

The Role of Self-Efficacy in Mediating Entrepreneurial Alertness and Skill Development in Secondary Schools

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DOI: 10.15294/eeaj.v14i1.12593

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Article History

Received: 23 August 2024

Approved: 04 March 2025

Published: 05 March 2025

Keywords

Education; Entrepreneurial Alertness; Entrepreneurial Skill Development; Entrepreneurship; Students' Self-Efficacy

Abstract

This study examined the mediating effect of students' self-efficacy on the relationship between entrepreneurial alertness (EA) and entrepreneurial skill development (ESD). This study employed a correlational survey research design to establish the relationship among the variables. The population of the study is 3423 senior secondary students in Enugu State. The sample size is 379 students. Participants were purposely selected. The data were collected using the Entrepreneurial Alertness Questionnaire for Senior Secondary Students (EQS). The questionnaire's reliability was assessed using the Cronbach alpha and an overall reliability coefficient of 0.96 was obtained. Survey data were entered into SPSS and transferred to WarpPLS version 7.0 for analysis. Path analysis was used because it presents the network graphical relationship among variables. The path diagram and coefficients were utilized to answer the research questions, and the hypothesis was tested at a significance level of 0.05. There was a strong positive relationship between entrepreneurial alertness and skill development ($\beta = 0.36$; $P=0.01$) among senior secondary students. Students' self-efficacy was a significant mediator between entrepreneurial alertness and skill development which led to a 54% ($r^2 = 54$) variation in students' entrepreneurship skills. This study concludes that students' self-efficacy significantly moderates the relationship between entrepreneurial alertness and skill development among secondary school students. Enhancing students' self-efficacy has both direct and indirect positive effects on their entrepreneurial skills development. Since self-efficacy significantly mediates the relationship between EA and ESD, educational administrators and teachers should ensure that instructional approaches stimulate secondary school students' self-efficacy.

How to Cite

Chukwu, E.O., & Amedu, A.N.(2025). The Role of Self-Efficacy in Mediating Entrepreneurial Alertness and Skill Development in Secondary Schools. *Economic Education Analysis Journal*, 14 (1), 94-105.

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p-ISSN 2252-6544

e-ISSN 2502-356X

INTRODUCTION

The concepts of entrepreneurship play an important part in today's society. This is due to the influence they have on regional growth, the creation of new jobs, the revitalization of incumbent firms, and the development of interdisciplinary innovations. Entrepreneurship raised living standards and generated income for entrepreneurs, their associates, the neighbourhood, and linked enterprises. Cultivating these skills of entrepreneurship is the main objective of entrepreneurship education. Entrepreneurship education encourages students to adopt positive attitudes, think innovatively, and gain self-reliance skills, reducing dependence on government jobs (Sultana, 2017). The goal is to improve students' ability to participate in socio-economic activities to meet societal needs by providing goods and services (Bashehu, Mustapha, Joseph, Nwankwo & Abdu, 2020). According to Hussain and Norashidah (2015), this education focuses on not only theoretical knowledge but also practical skills and the development of a mindset conducive to entrepreneurship. An entrepreneurship education program can teach students to identify opportunities, equipping them with essential skills for success. It offers a new perspective that uncovers opportunities, reignites ambition, and fosters creativity and critical thinking in students (Oyinlola et al., 2024) and capabilities to overcome the hurdles and exploit the opportunities given by the modern, technology-driven business world (Blankesteijn et al., 2021).

Entrepreneurship education inculcates entrepreneurship alertness and skills development in students to enable them to pursue their entrepreneurial goals while also making a significant contribution to the socioeconomic development of their communities and the world (Turner & Gianiodis, 2018). Entrepreneurial alertness is an essential competency that is cultivated through entrepreneurial education, as it equips individuals with the ability to harness available resources and create value (Puapradit & Supan, 2021). Entrepreneurial

alertness is a fundamental component of entrepreneurship education that encompasses more than merely identifying opportunities. Entrepreneurial alertness is the skill of gathering and carefully analysing information to pinpoint and seize potential opportunities (Zhao et al., 2021) as well as awareness and discerning approach that considers factors that contribute to the student's identification and pursuit of entrepreneurial prospects (Neneh, 2019 & Sharma 2019).

