



# The Mediating role of Innovation in Business Training and the Performance of Small and Medium Enterprises (SMEs) in North-Eastern State of Nigeria



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**Abstract:** This study examined the effect of business training (BT) on the performance of small and medium enterprises (SMEs) in Nigeria using 'Innovation' as a mediator in order to improve the Performance of SMEs which in the long-run contribute positively towards the increase of the Nigerian GDP. Data for the study were collected from SMEs operating in the North-Eastern States of Nigeria using a survey design and stratified disproportionate sampling. A structured questionnaire was administered to 576 respondents for the purpose of data collection. The data were analyzed using the Partial Least Squares-Structural Equation Modelling (PLS-SEM). The findings revealed that the mediating effect of innovation on business training is an important strategic element for the enhancement of business performance among the SMEs in Nigeria. Thus, SMEs should also be encouraged to improve their business training on innovation which increase their business performance. The study recommends that management of the SMEs should adopt new or beneficial business innovation. This is because better business innovation used to facilitate coordination between different functions such as marketing and manufacturing thus better firm performance.

**Keywords:** Business Training, Innovation, Performance of Small and Medium Enterprises (SMEs).

**JEL Codes:** O31, M19, R11, L25.

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## Introduction

In recent years, both developed and developing countries support for Small and Medium Enterprises (SMEs) development and growth has increased. This is because of the contribution of SMEs to the employment creation. Evidence shows that a dynamic and growing SMEs sector can contribute to the achievement of a wide range of development objectives, including the attainment of income distribution poverty reduction and creation of employment, savings mobilization and production of goods and services that meet the basic

needs of the poor (Ayyagari, 2011 cited by Hausman & Johnston, 2014), found that young firms that grow have twice the probability of survival as young non growing firms. It has been also found that strong growth may reduce the firm's profitability temporarily, but increase it in the long run. The growth of SMEs is believed to be a desirable end as the key drivers of employment and economic development.

Small and Medium Enterprise (SMEs) nowadays have been growing not just nationally but also internationally (Naala, *et al* 2017). According to World Bank, the formal SMEs have contributed 60% in the total employment and 40% in national income (GDP) in the emerging economies. With the impact of SME's on the emerging economies, governments need to find ways to improve the ability of the SME's (Gorondutse, *et al* 2017). Hameed, *et al.*, (2017) stated that SMEs can provide high numbers of employment, innovation, and entrepreneurial opportunities. It is important to know that SMEs has a very strong potential in building a Nation's economy. Instead SMEs tends to have limitation and acceptance barriers when it comes to adopting new technologies and new communication channels.

Small and Medium enterprises are the backbone of many economies in developing country and hold the key to possible revival of economic growth and the elimination of poverty on a sustainable basis. Despite the substantial role of the SMEs in Nigerian economies, they are denied official support, particularly business training, from institutionalized financial service organizations that provide funds to businesses. According to Abdulkadir, *et al* (2012), these enterprises account more than one – half of the economic activities contributing about 12% and 34% of rural and urban employment activities in Nigeria. Numerous evidences have pointed to the fact that the number of these enterprises in Nigeria is declining at an alarming rate and little has been achieved in Nigeria, despite of the many efforts done to fight for poverty reduction (Hassan., 2013).

According to Abdulkadir, *et al* (2012), business training is an important factor in the SMEs as it provides entrepreneurs with the abilities and practical experience required for business development. Literature shows that most of the SMEs owners lacked specialized skills on business innovation. Therefore, they need business training in order to innovate their business facilities. On the other hand, most entrepreneurs in the developing countries are lacking in prior business experience that is among the most important factors in ensuring enterprise success (Hameed, *et al.*, 2017). Previous studies have confirmed that business training has a positive and significant impact on performance of SMEs, (Chinomona, 2013). However, the utilization of entrepreneurial opportunity is determined by the entrepreneur's level of knowledge or skills acquired and networking through working experience (Naala, *et al* 2017).

The recent advancement in information technology has impacted heavily on SMEs ability to innovate hence impacting on the SMEs performance. SMEs face several challenges towards optimizing their performances which include changing consumer behavior and needs, globalization, and disintermediation. Information technology is also having its impact (Chorafas, 2007).

