification	SSCE	31	9.0
	OND/NCE	93	26.9
	HND/BSC	132	38.2
	Post-graduate Degree	90	26.0
	Total	**346**	**100.0**

Source: Researcher's Computations, 2026

The results in Table 3 show that out of 346 respondents, 84 representing 24.3 percent were male while 262 representing 75.7 percent were female, showing that women dominate medium-scale enterprises in the study area. In terms of age distribution, 15.9 percent of respondents were between 20 and 29 years, 30.3 percent were between 30 and 39 years, and 29.5 percent were between 40 and 49 years. This indicates that most entrepreneurs fall within

the productive age bracket and are actively engaged in business operations that contribute to enterprise growth. The results also show that on marital status, 64.2 percent of the respondents were married while 35.8 percent were single, implying that many entrepreneurs have family responsibilities that may influence their motivation and stability in business. The education qualifications of respondents revealed that 23.7 percent had secondary education, 38.2 percent possessed OND/NCE, 30.9 percent had HND or bachelor's degrees, and 7.2 percent held postgraduate qualifications. The high proportion of respondents with post-secondary education suggests that most entrepreneurs are literate and capable of identifying business opportunities, interpreting market trends, and making informed business decisions, all of which are essential components of entrepreneurial alertness and medium enterprise growth in North Central Nigeria.

4.3 PLS-SEM Model Estimation

The analysis of data for this study was conducted using the approach of partial least square structural equation modelling (PLS-SEM), a widely utilized multivariate statistical method that has gained significant popularity among researchers due to its effectiveness in determining and evaluating causal linkages. Prior to the estimation, descriptive statistics including the mean, median, standard deviation, minimum, maximum, and total count values, were computed. In addition to employing the Structural Equation Model as a means of evaluating research hypotheses, the study also used the Variance Inflation Factor (VIF) test to examine collinearity statistics and identify any potential issues related to multicollinearity that may be present within the dataset.

4.3.1 Descriptive Statistics

The descriptive statistics that were computed, as earlier noted are the mean, median, maximum, minimum, standard deviation, skewness, and kurtosis; which are presented in Table 5.

Table 5: Descriptive Statistics

Statistic	SS	AC	EJ	SMG
Mean	3.213	3.224	2.887	3.102
Median	3.231	2.545	2.985	2.123
Maximum	5.000	5.000	5.000	5.000
Minimum	1.000	1.000	1.000	1.000
Std. Dev.	1.142	1.231	1.121	1.113
Skewness	1.012	0.121	-1.210	0.212
Excess Kurtosis	3.120	3.010	4.016	4.010

Source: Researcher's Computations from Smart PLS4, 2026

The descriptive statistics in Table 5 summarize the central tendencies and dispersion of variables measuring entrepreneurial alertness dimensions and Small and medium enterprises growth. The mean score for Small and medium enterprises Growth (SMG) is 3.65 with a standard deviation of 0.55, suggesting that most respondents moderately agreed that their businesses have experienced non-financial growth in areas such as market expansion, competitive advantage and brand expansion. The relatively low variability indicates that responses were fairly consistent across firms. Scanning and Search (SS) recorded a mean of 3.82 and a standard deviation of 0.69, showing that entrepreneurs frequently engage in environmental scanning and information gathering. This reflects a proactive approach to identifying trends, customer needs, and market opportunities. The moderate dispersion suggests that while some firms are highly alert, others may still lack structured scanning mechanisms. Table 5 also show that the mean for association and connections (AC) is 3.75 with a standard deviation of 0.63, implying that most respondents agreed that they are able to connect different information sources to generate business insights. This demonstrates cognitive alertness in linking market signals to opportunities. However, the variation across responses suggests differences in entrepreneurs' analytical and networking abilities. Evaluation and judgment (EJ) have a mean value of 3.91 and a standard deviation of 0.71, indicating that respondents tend to evaluate business opportunities critically before taking action. This reflects strong decision-making skills and a tendency toward calculated risk-taking. The moderate spread implies that although most entrepreneurs evaluate opportunities systematically, a few still rely on intuition.