Students paying attention and awareness of upcoming opportunities in the world critically drive entrepreneurial alertness (Tunde, Kee, & Lukman, 2020). Furthermore, studies (Biswas & Verma, 2021; Gill et al., 2021; Jiatong et al., 2021; Odebunmi et al., 2020; Urban, 2020; Alvi & Sharma, 2017) have delved deeper into entrepreneurial alertness and found that it plays a crucial role in prompting action on potential opportunities, based on perceived interest and viability within the entrepreneurial context. In essence, students with heightened entrepreneurial alertness exhibit a propensity to adapt to changes in the environment and align their intellectual structure with accessible information (Ugwueze, & Ugwu, 2022). Therefore, entrepreneurship alertness may contribute significantly to the development of entrepreneurship skills.

Entrepreneurship skills encompass a multifaceted set of cognitive, behavioural, and motivational competencies that are essential for individuals to excel in entrepreneurial endeavours (Martínez-Martínez & Ventura, 2020). These skills enable individuals to not only identify and seize opportunities but also navigate the uncertainties inherent in the business landscape while creating value for various stakeholders (Barrett, Jones, & McEvoy, 2016). Entrepreneurship skills are a set of competencies that enable students to recognize opportunities, make informed decisions, put their ideas into practice, overcome obstacles, and manage resources appropriately to achieve goals and succeed (Costin et al., 2018). It can be applied to a variety of different job roles and industries, and students can develop

their own version of it. These skills could help students build confidence, creativity, collaboration, and problem-solving skills that could serve them regardless of their career path.

As a result, students' self-efficacy can play a moderating role in the association between entrepreneurial alertness and skill development. However, there is a lack of empirical studies regarding the moderating role of students' self-efficacy in the relationship between entrepreneurial alertness and skill development in secondary school. The concept of self-efficacy refers to a student's belief in their ability to accomplish a task, which has been used widely in the study of career choice and decision-making (Arghode et al., 2021). According to Newman et al. (2019), self-efficacy is an attitude in which one is confident of the abilities and trusts in one's ability to succeed in a given task or challenge. It serves as an indicator of confidence in one's abilities and trust in one's capability. Self-efficacy is crucial in enabling students to take risks, cope with setbacks, and persist even when things do not go according to plan. Self-efficacy influences decisions, commitment, and willpower, which makes it an important factor in comprehending human behaviour. Students with high self-efficacy are more likely to opt for challenging and complex tasks and can use more cognitive strategies useful for addressing learning, organizing their time, and regulating their efforts (Ossai & Amedu, 2023), while students with lower self-efficacy tend to avoid them (Riopel, 2023). The greater a student's degree of self-efficacy, the more determined the student will be and the more likely the chances to succeed at achieving a goal (Rakhmawati & Mustadi, 2019). Students' Self-efficacy contributes to the development of entrepreneurial intentions and, in turn, the likelihood that new ventures will be created (Kurppa, 2015).

Previous studies abound on entrepreneurial alertness, entrepreneurship skill development, and students' self-efficacy. A study by Obschonka et al., (2017) developed a mediation model of competencies on the relationships among personality, entrepreneurial

