



The Effects of Entrepreneurship Education on Innovation Capabilities Among small businesses in Yewa South Local Government Area, Ogun State, Nigeria: Moderating Effect of Technological Adoption

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Abstract

The importance of innovation capabilities in driving economic growth and development cannot be overemphasized, particularly in today's competitive business landscape. However, there is a need to explore the link between entrepreneurship education and innovation capabilities in the context of Small businesses in the Developing Economy. This study examines the impact of entrepreneurship education on innovation capabilities among small businesses in the Developing Economy. The study also investigates the moderating effect of technological adoption on this relationship. This study employed a quantitative research approach, using a questionnaire to collect data from 300 Small Business owners/managers in Nigeria. The structural Equation Modelling approach was adopted for Analysis. The findings indicate that entrepreneurship education significantly influences innovation capabilities among Small businesses. Additionally, technological adoption moderates the relationship between entrepreneurship education and innovation capabilities. The study concludes that entrepreneurship education plays a crucial role in developing innovation capabilities among Small Businesses, and technological adoption enhances this relationship.

Keywords: *Entrepreneurship education, innovation capabilities, Small business, Nigeria, Technological Adoption*

Introduction

One of the most important factors in encouraging innovation among Nigeria's small firms is entrepreneurship education. It equips people with the knowledge, abilities, and attitudes they need to build, train, and successfully run their enterprises (Addah & Omogbiya, 2019). In Nigeria, entrepreneurship education is required to further the nation's sustainable development (Amuda, 2020). Education may support innovation-driven businesses, diversify the economy, and lessen reliance on established industries by encouraging entrepreneurship.

Unemployment among graduates is one of the major issues that emerging nations like Nigeria must contend with. This issue can be solved by entrepreneurship education, which gives people the abilities and perspective necessary to establish their own employment prospects (Oyebola, Irefin & Olaposi, 2015). Hence, by encouraging an entrepreneurial spirit, education enables people to spot market gaps, come up with novel solutions, and launch their own firms, thereby lowering the unemployment rate.

Innovation skills are essential for the success and survival of small firms in today's cutthroat business environment. Businesses can differentiate themselves through innovation, adapt to shifting market conditions, and develop new goods and services that address customers' changing requirements (Afolabi, Kareem, Okubanjo, Ogunbanjo, & Aninkan, 2017). Hence, small-scale enterprises in Nigeria can maintain their competitiveness, stimulate economic growth, and aid in general development by expanding their innovation capabilities.

The relationship between entrepreneurship education and innovation skills in the setting of small enterprises in Nigeria, notably in the Yewa South Local Government Area, has, however, received relatively little investigation. It is necessary to examine the distinctive contributions made by small firms in promoting innovation in the Nigerian setting, highlighting their capacity to respond to particular innovation requirements in fields and industries needing technical and vocational abilities. The moderating role of technological adoption in the link between entrepreneurship education and innovative capacity among small enterprises in Nigeria is also not well studied.

There is a dearth of literature on entrepreneurship education and innovation skills in Nigerian small enterprises. Studies have looked into the relationship between entrepreneurship training and Nigeria's economic development (Afolabi, 2015). Further study is necessary, nevertheless, to better understand how entrepreneurship education specifically helps small enterprises grow their capacity for innovation. The moderating role of technological adoption in the link between entrepreneurship education and innovative capacity among small enterprises in Nigeria is also not



well studied. The distinctive contributions of small enterprises to innovation in the Nigerian environment must also be explored, especially in fields and areas that demand technical and vocational skills (Agboola, 2010).

The goal of the project is to investigate how entrepreneurship education affects the ability of small firms in the Yewa South Local Government District to innovate. The study specifically attempts to look into how technological adoption affects the relationship between entrepreneurship education and innovative capacity among local small enterprises. Policymakers, educators, and other stakeholders can better grasp the connection between entrepreneurship education and innovation skills by undertaking this study, which will eventually promote regional economic growth and development.

The study will go over pertinent literature on the idea of entrepreneurship education and how it might help small businesses become more innovative. It will review prior research that has investigated the relationship between entrepreneurship training and innovative skills in diverse circumstances (Afolabi et al., 2017). The study will also go through the particular roles that small firms play in promoting innovation in the Nigerian environment, emphasizing their capacity to meet particular innovation requirements in fields and industries needing technical and vocational skills (Agboola, 2010). In the study's final section, the moderating role of technology adoption in the relationship between entrepreneurship education and innovation capacities will be reviewed. It will be discussed how technology adoption can help or hurt small enterprises' ability to innovate.

