# Entrepreneurship education and financial performance of graduate-owned SMEs in Tanzania

***Ivonne C. Ndibalema[1*], Elia John[1], and Ombeni W. Msuya[2]***

[1]Department of Business Administration and Management, The University of Dodoma, Dodoma, Tanzania
[2]Department of Educational Foundation and Continuing Education, The University of Dodoma, Dodoma, Tanzania
[*]**Correspondence:** yveendibalema3@gmail.com

**Abstract**

*Small and medium-sized enterprises (SMEs) rely on innovation and technology driven by entrepreneurship. Being entrepreneurial enables SME owners to transform business ideas into innovative and profitable goods or services and be flexible in response to business environmental changes. Although entrepreneurship education programs at universities are intended to develop the entrepreneurial competences necessary for successful graduate entrepreneurs, many graduate-owned SMEs are failing, resulting in high exit rates. This study assesses the contribution of university entrepreneurship education programs in producing successful entrepreneurs through the performance of graduate-owned SMEs. A cross-sectional survey design was utilized to collect data from 228 graduate entrepreneurs in Tanzania using online structured questionnaires. Partial least squares structural equation modelling was employed to clarify the causal-effect relationships among the constructs of the study. Findings reveal that, all components of entrepreneurship education, that is, entrepreneurship content, entrepreneurship pedagogy and entrepreneurship development support positively and significantly influence financial performance of graduate-owned SMEs. Based on the results, it is suggested that universities should prioritize comprehensive entrepreneurship curricula that include theory, practical applications, and real-world experiences. Additionally, fostering an entrepreneurial ecosystem with support, mentorship, and networking opportunities is crucial for empowering aspiring entrepreneurs, a critical aspect for economic advancement.*

**Received**
*23 May 2024*
**Received in revised form**
*15 October 2024*
**Accepted**
*18 October 2024*

**Keywords:**
*Entrepreneurship*
*Entrepreneurship education*
*Financial performance*
*Graduates*
*SMEs*
*Tanzania*

## 1. Introduction

Growing a country's economy and gaining a competitive advantage in the face of global competition is a goal that can be achieved through entrepreneurship. Entrepreneurship is recognized for its contribution to the generation of wealth, job creation and technological advancement especially to developing countries (Mahmood et al., 2021). Moreover, entrepreneurship drives the development of small and medium-sized enterprises (SMEs) as it encompasses the essence of innovation, risk-taking, and resourcefulness (Hapsari et al., 2024; Rassool et al., 2023). This motivates individuals to recognize and transform innovative and profitable business ideas into tangible products and services (Okumu & Buyinza, 2020). Hence, add worth to the market by establishing novel enterprises, often start at a small scale which later grow into a large enterprise (John, 2016). This underscores the significant role of entrepreneurship in the journey of SMEs` success as it fosters innovation and the ability to adapt to market changes (Heenkenda et al., 2022).

The success or failure of SMEs can be explained by different theoretical perspectives of entrepreneurship including the economic, psychological and managerial perspectives (Adebusuyi et al., 2022; Gumel & Bin Bardai, 2023; Jamil, 2023; Munawaroh et al., 2023). While psychological and sociological perspectives explain an entrepreneur's success aspirations such as inborn personality traits and the entrepreneur's social background and interactions (Karim, 2013; Mukherjee, 2016), they remain relatively underexplored (Arivazhagan et al., 2020; Cantú et al., 2021; Clement, 2023). However, the changes in the business environment causes inborn personality traits to become insufficient for entrepreneurial success as entrepreneurs must navigate technological, political, legal, economic, and socio-cultural shifts (Caliendo et al., 2016; Frank et al., 2007; Kerr et al., 2018). Therefore, regardless of innate traits, SME owners require entrepreneurship competences and adaptability to business environmental changes developed through social interaction in order to run a successful enterprise (Huda & Munandar, 2018; Purwana & Widyastuti, 2017; Walter & Block, 2016; Zarnadze et al., 2022).