alertness, and career intention. The results revealed that entrepreneurship alertness and career intention are expressions of entrepreneurship personality structure, which are predicted by different underlying competencies. Gill et al., (2021) investigated whether entrepreneurial self-efficacy is an important moderator of cognitive flexibility, entrepreneurial alertness, and entrepreneurial intentions. The finding revealed that cognitive flexibility positively predicts the conditional direct relationship between entrepreneurial alertness and entrepreneurial intentions, and entrepreneur self-efficacy is a significant moderator. Gill's study is related to the current study because self-efficacy and entrepreneurship alertness are variables in the current research. However, the study is different as it includes cognitive flexibility and entrepreneurial intention and it was not conducted on the population of Secondary school Students. Furthermore, Indrawati et al., (2015) Moderation Effects of Entrepreneurial Self-efficacy in Relation between Environmental Dimensions and Entrepreneurial Alertness and the Effect on Entrepreneurial Commitment. The study found that entrepreneurial self-efficacy not only served as a moderator but also as a predictor of the relationship between environmental complexity and entrepreneurial alertness. Indrawati's study relates to the current research because of entrepreneur alertness, which is part of the current study. However, the study differs because it focused on entrepreneurship self-efficacy and the environmental dimension which are not part of the current study. While Indravati's work was done on the population of the working class, the current study was done on secondary school students. A study conducted by Urban (2020) examined entrepreneurial alertness, self-efficacy, and social entrepreneurship intentions. The study reported that entrepreneurial alertness substantially affected societal entrepreneurial intentions, whereas self-efficacy mediated the effect of entrepreneurial alertness on social entrepreneurship intentions. This study conducted by Urban is related to this study due to variables

such as self-efficacy and entrepreneurial alertness; however, the population studied does not include secondary school students. In addition, Puapradit and Supatn (2020) investigated the influence of entrepreneurial alertness and self-efficacy on entrepreneurial intention among undergraduates. The study revealed that entrepreneurial alertness and self-efficacy significantly affected work effort and that entrepreneurial alertness and risk-taking directly impacted entrepreneurial intention, whereas self-efficacy indirectly affected entrepreneurial intention through work effort. This research conducted by Puapradit and Suspatn pertains to the current study on entrepreneurial alertness and self-efficacy, which are variables of this study. In contrast to the previous study that focused on the working class, this study specifically examined secondary school students.

There is a notable absence of empirical evidence regarding the moderating influence of students' self-efficacy on the relationship between entrepreneurial alertness and skill development. Specifically, there is no empirical evidence linking students' entrepreneurial alertness and entrepreneurial skill development. This study attempts to fill this gap in the literature by establishing the magnitude and direction of the relationship between entrepreneurship alertness and skill development among secondary school students. Additionally, students' self-efficacy is an important mediator in the literature of entrepreneurship education. However, the moderating effect of students' self-efficacy has not been established on the relationship between entrepreneurial alertness and skill development. This study tends to close the lacuna in the literature in terms of understanding the mechanisms through which students' self-efficacy mediates the relationship between entrepreneurial alertness and skill development among secondary school students.

This study anchored on the theory of self-efficacy and entrepreneurial alertness. The theory of self-efficacy was propounded by Bandura in 1986 (Schunk & DiBenedetto, 2021). This theory states that self-efficacy

is confidence in an individual's potential to achieve their desired goal. This theory strongly emphasises that self-efficacy is a strong mediator between individuals' intentions and the actualization of those intentions (Zhao et al., 2005). Therefore, students' self-efficacy could mediate their entrepreneurial alertness and entrepreneurship skills development in senior secondary school. The theory of entrepreneurship alertness was introduced by Kirzner in 1984. It focuses on the ability to spot overlooked opportunities, which is crucial to identifying and creating opportunities. This theory suggests that entrepreneurs are particularly attuned to exploring new avenues of development. Kirzner emphasises that alertness enables individuals to uncover valuable opportunities that others overlook, contributing to meeting human needs. While this theory is relevant to understanding how students with entrepreneurial skills can identify opportunities for wealth creation and job creation, its direct application to secondary school students may face challenges. As a result, students may not experience the same stimuli that trigger entrepreneurial alertness in real-world situations if they continue to lack practical training for what they learned in class.