Despite the contributions of SMEs towards entrepreneurship activities in developing countries in which Nigeria is not in isolations, the contribution of SMEs in the industrial sector to the GDP in Nigeria was estimated to be 37% compared to other countries like India, Japan and Sri Lanka and Thailand where SMEs contributed 40%, 52%, 55% and 47.5% respectively to the GDP, (Teoh & Chong, 2007). Among the reasons given for this global trend of low business performance are factors include business training, lack of motivation,

ineffective network connectivity, inability to adopt new technologies and new communication channels and inability to innovate their business are declining the performance of SMEs. (Ekpe, 2010; Ochola, et al., 2013).

Again, business training has been widely measured and found to have positive impact on the performance of SMEs in developing countries (Abdulkadir, *et al* 2012). Many studies augment the relationship between one or a combination of innovation and business training, for the performance of SMEs (Kuzilwa, 2015) but there is limited study that jointly links mediating role of innovation between business training and performance of small medium enterprises particularly in Nigeria, North-East inclusive hence a knowledge gap exists.

Furthermore, such challenges often hinder economic development and increases poverty level in a country; studies worldwide indicated a low down economic development and sky-scraping poverty in developing country like Nigeria is due to that country's incapability to build up her economic sector and encourage small and medium enterprises (Isyaku 2014). Other studies base their arguments on Nigerian failure to raise the spirits of SMEs in the country (Kuzilwa, 2015). Business training and innovation is vital to SMEs in Nigeria due to the country poor economic indices portrayed by low down Growth Domestic Product (GDP) growth rate, (GR) high population (HP), high birth rate (HBR) and low death rate (LDR), high poverty (HP) and high unemployment (HU) (Evbuomwan *et al.*, 2013; NBS/SMEDAN, 2012; ILO, 2009).

The current study used innovation as a mediator to probe the effects of business training on performance of SMEs. More so, it is significant to evaluate the link between innovation and performance of small SMEs by analyzing the mediating variable of innovation and how they affect each other under what condition of indirect effects (Baron & Kenny, 1986; Hayes, 2009). Therefore, based on the literature review, this study intends to investigate if innovation mediates between business training and performance of SMEs in the North Eastern State of Nigeria.

### **Research Objectives**

The main objective of the study is to examine the Mediating role of Innovation between Business Training and the Performance of Small and Medium Enterprises (SMEs) in the North-Eastern of Nigeria. The specific objectives of the study include:

- i. To examine the influence of business training on SMEs performance in the North-Eastern State of Nigeria.
- ii. To determine whether innovation mediates the influence of business training on SMEs performance in the North-Eastern State of Nigeria.
- iii. To investigate the influence of innovation on SMEs performance in the North-Eastern State of Nigeria.
- iv. To examine the mediation role of innovation between business training and performance of SMEs in North-Eastern State of Nigeria.

### **Literature Review**

#### **Conceptual Review**

##### **Small and Medium Enterprises**

There is no widely recognized definition of a small and medium enterprises because defining a corporation as small-scale or medium scale is a subjective and qualitative opinion (Hameed, *et al.*, 2017). In most of the literature, the term "SMEs" is used informally to refer to a wide range of businesses (Babajide, 2011). In countries like the United States, the United

Kingdom, and Canada, small and medium enterprises are characterized by annual turnover and the number of paid employees. A small and medium businesses in the United Kingdom is defined as an industry with an annual turnover of less than 2 million pounds and fewer than 200 paid employees, according to (Gorondutse, 2017). Definitions vary considerably from country to country, and in some cases even between countries, depending on the government agency or business sector in question. Employees, revenues, and fixed assets are just a handful of the indicators that are commonly used. Small and medium businesses in Nigeria are classified based on their asset base (excluding land), employee count, and annual turnover. Small and medium enterprises in Nigeria and other countries are classified based on one or more of the following variables, the size or amount invested in assets other than real estate; yearly turnover; and the number of employees.

### **Business Training**

Business training, according to (Storey, 2013), is a set of short orientation programs aimed at small and medium enterprises that are believed to be weak in important entrepreneurial skills. According to (Mahmood, 2013), business training is a combination of skills, talents, behaviours, and attitudes that contribute to personal performance and are crucial to small and medium enterprises survival and growth. It is a sort of training that, according to (Kinimi, 2014), focuses on basic of innovation in business management, marketing, and entrepreneurial talents that must be integrated with existing technical and vocational skills in order to improve business efficiency.