Entrepreneurship competences can be developed through formal entrepreneurship education (EE) which is preferred over informal education due to its structured and specialized nature (Kyari, 2020). This formal education, associated with increasing entrepreneurship competencies, aligns with human capital theory, assuming that participation in formal education is relative to investment in human capital which results in the acquisition of competencies that contribute to productivity (Becker, 1964). Universities are considered as the appropriate level of education to develop entrepreneurial competences as they offer comprehensive programs designed to impart both curricular and extracurricular based learning (Fayolle & Gailly, 2008; Kyari, 2020; Purwana & Widyastuti, 2017).

 https://doi.org/10.58548/2024abmj22.2842

Curricular-based learning comprises formal courses and degree programs offered by universities (Mahmood et al., 2021). Within these programs, structured and specialized content is delivered through various pedagogical methods. The content typically encompasses theoretical knowledge such as business planning, marketing, finance, innovation, and enterprise establishment (Lekoko et al., 2012; Niyonkuru, 2005). The pedagogical practices not only include teaching and learning methods but also assessment techniques to evaluate the competences developed (Fulgence, 2015).

In addition to that, universities offer extracurricular activities, including workshops and networking events which enhance academic learning and help in entrepreneurship development. Extracurricular activities provide students with opportunities to interact with successful entrepreneurs, mentors, investors, and industry professionals (Isac et al., 2023). Participation in extracurricular programs enables university students to practice team work and leadership skills, critical thinking and problem-solving in a real world environment (Ribeiro et al., 2024) which are crucial for developing graduates who will be successful entrepreneurs.

However, despite the expectation that graduate-owned SMEs would operate successfully, due to the entrepreneurial competences possessed by the owners, their performance frequently falls short of expectations, revealing obstacles that limit their potential (Mwasalwiba et al., 2012; Pittaway & Cope, 2007; Rosa, 2003). In Tanzania, graduate-owned SMEs face the following obstacles that lead to their close down: lack of perseverance and risk-taking ability; a lack of entrepreneurship skills; bureaucracy in business registration and licensing; lack of knowledge about complying with legal requirements for operating a business; lack of finance to grow their enterprises; and lack of markets for their new products. Generally, graduate entrepreneurs' obstacles are related to insufficient preparation during university schooling for the complexities of entrepreneurial ventures (Kalimasi, 2018; Mangasini, 2015). Universities often focus on theoretical concepts rather than equipping students with the practical skills needed to confront real-world business challenges. For instance, perseverance and risk-taking are essential entrepreneurial traits that require practical exposure to uncertainty and failure, which may not be adequately simulated in academic settings. Similarly, the absence of hands-on training in essential entrepreneurship skills, including business management and decision-making under pressure, leaves graduates ill-prepared to tackle the realities of business ownership. Bureaucratic hurdles and legal compliance issues are further complicated by a lack of education on navigating local regulatory environments, while the challenges of securing finance and identifying viable markets are often not fully addressed in entrepreneurship curricula, leaving graduates unprepared to source capital or effectively market their products. Thus, the disconnect between academic preparation and the practical demands of running a business contribute to the struggles faced by graduate entrepreneurs.

The present study identifies a critical knowledge gap in understanding the performance of graduate-owned SMEs in Tanzania as influenced by university-based EE. Specifically, there is limited empirical research on how EE impacts the actual performance of graduate entrepreneurs' firms, rather than just focusing on individual-level outcomes like entrepreneurial intentions (Mahmood et al., 2021; Ndibalema et al., 2024). Addressing this gap, the study makes significant contributions by advocating for a theoretical shift from individual outcomes to firm-level outcomes, such as the performance of graduate-owned SMEs. It also underscores the importance of assessing EE in less developed countries like Tanzania, where entrepreneurship is often a preferred job alternative due to scarce employment opportunities. This offers valuable insights into the role of EE in challenging economic environments. Additionally, the research highlights the need for further investigation to inform policymakers, universities, and entrepreneurs on how to enhance EE programs to stimulate economic growth in Tanzania and similar contexts.