This current study will make a significant contribution to Sustainable Development Goals (SDGs) goals 1 and 4, which seek to eradicate poverty in all its forms worldwide by 2030, promote inclusive and equitable quality education for all, and facilitate lifelong learning opportunities for all (Goal 4 | Department of Economic and Social Affairs, n.d. & Edokpolor, 2020). In addition, this research would be significant in contributing to African Union Goal 1.2, which seeks to create well-educated citizens and a skills revolution driven by science and technology innovation by 2063 (Goals & Priority Areas of Agenda 2063 | African Union, n.d. & Sheriff, 2024). In the educational sector, the findings of this study will be significant to educational administrators and teachers since they will unveil the mediating role of students' self-efficacy on their relationship between entrepreneurship alertness and entrepreneurship skill development

at senior secondary school. This study seeks to address the research question: To what extent does students' self-efficacy serve as a mediator in the relationship between entrepreneurial alertness and skill development?

METHODS

The ethics committee of the University of Nigeria Nsukka approved this study. It is important to note that the author explained the objectives of the study to the selected participants before obtaining their consent. They were informed that their identity would not be revealed. This study used a correlational research design. The correlation method was used because Nworgu (2015) noted that it aims to establish the strength and direction of the relationship between variables. It facilitates comprehension of the intricate interconnections between two or more variables. This study also sought to establish the mediating role of students' self-efficacy on entrepreneurship alertness and skill development. The population for the study was drawn from 7,237 registered senior secondary students in the 2023–2024 academic session in Awgu local government. The purposive sampling technique was to sample schools that offer entrepreneurship courses. Through homogenous sampling, Senior Secondary Students 2 (SS-SII) was selected. Through the random sampling technique, simple random sampling was used to draw 379 participants.

The instruments used for the study were the Entrepreneurial Alertness Questionnaire (EAQ), Entrepreneurship Skills Development Questionnaire (ESDQ), and General Self-Efficacy Scale (GSE). EAQ was adopted from Tang et al., (2012). The instrument is made up of 36 items, and it is structured in four response options: Very Often (4), Often (3), Sometimes (2), and Rarely Never (1). The entrepreneurship skill development questionnaire (ESDQ) was adopted from The ESDQ instrument is made up of 28 items and structured on a 5-point Likert scale option: no skill development (1), weak skill development (2), moderate skill development (3), consideration

skill development (4), and strong skill development (5). The General Self-Efficacy Scale (GSE) was adopted from Luszczynska et al. (2010). The instrument is made up of 20 items with rating options of not at all true (1), hardly true (2), moderately true (3), and exactly true (4). The validity of the instrument was established. Three experts from the Entrepreneurship Education Department at the University of Nigeria, Nsukka, assessed the face and content validity of the instrument. Their recommendations were utilized to revise the instruments accordingly. Cronbach's Alpha reliability analysis was used to determine the consistency of these instruments. Reliability coefficients of 0.87 for EAQ, 0.78 for ESDQ, and 0.88 for GSE were established. The researcher administered 379 copies of the questionnaire to respondents in the study area on a person-to-person basis. A week was used to administer and collect the instruments. Of the 379 copies of the questionnaire administered, 361 copies were filled out and returned, representing a 95% return rate.

This study used path analysis to analyse the datasets. First, questionnaire data were coded into SPSS. Second, the coded data in SPSS was saved in Excel format and was imported into WarpPLS version 7.0 for data analysis. WarpPLS was used for path analysis. The path coefficient was utilised to analyse all the data collected to answer the research question. It was also used to test the hypothesis formulated at the 0.05 level of significance. It was suitable for this study because it was interested in establishing the direct magnitude of relationships among variables. It helps to examine the relationships between a dependent variable and two or more independent variables.

In Figure 1, a hypothetical model shows the moderating impact of self-efficacy on the relationship between entrepreneur skill development and entrepreneurial alertness before data collection. In this path model, one path connects entrepreneurship alertness and entrepreneurship skill development. In addition, two paths connect entrepreneurship alertness and entrepreneurship skill development through students' self-efficacy.