In an attempt to relate business training to the concept of small and medium enterprises in business management, (Ibrahim, N., Mahmood, R., & Bakar, M, 2016) define business training as those processes that could enable small and medium enterprises to acquire the necessary skills to save and develop the confidence to explore viable business ideas and market opportunities for their products or services. According to (Ukanwa, I., Xiong, L., & Anderson, A., 2018), these are programs that can help people develop essential entrepreneurial skills such as self-confidence, courage, self-control, risk-taking, creativity, and innovativeness.

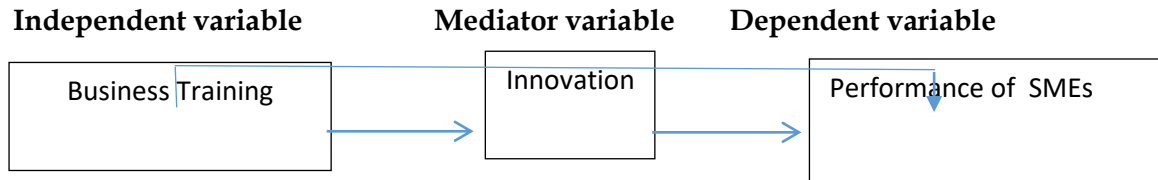
### **Innovation**

Innovation is described as “the introduction of new or improved processes, products or services based on new scientific or technology knowledge and/or organizational know-how” (OECD, 2015). an invention is the first occurrence of an idea for a new product or process whereas innovation is the act of putting it into practice. There are different types of innovation in business (Trott, 2008), however it can be related to new products or services, new production processes, new marketing techniques, and new organizational or managerial structures. Innovation may also involve technology, intellectual property, business, or physical activity, (Roberts, 1999).

In general, the literature considers innovation as critical in fostering the economic efficiency of both SMEs and nations are one of the key drivers of firms’ long-term success, particularly in dynamic markets, (Trott, 2008). The rationale behind this idea is that innovation often serves to deal with the turbulence of the external environment. To survive in Schumpeterian environments, business enterprises must be able to cope with increasing complexity and high-velocity change, (Eisenhard, 1995). In these contexts, SMEs with the capacity to innovate can respond to these challenges faster and exploit new products and market opportunities better than non-innovative SMEs, (Hassan., 2013). Thus, it is commonly

perceived that enterprises should innovate to be effective and, in the long run, to survive (Hajar., 2015).

**Figure: 1.**  
*Conceptual Framework.*



Source: Sharma, Davcik and Pillai (2016)

Figure 1 shows the research framework for this present study. Business training (BT) is the independent variable, performance of small and medium enterprises (PSME) is the dependent variable while innovation (INN) acts as the mediating variable. According to the research hypotheses and research objectives, innovation is assumed to improve the business performance of SMEs of the North-Eastern States of Nigeria.

### **Theoretical Review**

This study is reinforced by three theories of innovations. The theories include disruptive innovation theory, innovator's dilemma theory and innovator's solution theory.

### **Disruptive Innovation**

Theory Disruptive innovation theory was hypothesized by Christensen in 1997. He suggested that in a quickly changing and uncertain world, innovation is the key to competitive advantage. Yet innovation also increases uncertainty and market pressure (Lettice, 2006). The more radical the innovation, the more difficult it is to estimate its market acceptance and potential. The increasing complexity and market dynamics create a substantial knowledge gap between theory and practice. Many companies are not organized to give new ideas a chance, to recognize trend breaking points in the market, to adapt quickly to changing market circumstances, or to cause market changes in the first place (Markside & Snow, 2009). Disruptive innovations change the game. They attack an existing business, and offer great opportunities for new profit growth. Only radical innovations lead to growth (Hammer & Chamy, 2009). Lettice (2006) define disruptive innovation as: A successfully exploited product, service or business model that significantly transforms the demand and needs of an existing market and disrupts its former key players. A radical innovation is a product, process or service with either unprecedented performance features or familiar features that offer significant improvements in performance or cost that transform existing markets or create new ones.