Thus, the purpose of this research study is to assess the influence of university EE programs on the performance of graduate-owned SMEs in Tanzania. The study aims to address the disconnection between the expected success of these SMEs, given the entrepreneurial competencies of their owners, and the reality of their underperformance. Further, the study seeks to contribute to a deeper understanding of how university EE influences not just individual outcomes like entrepreneurial intentions, but also firm-level outcomes such as the actual performance of graduate-owned businesses. The research is particularly focused on the context of Tanzania, a less developed country where entrepreneurship is often viewed as a viable career alternative due to limited employment opportunities. By identifying the challenges faced by graduate entrepreneurs in Tanzania, such as lack of skills, bureaucracy, and financial constraints, the study highlights the need for better university preparation for entrepreneurial endeavours. It also seeks to fill a knowledge gap regarding how university EE affects the performance of graduate-owned SMEs in Tanzania. Ultimately, the research aims to provide valuable insights to policymakers, universities, and entrepreneurs to improve university EE programs, thereby enhancing the economic growth of Tanzania and similar environments.

This study is structured as follows: the first part introduces the problem, objectives, contribution, purpose, and structure. The second part reviews the literature and develops hypotheses, explaining the guiding theory, identifying gaps, and forming hypotheses. The third part details the methodology, including the study area, sampling processes, methodologies, measurement of variables, and data analysis techniques. The fourth part presents and interprets the

 https://doi.org/10.58548/2024abmj22.2842

findings, enriched by discussions and citations from previous studies. The fifth part provides conclusions and implications, while the sixth part acknowledges limitations and suggests areas for future research.

## 2. Literature review and hypotheses

### 2.1 Human capital theory

Gary Becker introduced this theory in 1962. The theory posits that education has a critical function in human capital, serving not only as a source of knowledge but also as a means to acquire skills that enhance workers' productivity (Becker, 1993). As highlighted by Becker (1993), investments in education are considered investments in human capital due to the enhancement of individuals' competencies. Human capital, a concept utilized across various production sectors, has particularly been associated with entrepreneurship (Elert et al., 2015; Teixeira, 2014). Entrepreneurship, characterized by opportunity identification, risk-taking, and venture establishment processes, places significant emphasis on competencies such as knowledge, skills, and attitude (Gunartin et al., 2023). Obtaining a university degree is commonly recognized as a key indicator of human capital investment (Marvel et al., 2016). EE at the university level is widely acknowledged as a catalyst for developing entrepreneurship competencies in graduates (Newman et al., 2019; Walter & Block, 2016; Zhao et al., 2005). Therefore, the effective implementation of entrepreneurship content, pedagogy, and support at universities can lead to the production of competent graduates who are likely to succeed in entrepreneurship ventures (Martin et al., 2013). Thus, the theory was considered appropriate in assessing the relationship between EE and the performance of graduate-owned SMEs

### 2.2 Performance of SMEs

Performance is considered as the main approach of evaluating or measuring the success of the business (Cho & Lee, 2018; Mahmood et al., 2021). It involves the overall measure of an enterprise's capacity to fulfil the needs of its stakeholders and operate efficiently. Performance of an enterprise can be expressed as financial performance, measured in monetary terms using financial indicators such as profit, sales, cash flow and return on investment (Rashid et al., 2018). Also, performance of a firm can be expressed as non-financial performance, measured in operational terms using non-financial indicators such as employee turnover, customer satisfaction and new product development (Waziri & Nnko, 2023). Generally, financial performance expressed in monetary terms come as a result of non-financial performance which stands for firm's operations. Consequently, financial performance is the most frequently used measure of evaluating the firm's efficiency and sustainability.

Additionally, performance of an enterprise can be measured subjectively using primary data or objectively using secondary data or both (Din & Abbas, 2021). Subjective measurement uses primary data or self-reported data, it involves indicators such as sales growth, market share growth, profit goals achievement and increase in asset investment (Schettler, 2023). Objective measures use business recorded data such as business ledger books or financial statements, it involves indicators such as return on assets, return on sales, return on investment and return on net worth (Vij & Bedi, 2016).