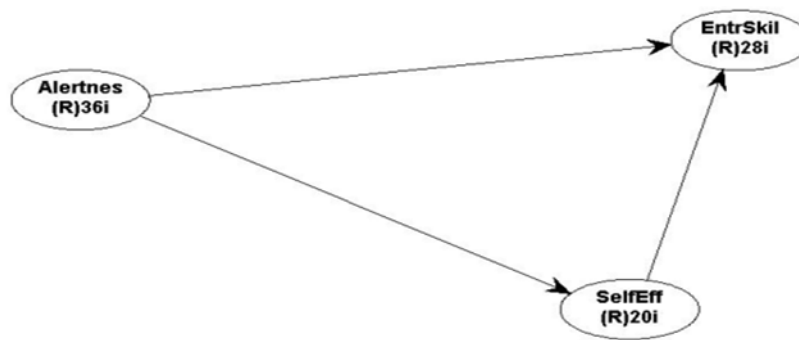


Figure 1. The Part Model of Moderating Impact of Students' Self-efficacy

RESULTS AND DISCUSSION

This study captured demographic variables, including the gender and age of the participants. In the sample of 361 participants that completed the questionnaire, 198 were female and 163 were male. The mean age of these participants was 17.84. The youngest participant was 16 years and the oldest participant was 19 years.

Research Question: Does students' self-efficacy serve as a mediator in the relationship between entrepreneurial alertness and skill development?

Figure 2: Path Diagram showing the mediating and moderating role of self-efficacy in the relationship between entrepreneurial alertness and entrepreneurship skill development of senior secondary students.

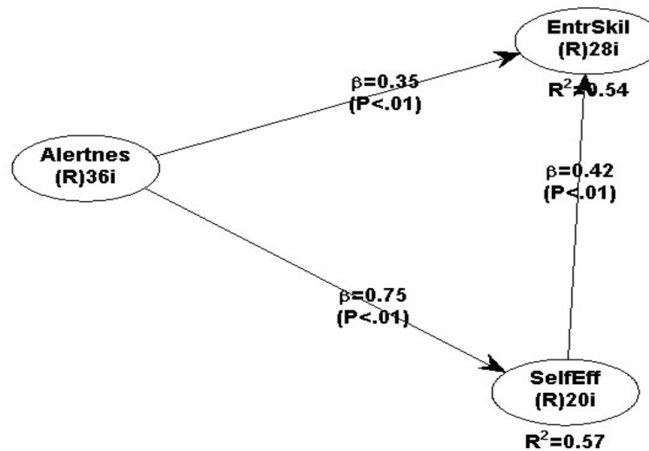


Figure 2. Path Diagram Showing the Moderation Effects of Self-Efficacy on the Relationship Between Entrepreneurial Alertness and Self-Efficacy of Senior Secondary Students

Table 1. Path Analysis of the Moderating Effect of Students' Self-Efficacy on Entrepreneurial Alertness, and Skill Development

Variable	Beta	Effect Size f^2	R^2	P-value	Decision
Alertness→EntrSkil	0.35	0.241		0.010	Significant
Alertness→Self-Efficacy	0.75	0.567	0.57	0.010	Significant
Self-Efficacy→Entr Skill	0.42	0.297		0.010	
Alertness→Self-Efficacy→Entr Skill	0.32	0.218	0.54	0.001	Significant

Source: Processed data, 2024

Figure 2 shows the mediating influence of self-efficacy on the relationship between alertness and entrepreneurship skill development among senior secondary students. The path that links entrepreneurial alertness to entrepreneurship skill development had a path coefficient of 0.35 with an effect size of 0.241. This indicates a strong positive relationship between entrepreneurship alertness and skill development. A one-unit increase in programs and government policies that promote entrepreneurship alertness results in a 0.35-unit increase in entrepreneurship skill development. The effect size ($f^2=0.241$) suggests a moderate relationship between entrepreneurship alertness and skill development. The path linking entrepreneurial alertness to self-efficacy demonstrated a path coefficient of 0.75, with an effect size of 0.56. This implies that a unit increase in entrepreneurship alertness leads to a 0.75 increase in students' self-efficacy. The effect size ($f^2=0.567$) indicates that the impact of alertness on self-efficacy significantly accounts for 57% of the variation in students' self-efficacy. The relationship between self-efficacy and entrepreneurial skill development had a path coefficient of 0.42, with an effect size ($f^2=0.297$), indicating that a unit increase in students' self-efficacy results in a 0.42 increase in their entrepreneurial skill development, which is classified as moderate. The connections between students' entrepreneurship alertness, self-efficacy, and entrepreneurship skill development showcased a path coefficient ($\beta=0.320$), an effect size of ($f^2=0.218$), and a coefficient of determination ($r^2=0.54$). This path coefficient illustrates a positive association between students' entrepreneurship alertness and skill development as moderated by self-efficacy. The moderating effect size of self-efficacy is medium, explaining 54% of the variation in entrepreneurial skill development.