The results in Table 5 also show that sensitivity to asymmetries (STA) recorded the highest mean of 4.12 with a standard deviation of 0.66, showing that many respondents are highly sensitive to unnoticed market gaps, inefficiencies, and emerging trends. This suggests that most entrepreneurs can detect unexploited opportunities

faster than competitors, a key element of entrepreneurial alertness. Risk perception (RKP) had a mean of 3.46 and a standard deviation of 0.74, the lowest among the variables. This indicates that respondents have a moderate perception of risk and tend to exercise caution when making business decisions. The slightly higher variability suggests mixed attitudes toward risk, where some entrepreneurs are more willing to take calculated risks while others prefer conservative approaches.

4.3.2 Structural Model Assessment

The evaluation of the structural model in this study was conducted based on the recommendations put forward by Hair, Ringle, and Sarstedt (2013). These esteemed researchers proposed the adoption of a bootstrapping method, accompanied by a resample of 5000, as a means to assess various key indicators such as R^2, beta, and the associated t-values. Moreover, the measurement of predictive significance was carried out by employing the Q^2 statistic, while the f^2 statistic was utilized to gauge the impact sizes. By incorporating these methodological approaches, the study comprehensively analyzed the structural model and provided valuable insights into its underlying variables and relationships. Figure 4.2, which can be observed in the illustration, presents a structural model that displays a selection of the aforementioned statistics.