Currently, literature has put much emphasize on subjective business performance measures especially when measuring performance of small and medium sized businesses (Makhija & Goel, 2019). This is due to the fact that, in most of the developing countries, SMEs do not have a tendency of keeping business records properly (Isaga et al., 2015). Also, even when the records are kept diligently, there is a tendency among business owners to withhold objective data and statistics from outsiders, preferring to offer a subjective assessment of their enterprise performance (John, 2016). Consequently, the utilization of subjective measures gathered from primary sources continues to be the predominant method for assessing business performance. (Alasadi & Abdelrahim, 2007; Wall et al., 2004). The current study will employ subjective financial performance measures in assessing the performance of graduate-owned SMEs, given the limited availability of published data and the reluctance of business owners to disclose objective figures. Moreover, subjective measures have the ability to overcome the limitations of objective measures, such as enabling multi-industry comparisons (Rashid et al., 2018; Zulkiffli, 2014).

### 2.3 Graduate-owned SMEs

SMEs have been defined using different criteria, and different countries have adopted slightly different definitions according to the local context. In Tanzania, SMEs are defined according to sector, employment size, and capital investment in machinery, and they are categorized in terms of micro, small, and medium-sized enterprises in non-farm activities, including manufacturing, mining, commerce and services (see Table 1) (URT, 2003).

In this study, SMEs will be categorized according to the number of employees and capital invested, where by an enterprise with less than fifty employees and capital investment of up to two hundred million Tanzanian shillings will be categorized as a small enterprise and an enterprise with fifty to ninety-nine employees and capital investment from Tanzanian shillings two hundred million up to eight hundred million will be categorized as a medium enterprise.

 https://doi.org/10.58548/2024abmj22.2842

**Table 1.** Classification of enterprises in Tanzania

| Category | Number of employees | Capital invested in machinery |
|---|---|---|
| Micro enterprises | 1-4 | Up to 5 million |
| Small enterprises | 5-49 | Above 5 million to 200 million |
| Medium enterprises | 50-99 | Above 200 million to 800 million |
| Large enterprises | 100 and above | Above 800 million |

**Source:** Table by the authors

Graduate-owned SMEs refers to businesses or enterprises that are owned and operated by individuals who have completed their higher education, typically holding a degree from a university or college (Taneja, 2022). These ventures are established and managed by graduates who have acquired specialized knowledge, skills, and expertise through their educational experiences (Kyari, 2020; Newman et al., 2019; Walter & Block, 2016; Zhao et al., 2005). According to Rosa (2003), most of the graduate-owned SMEs operate micro to medium enterprises.

Graduate entrepreneurs leverage their educational backgrounds to drive innovation, creativity, and strategic decision-making within their businesses, contributing to economic growth and development (Ncanywa & Dyantyi, 2022). This is supported by human capital theory that a university degree is often perceived as a crucial investment in human capital due to the competencies possessed by graduates (Marvel et al., 2016). Consequently, the development of competencies in entrepreneurship can lead to an increased likelihood of success in entrepreneurial pursuits for graduates (Khan et al., 2019). However, it is important to assess the performance of graduate-owned SMEs despite the educational background and the competences possessed by their owners (Mahmood et al., 2021). Measuring the performance of graduate-owned SMEs unveil the success of these ventures in terms of survival and growth (Kyari, 2020). Also, the performance provides feedback to the universities on the real benefits of the EE programs they offer, the curriculum reviewers and the government in general on the contribution of the university EE programs in the real practice of entrepreneurship (Mahmood et al., 2021).