Hypothesis: Students' self-efficacy is not a significant mediator of the relationship between entrepreneurial alertness and skill development.

In Figure 2, the paths that link entrepreneurship alertness to self-efficacy and entrepreneurship skill development (Alertness→Self-Efficacy→Entr Skill) in the model are positive and significant at the 0.05 level ($\beta = 0.320$, $f^2 = 0.218$; $r^2 = 0.54$; $p = 0.001$). In addition, the coefficient of determination r^2 indicates that the mediation influence of students' self-efficacy on the relationship between entrepreneurial alertness and skill development explained 54% of the variation in students' entrepreneurship skill development. However, the 46% variation in students' entrepreneurship development could be attributed to other variables not included in the model. Therefore, the null hypothesis, which states that self-efficacy is not a significant mediator of the relationship between entrepreneurial alertness and entrepreneurship skill development, was rejected. Hence, self-efficacy significantly mediates the relationship between students' entrepreneurial alertness and skill development among senior secondary school students. In addition, all other direct path coefficients are significant at a 0.05 level of significance ($\beta=0.35$; $p=0.01$; $\beta=0.75$, $p=0.01$; $\beta=0.42$, $p=0.01$).

Based on this study's findings, students' belief that they can do something is essential to their entrepreneurial alertness and skill development. The unidirectional flow of relationships among these variables shows that entrepreneurship alertness influences entrepreneurship skills development through self-efficacy. The outcome of this study could be attributed to the economic environment of the selected participants, where entrepreneurship skills are valued and students are encouraged to imbibe these features in their daily activities. Students are encouraged to cultivate and group entrepreneurial habits to be self-reliant as well as an alternative source of income for households. Students' self-efficacy is a crucial attribute of entrepreneurship alertness and entrepreneurship skill development, based on this study's findings. The results of this study

can be linked to the ongoing initiatives of the Enugu State Government aimed at enhancing entrepreneurship awareness throughout all local governments. This effort is reflected in the government's support for small and medium-scale enterprises, the provision of capital loans to emerging entrepreneurs, and the establishment of skill acquisition centres in both urban and rural settings (Okonwko et al., 2019). Additionally, these findings may also be connected to educational initiatives implemented by the Enugu State Government, which focus on instilling entrepreneurship awareness and skills among secondary school students across all local governments. This is evident through the educational workshops and seminars organized by the State Government for both teachers and students in secondary schools. Such programs have contributed to the enhancement of self-efficacy in practical skills, financial literacy, and technical competencies among educators and students, all of which are vital for fostering entrepreneurship skills. A study conducted in Enugu has indicated that workshop programs positively influenced problem-solving abilities, while mentorship initiatives significantly contributed to reducing unemployment rates (Orga et al., 2023). These state government programs have effectively bolstered students' self-efficacy and heightened their entrepreneurial awareness.

This study aligns with Urban's findings, which found that entrepreneurship alertness positively mediates the relationship between social entrepreneurship intentions and entrepreneurial alertness. In the opinion of Urban (2020) entrepreneurial alertness and self-efficacy exhibited a positive mediating effect in their relationship, and there is a need for these factors to be treated more systematically to enhance overall self-efficacy development. In addition, Chen, Gully, and Eden (2018) stated that self-efficacy serves as a mediator between entrepreneurial alertness and entrepreneurial skill development. This study's finding strengthens the assertion that self-efficacy is significant in affecting skill development and per-

formance. Also, Luthans, Youssef, and Avolio (2018) explain that high levels of self-efficacy can help to improve entrepreneurial skills, which is in support of this study's findings on the positive association between self-efficacy and entrepreneurship skill development.