It has been demonstrated that entrepreneurship education is essential for nurturing innovation capabilities in small enterprises (Addah & Omogbiya, 2019). Developing, grooming, and successfully operating their enterprises require the information, abilities, and attitudes that aspiring entrepreneurs must possess (Addah & Omogbiya, 2019). In order to promote sustainable development, contribute to economic growth, and advance societal goals in Nigeria, entrepreneurship education is required (Afolabi, Kareem, Okubanjo, Ogunbanjo, & Aninkan, 2017).

The relationship between entrepreneurial education and innovation skills has been studied in a number of scenarios. For instance, a Kenyan study discovered that graduates of Technical and Vocational Education and Training (TVET) need entrepreneurship education to be able to innovate (Mbore, 2021). Another study assessed the suitability of entrepreneurship education provided to Nigerian undergraduates to start and run a new business, and it discovered that entrepreneurship education has a favorable effect on the students' entrepreneurial intention and attitude (Oyebola, Irefin & Olaposi, 2015).

Small firms in Nigeria have a special role in fostering innovation since they are frequently more adaptable and nimble than larger companies, allowing them to react swiftly to shifting market conditions and client demands (UNCTAD, 2010). In industries and areas that demand technical and vocational abilities, small firms have the capacity to satisfy unique innovation demands, hence promoting economic growth and development.

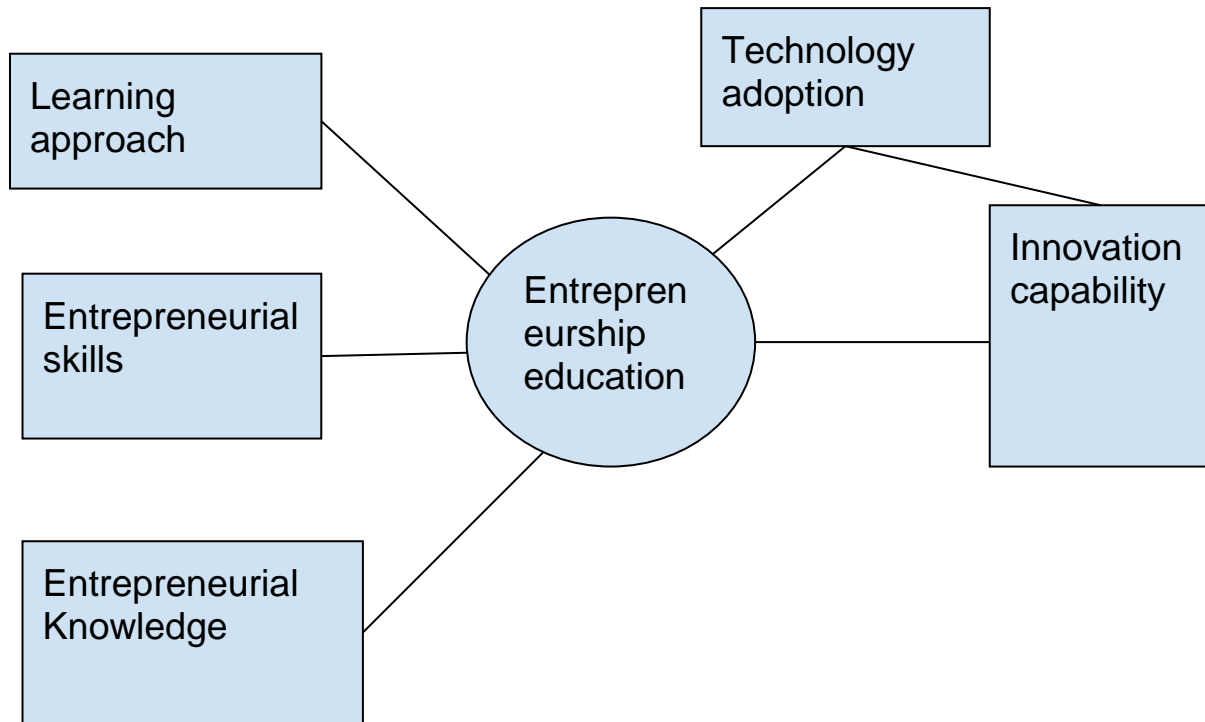
An important field of research focuses on how technological adoption affects the nexus between entrepreneurship and innovation. Technology adoption can help or hurt small enterprises' ability to innovate (Mbore, 2021). The ability to innovate may be more affected by entrepreneurship education in environments with high levels of technological adoption. Yet, the effect of entrepreneurship education on innovation aptitude may be restricted in a society with low levels of technological adoption (Mbore, 2021).