## *2.4 University entrepreneurship education*

The integration of EE into university curricular supports the ongoing industrial revolution and promote the realization of sustainable social and economic development (Nabi et al., 2017). The EE programs delivered through both curriculum and extra curriculum-based learning (Fayolle et al., 2006; Purwana & Widyastuti, 2017), encompass essential EE components such as entrepreneurship content, entrepreneurship pedagogy and entrepreneurship development support (Alberti et al., 2004; Amofah & Saladrigues, 2022; Lekoko et al., 2012; Niyonkuru, 2005; Sirelkhatim & Gangi, 2015). Thus, EE equips prospective entrepreneurs with entrepreneurial competences and adaptability to changing business environments, aiming to facilitate graduates' success in entrepreneurship (Mahmood et al., 2021). Literature acknowledges the significance of university EE but most of the existing studies that evaluated the contribution of university EE focused on graduates` entrepreneurial intention, a component that has been criticized for being prone to self-selection bias (Elert et al., 2015; Martin et al., 2013). As a more reliable measure, some scholars advise evaluating firm-level results instead (Bae et al., 2014; Dou et al., 2019), such as the performance of graduate-owned business ventures (Cho & Lee, 2018; Mahmood et al., 2021).

Further, few studies have examined the performance of graduate-owned businesses such as the studies of Cho and Lee (2018), Kyari (2020), Mahmood et al. (2021), and Zhao et al. (2022). Studies by Kyari, (2020) and Mahmood et al. (2021) have noted a positive and significant relationship between EE and performance of graduate-owned enterprises in Nigeria and Malaysia respectively. On the other hand, Zhao et al. (2022) and Cho and Lee (2018) have reported insignificant relationship between EE and performance of graduate-owned SMEs. However, the studies vary in the composition of EE. For instance, Cho and Lee (2018) defined EE as an academic qualification rather than a course or programme. In the studies of Mahmood et al. (2021) and Zhao et al. (2022), EE composed of only entrepreneurship content of a single EE course taken by a university student, the pedagogical practices and development support were excluded. According to Yeh et al. (2021), the components which define EE affects the results in the relationship between EE and other variables. Therefore, to avoid the variations, the study at hand will accommodate both, curriculum-based learning and non-curriculum-based learning. The curriculum-based learning will focus on the entrepreneurship content and entrepreneurship pedagogy while non-curriculum-based learning will focus on the entrepreneurship development support.

Furthermore, the earlier research on the influence of EE on performance of graduate-owned SMEs focused on graduates who have taken a single EE course rather than those who have pursued EE degree program as their specialization such as the studies of Mahmood et al. (2021) and Zhao et al. (2022). Selecting graduates majored in EE degree program makes sense for examining the relationship between EE and firm performance, as entrepreneurship degree programs are meant to nurture entrepreneurs (Kyari, 2020) while a single course is meant to just create awareness about entrepreneurship (Niyonkuru, 2005). Additionally, in Tanzania, there is a knowledge gap regarding the performance of graduates who have dared to start and grow their own business ventures as a

 https://doi.org/10.58548/2024abmj22.2842

result of university EE programs. The current study aims at filling this knowledge gap by assessing the contribution of university EE on performance of graduate-owned SMEs in Tanzania.

### 2.5 Hypothesis development

Grounded on the reviewed literature examined and the human capital theory, it can be hypothesized that EE significantly influences the financial performance of graduate-owned SMEs in Tanzania. Previous research indicates that EE components such as entrepreneurship content, entrepreneurship pedagogy and entrepreneurship development support play a crucial role in influencing the financial performance of graduate-owned SMEs indicated by sales profit, and assets growth (Cho & Lee, 2018; Kyari, 2020; Mahmood et al., 2021; Zhao et al., 2022). Accordingly, these components of EE are expected to influence the performance of graduate-owned SMEs in Tanzania, as hypothesized below:

#### 2.5.1 Entrepreneurship content and performance of graduate-owned SMEs

The success of university EE program is measured by producing graduates with entrepreneurial competencies, that is entrepreneurship knowledge, skills and attitude (Djubaedi et al., 2023). Developing these competencies depends on the suitability of the course content offered (Sirelkhatim & Gangi, 2015). Effective entrepreneurship content includes learning about entrepreneurship which creates awareness; learning for entrepreneurship which develops entrepreneurial attitude and learning through entrepreneurship which builds practical skills for prospective entrepreneurs (Lekoko et al., 2012; Morris, 2022; Shambare, 2013; Sirelkhatim & Gangi, 2015). Learning through entrepreneurship is the most essential as it immerses students in real-world entrepreneurial activities, promotes critical thinking, problem solving abilities and hands-on activities (Lekoko et al., 2012; Niyonkuru, 2005). According to human capital theory, knowledge, skills, and competencies that individuals acquire through education and training can enhance their productivity and performance (Ramadani et al., 2022). Thus, entrepreneurship content delivered in university EE programs equips students with essential knowledge and skills related to starting and managing a business. The acquisition of this specialized knowledge enhances the human capital of graduates, making them better equipped to navigate the complexities of entrepreneurship. As a result, the performance of graduate-owned SMEs is expected to improve, as the entrepreneurs are better prepared to address business challenges and capitalize on opportunities. Further, research studies indicate that the content of EE programs influences the performance of businesses owned by graduates, demonstrating positive outcomes in specific scenarios like non-business management graduates in China (Zhao et al., 2022) and university alumni in Malaysia (Mahmood et al., 2021). With limited empirical data on the effects of EE content on graduate-owned SMEs, this study assessed how entrepreneurship content influences the financial performance of graduate-owned SMEs specifically in Tanzania. Therefore, it can be hypothesized that:

> H1: Entrepreneurship content positively and significantly influences the financial performance of graduate-owned SMEs in Tanzania.

#### 2.5.2 Entrepreneurship pedagogy and performance of graduate-owned SMEs

Entrepreneurship pedagogy plays a crucial role in the development of entrepreneurial competencies as it encompasses all activities in the teaching and learning process guided by entrepreneurship content (Capocci, 2022; Lyu et al., 2024; Verduijn & Berglund, 2020; Fayolle & Gailly, 2015; Nabi et al., 2017). Participatory teaching methods such as project-based activities, internships, inviting entrepreneurs as guest speakers, student mini business start-ups, business simulations, business plan competitions and case studies of successful entrepreneurs are considered most suitable for developing entrepreneurship competences than non-participatory methods (Fayomi et al., 2019; Fulgence, 2015; Hegarty & Jones, 2008; Kalimasi, 2018; Katundu & Gabagambi, 2016; Rodrigues, 2023; Silberman et al., 2023). These methods allow learners to connect theory with practice as they involve learning by doing and interaction in the real environment ensuring mastery of the required competencies (Fulgence, 2015; Kalimasi, 2018; Katundu & Gabagambi, 2016). Human capital theory suggests that the effectiveness of how knowledge is imparted can significantly influence the quality of human capital. When pedagogical methods are hands-on and closely mirror real-world business scenarios, students are more likely to internalize and apply what they have learned. This practical and applied knowledge can directly translate into improved decision-making, problem-solving, and innovation in their SMEs, thereby enhancing business performance. Existing literature exhibits a scarcity of empirical data concerning the impact of EE on performance of graduate-owned SMEs, with predominant focus on the effectiveness of university pedagogical practices and its effect on entrepreneurial intentions (Ewijk, 2018; Olokundun et al., 2018). Kyari (2020) found a negative relationship between entrepreneurship pedagogy and the financial performance of graduate-owned SMEs, indicating a potential inadequacy in current pedagogical approaches to foster development of entrepreneurial competencies. However, Sirelkhatim and Gangi (2015)

 https://doi.org/10.58548/2024abmj22.2842

proposed that, it would be useful to assess the actual performance of graduate-owned businesses in relation to the teaching methods used for university EE programs. Acknowledging the significance of entrepreneurship pedagogy in the performance of graduate-owned SMEs and the scarcity of empirical support, the current study focuses on assessing the influence of entrepreneurship pedagogy on the financial performance of graduate-owned SMEs in Tanzania. Hence, it is hypothesized that:

H2: Entrepreneurship pedagogy positively and significantly influences financial performance of graduate-owned SMEs in Tanzania.