This finding strengthens the self-efficacy theory of Bandura, which emphasises that it is an intrinsic motivation process that can be influenced by individual personality and environmental factors that affect students' learning outcomes (Schunk & DiBenedetto, 2021). This study strengthens the tenants of entrepreneurship alertness by Kirzner, who states that entrepreneurship alertness is a potential discovery without search chances that have been overlooked (McCaffrey, 2014). Self-efficacy drives entrepreneurs to uncover previously unforeseen opportunities. Entrepreneurship alertness has been argued to encompass the ability of entrepreneurs to discover opportunities with a schema that is enriched with value-creation, strongly linked to internal and external stimuli, and deliberately primed to be active with slight stimuli (Valliere, 2013). Therefore, self-efficacy is a significant moderator in the relationship between entrepreneurship alertness and entrepreneurship skill development.

The findings of this study have educational implications for senior secondary school administrators and teachers. Educational administrators at senior secondary schools should ensure that entrepreneurship instructional contents are implemented in the classroom to enrich and activate students' entrepreneurial alertness. Proving instruction geared towards enhancing students' self-efficacy is fundamental to promoting entrepreneurial alertness and skill development among senior secondary school students. We recommend that secondary school teachers who implement entrepreneurship content use instructional approaches that stimulate students' self-efficacy since they moderate the relationship between their entrepreneurship alertness and entrepreneurship skill development.

This study is significant since it establishes the mediating effects of self-efficacy on the relationship between entrepreneurial alertness and skill development among secondary school students. The findings of this study contributed significantly to the Sustainable Development Goals (SDGs) (Work for Progress, SDGs 1, 5, 8, 9, 16, and 17) aimed at promoting entrepreneurship for job creation. This study utilised path analysis to simplify the unidirectional relationships between entrepreneurial alertness and skill development among secondary school students. However, despite this study's strengths, it has inherent limitations. First, due to the large number of participants, the study employed a quantitative approach using a questionnaire, thereby ignoring the lived experiences of the participants. Second, empirical evidence guides path diagram directions; hence, any change in the direction could generate a different result. This study was conducted on the population of SSS II, hence, generalization of the findings should be done with care. In light of the limitations of this study, we recommend that future researchers consider using the mixed method to extract both qualitative and quantitative evidence. In addition, we recommend that teachers emphasize entrepreneurial instructional contents that stimulate students' self-efficacy, which is essential for inculcating entrepreneurial alertness and skill development.

CONCLUSION

This study concludes that students' self-efficacy significantly impacts their acquisition of entrepreneur education. This study has proven that self-efficacy positively moderated the relationship between entrepreneurial alertness and skill development. Therefore, self-efficacy is crucial for effective entrepreneurial learning among secondary school students. This indicates that educational programs and policies promoting students' self-efficacy contribute both directly and indirectly to their development of entrepreneurship skills. Con-

sequently, the government's formulation and promotion of educational initiatives aimed at fostering entrepreneurial awareness and self-efficacy serve as effective mechanisms for developing entrepreneurship skills among students. This study has established that self-efficacy is a major determinant of students' acquisition of entrepreneurial skills and engagement in small and medium-scale enterprises. Educational curriculum implementers must design entrepreneurship content that stimulates self-efficacy to enhance students' skill development. Furthermore, educators and policy-makers are challenged to create targeted programs and initiatives that cultivate these attributes among senior secondary school students, effectively preparing them for future entrepreneurial endeavours. Further studies should use a mixed-method research design to explore both qualitative and quantitative evidence that contributes to entrepreneurship skill development. Further studies should explore other variables that can significantly affect students' entrepreneurial development such as gender and location.

Acknowledgement

We are grateful to the school administrators of the sampled school for granting access for this research to be conducted with their students as participants.

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