The theories of Bandura's social learning theory and Schumpeter's theory of creative destruction can be used to explain the concepts and mechanisms that underlie entrepreneurship education and its effects on innovative capacities. The importance of entrepreneurs as change agents who launch novel goods, procedures, and business models to challenge the status quo is emphasized by Schumpeter's theory (Amuda, 2020). According to Bandura's social learning theory, exposure to successful entrepreneurs as role models can raise people's self-confidence and willingness to engage in entrepreneurial endeavors (Fellhofer, 2017).

In general, promoting innovation capabilities among Nigeria's small firms depends heavily on entrepreneurship education. In the Nigerian setting, small enterprises play a particularly important role in fostering innovation and fostering economic progress. The necessity of specialized entrepreneurship education programs that address the particular issues faced by small enterprises in various contexts is highlighted by the role of technological adoption in the entrepreneurship-innovation nexus.



Conceptual Model



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Methodology

The population of this study is made up of selected Small and Medium Businesses (SMEs) in the Ogun State , who have been in operation for at least a year and are still doing so now. This study used a quantitative research methodology. In order to gather information from 300 small company owners and managers in Yewa South Local Government Area, Ogun state, Nigeria, the study's SME population looked at selected 1500 companies. The survey questionnaire was divided into three sections: innovation skills, entrepreneurship education, technology adoption and demographic data.

AMOS analysis of the structural equation model A model is built using the theoretical analysis as the foundation for the subsequent processes. The concepts and dimensions to be explored from the theoretical model have been developed through theoretical investigations and hypothesis growth. In this investigation, a multivariate structural equation model (SEM) methodology was adopted. SEM's main advantage over other multivariate methods is its ability to mix measurement models and structural models simultaneously. Moreover, SEM methods can assess both direct and indirect effects. AMOS 4 is the program utilized in this study's SEM data processing.