This disruptive innovation development process is an interdependent system, based on the concepts of system thinking and of dynamic strategic thinking with learning as a central aspect (Brown, 2009). This process is affected by exogenous determinants such as economic, social and political factors, competition and infrastructure, and endogenous determinants such as resources, corporate structure and corporate culture.

### **Dilemma Theory of Innovation**

The innovator's dilemma theory was proposed by Christensen in 2003. The crux of Christensen's (2007) insight is that firms wishing to innovate face an irresolvable dilemma: their existing customers will encourage them to focus resources on building a better widget,

while somewhere else another company is building a gadget, either for new sub-segments of the market, or for an altogether new market. The technological trajectory of the gadget, however, will lead it to eventually usurp the position of widgets in the whole marketplace by destroying the widget market altogether. Therefore, widget companies that listen closely to their existing customers and perfect their technology will one day inevitably face a situation where the market for their technology has been made redundant by the market for the next-best-thing: the gadget. The existing customers will then defect to gadgets, leaving widget producers high and dry. The story thus told may be captured in the following relationship and its consequences for firm strategy: The better aligned management incentives are to serving the existing customer base by improving the current technology of the firm, the more likely the incumbent firm is to be blindsided by a market for a fresh new technology created by a challenger entrepreneurial firm. This fresh new technology initially appeals only to customer markets that do not appeal to the firm, but goes on to capture the firm's core customer base over time.

The essence of this debate suggests a trade-off between two fundamental functions of good management: the creation of satisfied customers and the creation of innovations.

### **Innovator's Solution Theory**

Christensen and Raycroft's theory of the innovator's solution is a brilliant analysis of why companies fail to innovate. It explains convincingly why corporate managements don't learn about good ideas, and why managers succumb to inherent pressures to run away from the challenge of disruptive competition rather than stand and fight. The decisions made as a result of these pressures make sense in the short run to the individuals involved, but in due course they send the organization into an inexorable death spiral (Alstrup, 2010). But while their analysis of the causes of failure to undertake disruptive innovation is effective, their project for solving the dilemma of disruptive innovation is less helpful. The central premise of their thesis the innovator's solution is to accept the grim reality that big companies are inherently and constitutionally disinclined to tackle disruptive innovation. A modern organization will crush disruptive new ideas, because they represent a threat to management, to careers, to power structures, to customary ways of things, to client bases, to brands, to corporate culture. The authors' solution is to protect genuine innovators and their disruptive change ideas from these hostile forces. According to Raycroft, (2009) corporate leaders should put up a wall between the innovation and the existing hierarchy. Leadership should create an independent business unit, which will provide a safe and protected environment for innovation. There the innovation can flourish without having to fight off the interferences and intrusions and anti-innovation attitudes of the hierarchy.

### **Empirical Review**

Empirically, a vast number of studies have been conducted to examine the business training on performance of entrepreneurs. For example, (Rosli, 2013) studied the moderating impacts of human resource management practices and the entrepreneur business training on innovation of the small and medium enterprises (SMEs) performance in Malaysia using the sample of 284 SMEs in Malaysia. Data was drawn using questionnaires. The findings indicated that business training of entrepreneurs has a strong positive significance influence on firm performance. (Davoudi, *et al*, 2018), examined the relationship between Intellectual Property Rights and Organizational Performance with the Mediating Role of Open Innovation and a sample of 30 Russia Semnan Science and Technology Park companies. Using questionnaire for data collection and Structural Equation Model for data analysis, findings revealed a significant positive relationship of open innovation on organizational

performance, and recommended future study to improve the study by selecting additional contexts i.e. educational, electronic, manufacturing, service, and virtual organizations.

Zhou, (2017) explored the mediating role of innovation on dynamic capabilities and organization performance. A sample of 204 Chinese firms in China was selected. Data were drawn from a questionnaire and the PLS-SEM for data analysis. Results revealed a significant positive effect of innovation on dynamic capabilities of and organization performance. The researchers suggested future study to expand the scope of the research to various enterprises by improving the measurement of innovation. (Al-Sa'di, et al., 2017), examined the mediating role of process and product innovation on the influence of operational performance and knowledge management in the manufacturing companies with a sample of 207 Jordanian companies in Amman using survey questionnaires employing the PLS model for data analysis. The finding revealed a significant positive effect of product and process innovations on the Knowledge Management and Operational Performance.