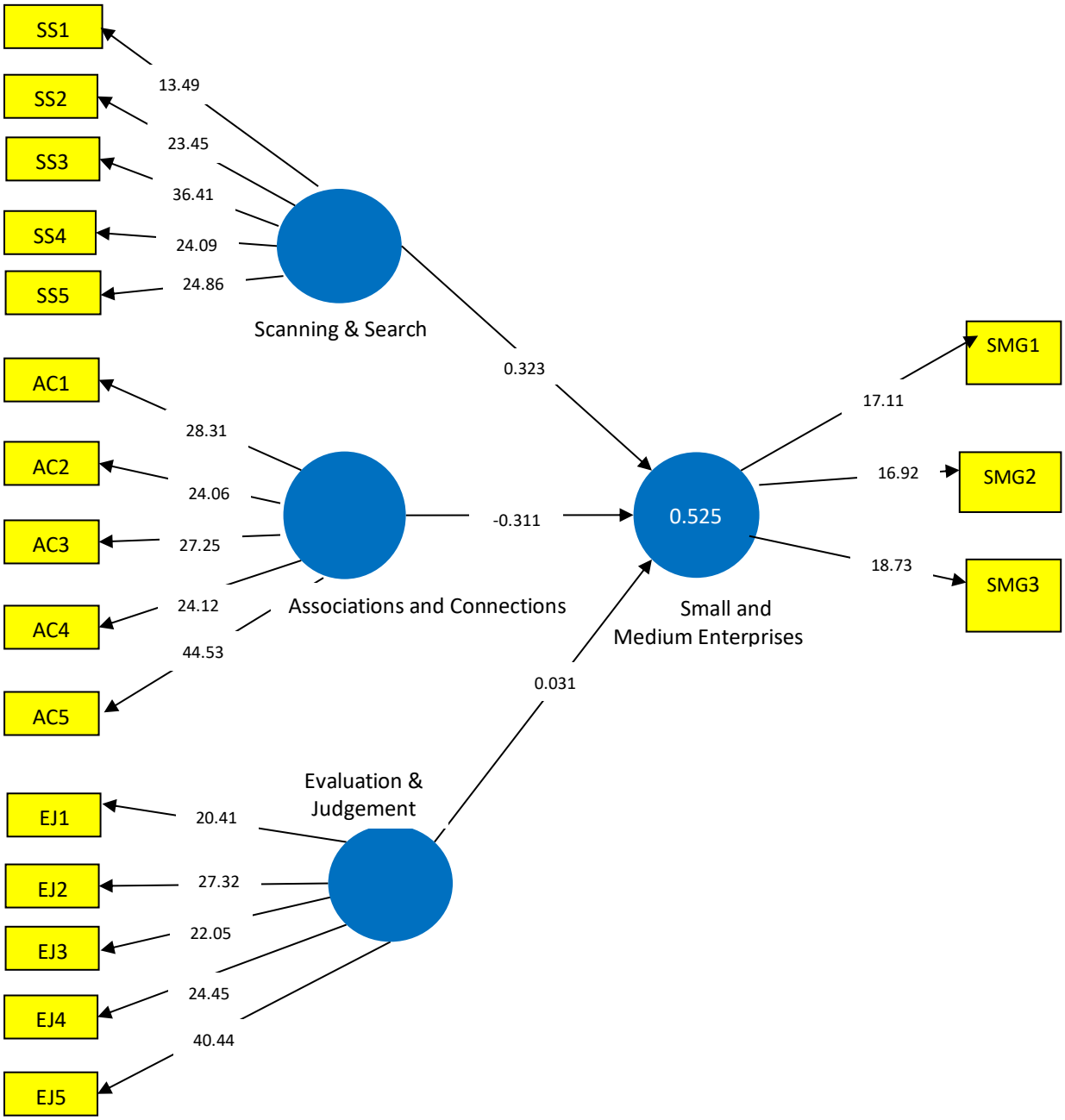


Fig. 2: PLS Algorithm (t-Values, Path Coefficient and R^2)
Source: Researcher's Construction from Smart PLS4, 2026

Figure 2 shows that the independent variables, namely scanning and search; associations and connections; evaluation and judgment; sensitivity to asymmetries; and risk perception, are all influential factors that have the capacity to predict the dependent variable, which in this case is small and medium enterprises growth. It is important to highlight that each of these variables demonstrates statistical significance, as corroborated by the t-values and probability values. Moreover, it is imperative to explicitly evaluate each of these latent variables by utilizing the component scores on the scales that correspond to each of these variables. In order to solidify the foundation for hypotheses testing, it is crucial to establish connections between the projected latent variables, with a particular focus on the anticipated impacts of the three distinct variables on the dependent variable.

4.3.3 Collinearity Test of the Model

In order to safeguard against any potential distortion in the outcomes of the examination of the structural connections, the study used the Variance Inflation Factor (VIF) to assess the presence of collinearity. The results of the VIF for the SEM-PLS model were computed and presented in Table 6.

Table 6: Inner VIF Values of the Model

Variables	VIF
Scanning and search	1.334
Associations and connections	2.034
Evaluation and judgment	1.513

Source: Researcher's Computation from Smart-PLS 4, 2026.

The results of the Variance Inflation Factor (VIF) analysis, as presented in Table 14, reveal that none of the VIF values exhibit proximity to the threshold of 5, thereby substantiating the absence of any indications pertaining to potential collinearity concerns amidst the predictors (independent variables) included in this study.

4.4 Hypotheses Testing

In order to test the hypotheses of this study, the path coefficients were computed using Smart PLS 4, via SEM-PLS and the results are presented in Table 16.

Table 16: Path Coefficient of the Model for Hypotheses Testing

Hypotheses	Beta	t-value	p-value	Decision	f^2
H_{o1}: Scanning & Search Small and Medium Enterprises Growth	0.456*	6.251	0.000	Rejected Ho	0.257
H_{o2}: Associations & Connections Small and Medium Enterprises Growth	0.323*	4.121	0.031	Rejected Ho	0.311
H_{o3}: Evaluation & Judgment Small and Medium Enterprises Growth	-0.311*	-3.687	0.003	Rejected Ho	0.422

*Notes: *indicates significance at 5% significance level.*

Source: Smart-PLS 4 Results, 2026

Hypothesis One

H_{o1}: Scanning and search have no significant effect on the growth of Small and Medium Enterprises in North Central Nigeria.

The results of the path coefficient analysis conducted on the model presented in Table 6 show that scanning and search exert positive effect on the growth of Small and medium enterprises in North Central Nigeria. This positive effect is revealed by the coefficient value of 0.456. Thus, it can be inferred that a one percent increase in scanning and search in the study area will lead to a 0.456 percent increase in the growth of Small and medium enterprises, and vice versa. Furthermore, the statistical significance of this relationship is confirmed by the fact that the probability value of 0.000 is less than the significance level of 0.05 (i.e., 5%). In addition to the path coefficient analysis, the f-squared (f^2) statistic is employed to evaluate the power of the independent variable in explaining the dependent variable. According to Cohen's (1988) classification, f^2 values of 0.02, 0.15, and 0.35 correspond to weak, moderate, and strong (large) effects of important independent variables, respectively. In the present case, the calculated f^2 value for the variable 'new business venturing' is 0.257, indicating a moderate effect size. Based on the results obtained from the path coefficient analysis and f-squared statistic, it can be concluded that the first null hypothesis, is rejected and its alternative accepted. This means that scanning and search have significant effect on the growth of Small and medium enterprises in North Central Nigeria.

Hypothesis Two

H_{o2}: Association and connections have no significant effect on the growth of Small and medium enterprises in North Central Nigeria.