PRESENTATION AND INTERPRETATION OF RESULTS

Unsaturated Estimate of the Structural Equation Model

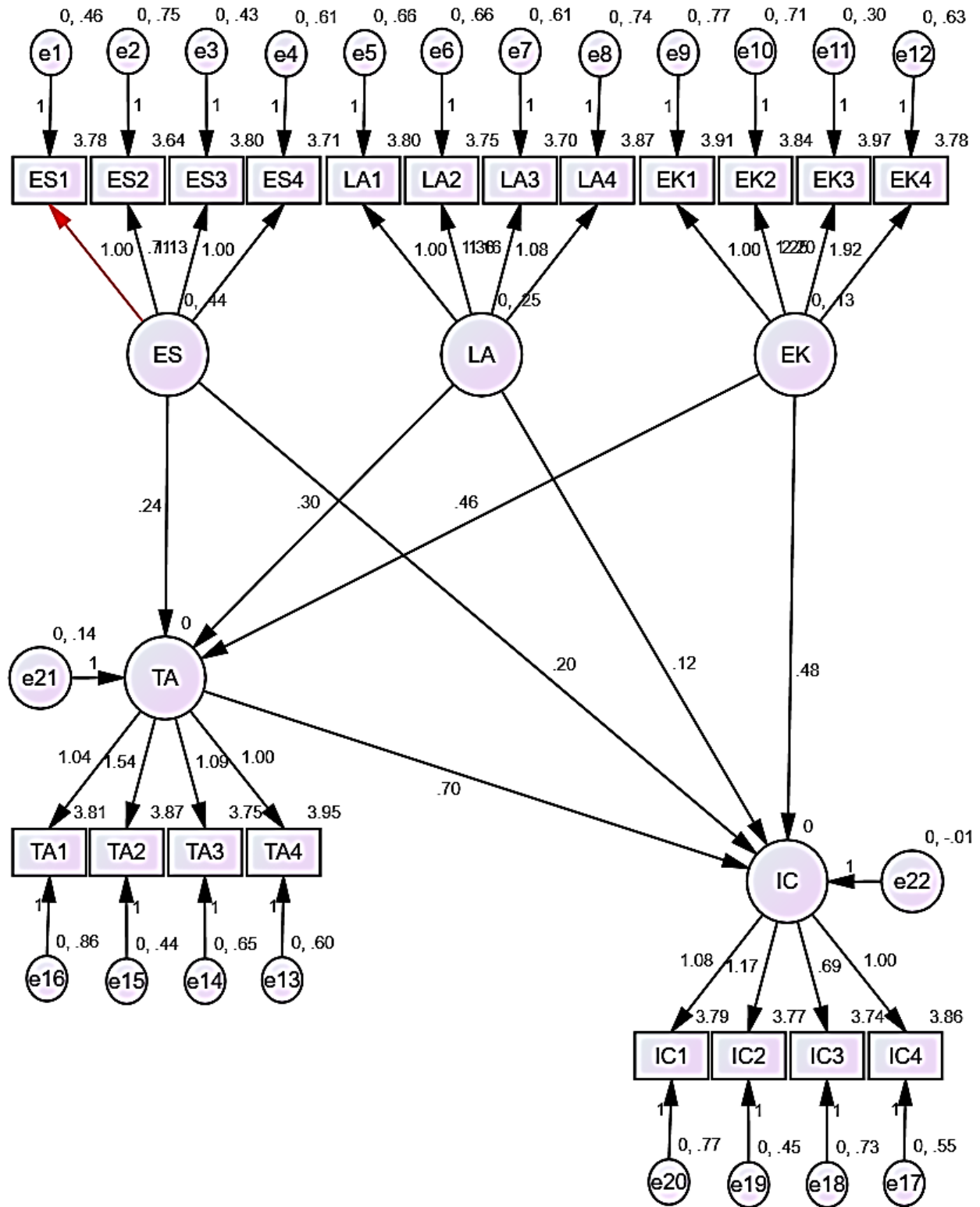


Figure 1: Structural Equation Model Diagram for the Study



Figure 1 shows the structural equation of the model, the effect estimate were presented, and other statistic was presented including the mean, variance, standard errors, and residual errors of the variables and model. In the structural equation modeling diagram, the variables were represented by their respective acronyms used in the study. "ES" stands for Entrepreneurial Skills, "LA" for Learning Approach, and "EK" for Entrepreneurial Knowledge. These three variables are considered independent variables. The moderating variable is "Technology Adoption," represented as "TA," and the dependent variable is "Innovation Capability," represented as "IC." The results of the structural equation modeling indicate a positive influence of the three aspects of entrepreneurship education on innovation capability. Additionally, it was found that when technology adoption is considered as a moderating factor, the positive impact of entrepreneurship education on innovation capability is even more pronounced.

Table 1: Regression Weights

| Variables | β | S.E. | C.R. | P-Value | Decision |
|---|---------|------|-------|---------|---------------|
| Technology Adoption \square Entrepreneurial Skills | .238 | .059 | 4.065 | *** | Significant |
| Technology Adoption \square Learning Approach | .300 | .086 | 3.485 | *** | Significant |
| Technology Adoption \square Entrepreneurial Knowledge | .456 | .129 | 3.541 | *** | Significant |
| Innovation Capability \square Technology Adoption | .703 | .140 | 5.033 | *** | Significant |
| Innovation Capability \square Entrepreneurial Skills | .201 | .056 | 3.590 | *** | Significant |
| Innovation Capability \square Learning Approach | .116 | .074 | 1.570 | .116 | Insignificant |
| Innovation Capability \square Entrepreneurial Knowledge | .476 | .130 | 3.668 | *** | Significant |

Source: Extracted from AMOS Text Output

The results from the Structural Equation Modeling (SEM) analysis reveal important insights about the relationships between the variables under investigation. Notably, significant positive connections were identified between Technology Adoption and three key factors: Entrepreneurial Skills ($\beta = 0.238, p < 0.001$), Learning Approach ($\beta = 0.300, p < 0.001$), and Entrepreneurial Knowledge ($\beta = 0.456, p < 0.001$). This implies that as Entrepreneurial Skills, Learning Approach, and Entrepreneurial Knowledge increase, Technology Adoption also rises, signifying their vital roles in driving technology uptake.