Sharma, et al., (2016), investigated the influence of Brand Equity on Marketing Performance and Research and Development Expenditure with the mediating role of Product Innovation. They used a sample of 10,282 data of Bureau van Dijk Electronic and ACNielsen Italy's report on household's financial statement of food purchase, and regression was employed for data analysis. Findings showed that the Research and Development Expenditure and Brand Equity have a positive significance influence on Product Innovation and the Marketing Performance, and recommended future researchers to use Product Innovation as a moderator in influencing Research Development Expenditure and Brand Equity of Marketing Performance.

Naala, et al., (2017), lead a study on the connection between Innovation Capability and Organizational Performance among the Small Medium Enterprises in North-Western Nigeria using the sample of 280 firms. Data was analysed using the PLS-SEM; the findings revealed that Innovation Capability is a significant SMEs success factor. (Lu, et a.;, 2015), investigated the mediating role of Innovation on the High-performance human resource management and Organizational Performance in China. A sample of 150 pre-survey Chinese manufacturing industries in Beijing, Changchun, Harbin Shanghai, Shenzhen, and other cities was selected. Data were drawn from questionnaires and the PLS-SEM was employed for data analysis. Results revealed a significant effect of innovation on high-performance of HRM and Organizational Performance. The researchers suggested future study to expand the scope of the research to various enterprises scenarios. Based on the above findings of the previous research, the following hypotheses and research objectives are suggested for this present study.

### **Methodology**

A cross-sectional survey research design was chosen for this study. The target population selected for this research are the SMEs owners how are registered with corporate affairs commission within North-Eastern State of Nigeria. The total number of SMEs who are registered with corporate affairs commission are 5,760. The research applied 10% sampling across the strata. According to Cooper and Schindler, (2006) a good sample should be the one of 10% to 30% of the entire population. The actual businesses sampled were arrived at by using simple random procedures to draw the sample from each stratum. A total of 576 questionnaires were given to business managers and owners which represent 10% of the population planned. In order to achieve the intended 576 interviews, 600 contacts were made. A designed questionnaire was used to collect data from a sample of 576 respondents through self-administration. The data were analysed using the SPSS (Statistical Package for

the Social; Sciences) software and Partial Least Squares-Structural Equation Modelling (PLS-SEM).

**Results and Discussion**

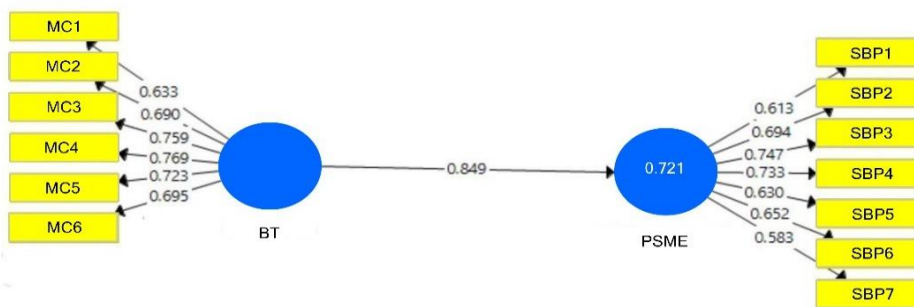
The study measured predictive relevance of the model and the level of R-squared values based on the PLS-SEM result of 20.8% and 6.9% of the total variance explained on the independent variable to dependent construct and independent variable to mediator, respectively.

These findings suggest that business training explained 20.8% of the variance in the performance of SMEs. Chin (1998b), classified three categories of R-square, 0.02 weak, 0.13 moderate and 0.26 substantial, thus based on the R-squared of this present study, it was found to be moderate and weak, respectively.

The structured model assessment used with the help of Smart PLS-3.2.7 to analyze the direct and indirect effect of the latent variables based on hypothesis. The hypothesis was tested by considering the path coefficient and indirect specific effect with “t” value.