The results illustrated in Table 6 show that association and connections have positive and significant influence on the on the growth of Small and medium enterprises in North Central Nigeria, as revealed by the coefficient of 0.323. This coefficient implies that a one percent increase in the level of association and connections among Small and medium enterprises in the study area would lead to a 0.323 percent increase in the growth of these enterprises, and vice versa. Furthermore, the probability value of 0.031, along with its associated t-statistic of 4.121, shows

that the effect of associations and connections on the growth of Small and medium enterprises in the study area is statistically significant at the 5% level of significance.

On the effect size pertaining to this path coefficient of associations and connections-growth of Small and medium enterprises nexus reveals that it has a large magnitude, as indicated by the f^2 value of 0.311. Since the effect of associations and connections on the growth of Small and medium enterprises is statistically significant at 5% level, the second null hypothesis is rejected, and its alternative is accepted. This implies that association and connections have significant effect on the growth of Small and medium enterprises in North Central Nigeria.

Hypothesis Three

H_{o3}: Evaluation and judgment have no significant effect on the growth of Small and medium enterprises in North Central Nigeria.

The findings of the path coefficients presented in Table 6 show contrary to expectations that, evaluation and judgment have negative effect on the growth of Small and medium enterprises in North Central Nigeria as indicate by the coefficient of -0.311. This implies that a one percent increase evaluation and judgment results in 0.311 percent decrease in the growth of Small and medium enterprises, and vice versa, other things being equal. The magnitude of this effect is further emphasized by the f^2 statistic value of 0.422, which signifies a large impact.

Moreover, the statistical significance of the effect of evaluation and judgment on the growth of Small and medium enterprises is supported by the t-value and p-value associated with this variable. These values indicate that the effect of evaluation and judgment on the growth of Small and medium enterprises is statistically significant at the 5% level of significance ($0.003 < 0.05$). Hence, the null hypothesis three is rejected and its alternative accepted. This means that evaluation and judgment have significant effect on the growth of Small and medium enterprises in North Central Nigeria.

4.5 Discussion of Findings

The first objective of this study was to examine the effect of scanning and search on the growth of Small and medium enterprises in North Central Nigeria. The results obtained revealed that scanning and search have a positive and significant effect on the growth of Small and medium enterprises in North Central Nigeria. This implies that entrepreneurs who actively gather and analyze information from their environment are more likely to identify profitable opportunities that enhance business performance. Scanning and search behaviour enables entrepreneurs to monitor market trends, understand customer needs, and detect changes in technology or competition. This proactive orientation improves decision-making and allows enterprises to adjust their strategies quickly. The significant positive relationship shows that firms engaging in continuous environmental scanning and market research experience faster growth in sales, market share, and operational capacity than those that do not.

The finding that scanning and search positively and significantly affect the growth of Small and medium enterprises s in North Central Nigeria is in line with that of Asenge et al. (2021) who found that alertness scanning and search had a positive and significant effect on firm performance among Nigerian publishing startups. Similarly, Fatoki and Oni (2015) both reported that scanning and search, as a dimension of entrepreneurial alertness, positively and significantly impacted the performance of immigrant-owned businesses in South Africa. Contrariwise, Mahamotse and Msimango-Galawe (2024) found that scanning and search dimensions did not have an impact on enterprise performance indicators among youth-owned enterprises in South Africa, which might have been so on the basis of geographical scope. Additionally, Wibowo et al. (2023) reported that scanning and search failed in determining students' intention to start new businesses in Indonesia, indicating that this dimension may function differently in opportunity recognition versus venture growth contexts, or across different stages of entrepreneurial development.

The second objective of this study was to analyse the effect of association and connections on the growth of Small and medium enterprises in North Central Nigeria. The results of the SEM-PLS show that association and connections have a significant effect on the growth of Small and medium enterprises indicate that social networks play a vital role in entrepreneurial success in the region. Building strong associations with suppliers, customers, trade groups, and professional bodies enhances access to critical resources such as information, finance, and technology. It also fosters trust and collaboration, which can open doors to new business opportunities. The

significant relationship suggests that enterprises that leverage social capital and maintain strong business and personal relationships enjoy improved performance, resource mobilization, and long-term sustainability.