Furthermore, the analysis underscores the crucial role of Technology Adoption in influencing Innovation Capability ($\beta = 0.703, p < 0.001$). This significant positive relationship indicates that as Technology Adoption increases, Innovation Capability also grows, highlighting the importance of adopting new technologies for enhancing innovation within the context being studied. Another significant positive association emerged between Innovation Capability and Entrepreneurial Skills ($\beta = 0.201, p < 0.001$) as well as Entrepreneurial Knowledge ($\beta = 0.476, p < 0.001$), showcasing their considerable impact on fostering innovation within the studied domain.

However, the results also indicate a lack of statistical significance in the relationship between Innovation Capability and Learning Approach ($\beta = 0.116, p = 0.116$), suggesting that the chosen Learning Approach might not be a significant driver of Innovation Capability within the given parameters. These findings collectively emphasize the importance of Entrepreneurial Skills, Learning Approach, and Entrepreneurial Knowledge in influencing both Technology Adoption and Innovation Capability, while revealing that the specific Learning Approach being examined might not be a significant contributor to innovation within this research context.

In terms of "Technology Adoption" as a moderating variable in this context suggests that it plays a role in influencing the strength or direction of the relationships between other variables. Specifically, when we consider the relationships between Technology Adoption and various factors, such as Entrepreneurial Skills, Learning Approach, and Entrepreneurial Knowledge, the presence of Technology Adoption seems to influence the impact of these factors on the outcome being studied, which could be Innovation Capability in this case.

From the results provided, it's evident that Technology Adoption has a significant moderating effect on Innovation Capability. The positive and statistically significant relationship between Technology Adoption and Innovation Capability ($\beta = 0.703, p < 0.001$) indicates that the level of Technology Adoption affects the degree to which Innovation Capability is enhanced. In other words, the more an entity or individual adopts technology, the more likely they are to have improved Innovation Capability.



Additionally, the other significant relationships involving Technology Adoption suggest that this variable moderates the effects of Entrepreneurial Skills ($\beta = 0.238, p < 0.001$), Learning Approach ($\beta = 0.300, p < 0.001$), and Entrepreneurial Knowledge ($\beta = 0.456, p < 0.001$) on Technology Adoption. This implies that the presence of Technology Adoption amplifies the positive impact of these factors on the adoption of technology. Therefore, the findings suggest that Technology Adoption acts as a moderating factor, shaping the relationships between key factors like Entrepreneurial Skills, Learning Approach, and Entrepreneurial Knowledge and the extent of Technology Adoption and, consequently, its influence on Innovation Capability within the studied context.

Table 2: Squared Multiple Correlations

| Variables | Estimate |
|---|----------|
| Technological Adoption \square Entrepreneurship Education | .352 |
| Innovation Capability \square Entrepreneurship Education | .847 |

Source: Extracted from AMOS Text Output

Table 2 shows the squared multiple correlation estimates, revealing the extent to which variance in the dependent variables is accounted for by the independent variable, Entrepreneurship Education. These values serve as critical indicators of the strength and significance of the relationships being examined.

The first estimate, Technological Adoption \leftarrow Entrepreneurship Education (Estimate = 0.352), suggests that approximately 35.2% of the variability in Technological Adoption can be attributed to the influence of Entrepreneurship Education. This finding underscores the notable role that Entrepreneurship Education plays in shaping the adoption of technology within the context being studied. However, it's important to recognize that there may be other factors at play in influencing technological adoption, and this estimate provides insight into the specific contribution of Entrepreneurship Education.

The second estimate, Innovation Capability \leftarrow Entrepreneurship Education (Estimate = 0.847), reveals a substantial influence, indicating that approximately 84.7% of the variance in Innovation Capability can be explained by Entrepreneurship Education. This high squared multiple correlations suggests that Entrepreneurship Education is a dominant and significant factor in fostering Innovation Capability within the studied setting. The strong correlation underscores the potential of Entrepreneurship Education to drive innovation. However, it's essential to conduct further research to understand the mechanisms and directions of this relationship and to consider additional factors that may contribute to both technological adoption and innovation capabilities.

Conclusion

According to the draft, we can say that entrepreneurship education significantly affects the study area's capacity for both technological adoption and creativity. According to the estimations, entrepreneurial education is responsible for about 35.2% and 84.7%, respectively, of the variation in technological adoption and innovative capability.

Recommendations

It is advised to invest in entrepreneurship education programs to further encourage technological adoption and innovation. The knowledge and abilities required to adopt new technologies and promote innovation can be developed by individuals and organizations with the assistance of these programs. More study should be done to comprehend the mechanisms and directions of this relationship as well as to find other elements that may influence the capacity for technological adoption.

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