**Figure 2.**

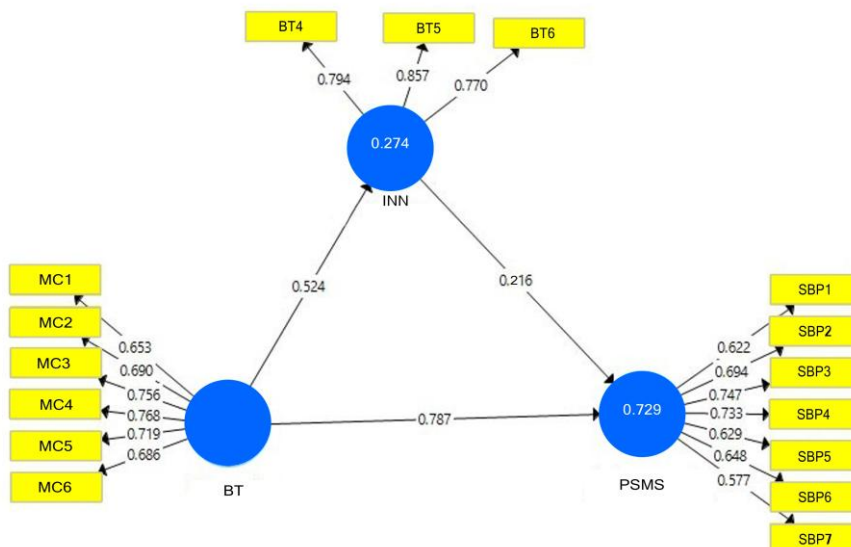
**BT- PSB PLS-PSME Run without Mediation**



Source: Aithor's computation, 2025

**Figure 3:**

**BT - PSME PLS-SEM Run with Innovation Mediation**



Source: Aithor's computation, 2025

Significant path coefficients have standardized values larger than 0.20. In most cases, values of less than 0.1 are not deemed significant. Figure 2. shows how the path coefficient BT-performance of SME is 0.849, which means that if BT moves one standard deviation away from its mean, Performance of SME should move 0.849 standard deviations away from its mean.

**Table 1: Path Coefficient and Significance**

| Path       | Value | Significant |
|------------|-------|-------------|
| BT - PSME  | 0.849 | Significant |
| INN - PSME | 0.216 | Significant |
| BT - INN   | 0.524 | Significant |

Note. if its greater than 0.2 is significant less than 0.1 is non-significant

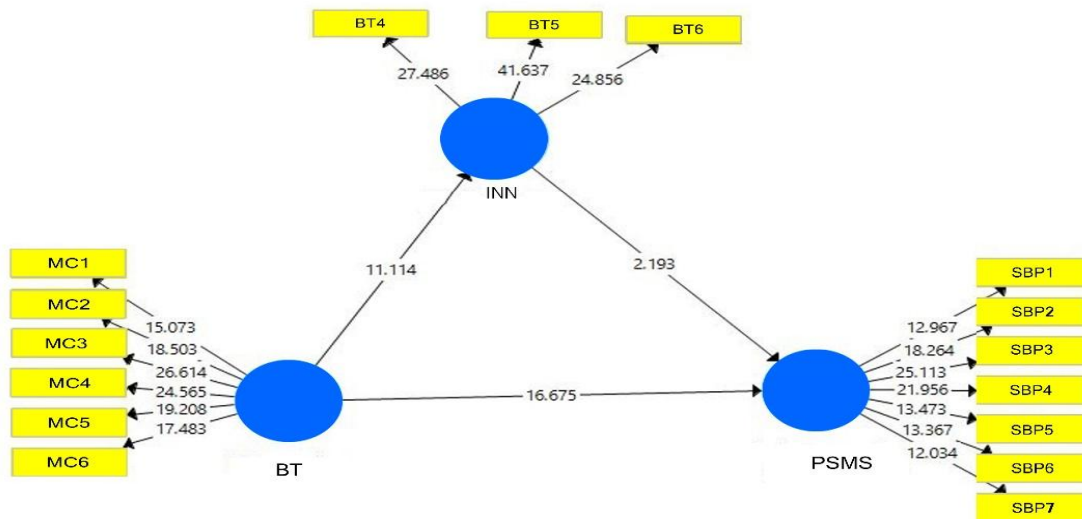
Source: Aithor's computation, 2025

**Testing Mediating Impact**

Additionally, PLS (SEM) bootstrapping was examined to test the mediation effect. (Hair, et al.,2017), state that it is one of the appropriate procedures to analyze through small samples.