The finding that association and connections have a significant effect on the growth of Small and medium enterprises in North Central Nigeria is consistent with the findings of Zhao et al. (2020) and Zhao et al. (2024) both demonstrated that entrepreneurial alertness facilitates business model innovation through learning mechanisms that inherently involve making associations and connections. Similarly, Pinheiro et al. (2024) revealed that entrepreneurial alertness enables SMEs to uncover opportunities overlooked by competitors precisely through the cognitive capacity to connect disparate information. Ramos-Rodríguez et al. (2024) explicitly linked opportunity recognition to social capital, which fundamentally operates through association and connection mechanisms. However, the findings of this study contradict those of Mahamotse and Msimango-Galawe (2024); who found that association and connection dimensions did not impact enterprise performance indicators among South African youth entrepreneurs, suggesting that younger entrepreneurs may not effectively translate this cognitive capability into performance outcomes. In a similar contradictory manner, Asenge et al. (2021) reported no significant effect of association and connection on firm performance among Nigerian publishing startups.

The third and last objective of this study was to determine the effect of evaluation and judgment on the growth of Small and medium enterprises in North Central Nigeria. The results revealed that evaluation and judgment have a negative but significant effect on growth. This suggests that excessive caution or over-analysis by entrepreneurs can hinder opportunity exploitation. While evaluation and judgment are important for weighing risks and assessing feasibility, overreliance on analytical reasoning may delay decision-making and reduce agility. This negative but significant relationship indicates that although entrepreneurs apply rational assessments in identifying opportunities, such evaluations sometimes constrain innovation and responsiveness. In the North Central context, where markets are dynamic and uncertain, delayed actions due to over-evaluation can limit business expansion and competitiveness.

The finding that evaluation and judgment have a negative but significant effect on the growth of Small and medium enterprises in North Central Nigeria stands in stark contrast to those of Mahamotse and Msimango-Galawe (2024); who found that evaluation and judgment dimensions had a direct positive impact on enterprise profitability and overall enterprise performance in South Africa. Also, Asenge et al. (2021) reported that alertness evaluation and judgment had positive and significant effects on firm performance among Nigerian publishing startups. Fatoki and Oni (2015) similarly found positive and significant impacts of evaluation and judgment on immigrant-owned business performance in South Africa. Onwe et al. (2024) demonstrated that evaluation and judgment alertness mediated the relationship between entrepreneurial passion and persistence in venture start-ups, suggesting its positive role in entrepreneurial processes. The negative effect finding might be due to contextual factors unique to North Central Nigeria, such as particularly high environmental uncertainty that renders careful evaluation counterproductive, or measurement issues where the evaluation and judgment items might have been interpreted differently by respondents. This might also be attributed to a scenario where excessive evaluation and judgment leads to analysis paralysis or missed opportunities in fast-moving markets, though this interpretation would require further investigation as it diverges from established theory.

5.0 Conclusion and Recommendations

Based on the findings of this study, it is concluded that scanning and search significantly enhance the growth of small and medium enterprises in North Central Nigeria. Entrepreneurs who actively explore market trends, customer needs, and competitive information are better positioned to seize emerging opportunities and improve firm performance. It can be concluded that continuous environmental scanning and market research are key drivers of enterprise growth in the region. This study also concludes that association and connections significantly influence the growth of Small and medium enterprises in North Central Nigeria. Building and maintaining strong business networks provide access to essential resources, information, and partnerships that facilitate expansion and sustainability. Finally, it can be concluded that evaluation and judgment have a negative but significant effect on the growth of small and medium enterprises in North Central Nigeria. It can be concluded that while critical assessment and reasoning are important for decision-making, excessive caution and over-analysis can slow

business responsiveness and reduce growth potential. Entrepreneurs need to balance careful evaluation with timely action to achieve sustainable expansion.

Based on the findings of this study, it is recommended that government agencies and business development institutions organize regular entrepreneurship training programs focused on market research, environmental scanning, and opportunity identification. Policies should also promote access to business information systems and digital tools that help entrepreneurs gather and analyze market data effectively. Also, since association and connections have a significant effect on the growth of Small and medium enterprises, it is recommended that policies encourage the formation and strengthening of business networks, cooperatives, and trade associations. Finally, finding that evaluation and judgment have a negative but significant effect on the growth of Small and medium enterprises, calls for the implementation of entrepreneurship development programs, which should include practical training on decision-making under uncertainty. Policies should promote mentorship schemes that expose entrepreneurs to real business experiences and build confidence in taking calculated risks.

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