**Figure 4.**

**Final model Bootstrapping Results**



Source: Aithor's computation, 2025

This is seen in Figure 4. Table 2 shows that the BT - PSME connecting path has a significant value of 16.675. In every other sense, the path coefficients of the inner model are statistically significant.

**Table 2: T-statistics of Path Coefficient**

| Direct Effect    | Original | Mean  | STD   | T Statistics | P Values |
|------------------|----------|-------|-------|--------------|----------|
| INN -> PSME      | 0.116    | 0.109 | 0.052 | 2.225        | 0.027    |
| BT -> INN        | 0.524    | 0.524 | 0.053 | 9.977        | 0.000    |
| BT -> PSME       | 0.787    | 0.795 | 0.048 | 16.421       | 0.000    |
| Mediating effect |          |       |       |              |          |
| BT ->INN -> PSME | 0.057    | 0.055 | 0.028 | 2.026        | 0.043    |

Note. a. The Relationship between Innovation and Performance of Small and Medium Enterprises

Source: Aithor's computation, 2025

**Hypothesis Testing**

The study shows that there is no significant relationship between innovation and performance of small and medium enterprises has been rejected. INN significant path ( $\gamma = 0.849$ ) coefficient has influence on performance of SMEs. From Figure 4, (the final model run PLS), it was concluded that the INN significantly correlate to PSME. Therefore, the H<sup>o</sup>1 test demonstrates support for the first condition which states that INN establishes a significant relationship with PSME.

*a. The Relationship between Business training and Innovation*

The effect of BT on innovation (H<sup>o</sup>2) was supported by a parameter estimate of 0.524 significant at the 0.01 level. Hence the Hypothesis H<sup>o</sup>2 is rejected. The level of innovation adoption positively influences the degree of small and medium enterprises Performance.

*b. The Relationship between Business Training and Performance of Small and Medium Enterprises*

It was considered that BT only contributes to the enhancement of PSME through the use of innovation. The link between innovation and PSME was substantiated by a parameter estimate of 0.116 ( $P < 0.01$ ), indicating that innovation is significant (Kimwolo *et al.*, 2012).

As a result, the effect of mediation was evaluated by incorporating innovation into the BT-PSME direct model. After the inclusion of innovation, the mediating role of innovation was tested to see if the connection between the BT variable and the dependent variable PSME changed. The BT will have significant influences on PSME through coherence elements in innovation, driving the BT level to its maximum. The overall goodness-of-fit t-value after bootstrapping indicates that the hypothesized structural model is rejected, and the structural path from BT to innovation was significant at t-value 9.977 ( $= 0.524$ ) or  $P < 0.01$ , satisfying one of the second criterion.

**Table 3: Mediation Levels of Innovation**

| Hypothesis       | Direct | Mediation | Mediation level   |
|------------------|--------|-----------|-------------------|
| H <sup>o</sup> 4 | 0.849  | 0.787     | Partial Mediation |

**Note. Innovation partially mediates the relationship**

*Source: Aithor's computation, 2025*

The final condition of the study is to observe if the mediating variable is included and the relationship between the independent and dependent variables weakens or disappears. Table 3 effectively shows the comparisons between the direct and mediation models. When the innovation variable was added, the significant direct influence of BT on PSME reduced from 0.849 to 0.787. According to Baron and Kenny's (1986) technique, innovation partially mediates the relationship between BT and PSME, implying that H<sup>o</sup>4 is rejected.

**Conclusion and Recommendations**

In conclusion, the business performance of SMEs located in the North-Eastern States of Nigeria will remain an important issue and agenda in Nigeria. It is believed that there is a huge opportunity to improve the business performance of SMEs in Nigeria through intensive business training that is equipped with appropriate innovation element and capabilities. In the end, the improved business performance will positively and significantly contribute to the nation's economic growth. The study also concludes that there is a mediating role of business training and performance of SMEs, where innovation has a significant impact on performance SMEs. As a result, it implies that improving the mediating role of innovation will have a greater impact on small and medium enterprises performance. The study recommends that management of the SMEs should adopt new or

beneficial business innovation. This is because better business innovation will be used to facilitate coordination between different functions such as marketing and manufacturing, thus improves better firm performance.

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