### *2.5.3 Entrepreneurship development support and performance of graduate-owned SMEs*

Recent academic literature has theorized the growing importance of training, coaching and mentoring programs at the universities for aspiring prospective entrepreneurs (Potocan et al., 2021). Entrepreneurship development support involves extra-curricular learning activities which connect classroom learning with the real entrepreneurial environment such as student club, business incubators, entrepreneurship seminars, trainings and workshops (Katundu & Gabagambi, 2016; Kyari, 2020; Mahmood et al., 2021; Matotola, 2016; Purwana & Widyastuti, 2017). Also, entrepreneurship development support enables students who are interested to become entrepreneurs and nascent graduate entrepreneurs who are faced with a number of problems during the early stage of their business development to access the necessary support required for business success (Mahmood et al., 2021; Matotola, 2016). From a human capital theory standpoint, entrepreneurship development support further augments the human capital of graduates by providing them with not just knowledge, but also critical experience, guidance, and resources needed to succeed (Khalil, 2023; Pius et al., 2023). Considering the significance of entrepreneurship development support by universities in nurturing entrepreneurs, along with the scarce empirical support regarding its impact on the performance of graduate-owned SMEs, this study will assess the influence of entrepreneurship development support on the performance of graduate-owned SMEs in Tanzania. Thus, it is hypothesized that:

H3: Entrepreneurship development support positively and significantly influences financial performance of graduate-owned SMEs in Tanzania.

## 3. Research methodology

### *3.1 The study area and population*

The present study was carried out in Tanzania, focusing on graduate-owned SMEs. The targeted population under the study comprised of SMEs owned by graduates with a bachelor degree in entrepreneurship, located in Tanzania.

### *3.2 Research design, sample size and data collection*

This particular study focused on graduate-owned SMEs located in Tanzania. In particular, the sampling frame involved SMEs owned by graduate entrepreneurs majored in entrepreneurship. These graduates were targeted since they are considered to possess a better chance of succeeding in business owing to the entrepreneurial competences developed during their university education (Kyari, 2020; Mwasalwiba et al., 2012). Being the owners of the businesses in question, they were considered as the right people to provide information on how EE affects the financial performance of their businesses. However, the sampling frame for this study was not available due to inadequate preservation of data bases for SMEs, in particular, the absence of owners' personal information (Ismail, 2022), and also because of the prevalent unregistered SMEs in developing countries such as Tanzania (Isaga, 2018; Tundui, 2012). To this effect, a multi-stage sampling technique was utilized. Contact address of the potential graduate entrepreneurs was sourced from their universities and additional eligible respondents were identified through snowball sampling.

Due to the unknown population size, sample size determination was done using infinite population formula ($n = z^2pq/d^2$) which is based on principles from probability theory and statistics (Garren & Cleathero, 2024). In this case, "n" means the sample impact, "z" indicates the standard deviation fixed at a value of 1.96 which describe a 95% confidence interval, "p" is the largest population percentage at 50% while "q" is 1-p, and "d" is the precision level of 0.05. According to this calculation, the recommended sample size was found to be 384. In an effort to examine how EE influences the financial performance of graduate owned SMEs, online survey method with structured questionnaires was implemented. This approach was preferred due to its cost and time effectiveness over physical face to face interviews (Singh & Sagar, 2021). Prior to its official distribution, the online questionnaire tested and refined with the feedback provided and finally sent to respondents via a google form link. In order to ensure clarity, the questionnaires included initial instructions as well as concise instructions in every section prior to commencement of that section. The form had the same rating scale throughout the sections, prepared in simple English to reduce misunderstanding. With respect to privacy, no personal identifiers like names, or email addresses were required, and the privacy policy made it clear that participation was entirely voluntary.

 https://doi.org/10.58548/2024abmj22.2842

Recognizing some of the shortfalls inherent in conducting online surveys, for instance, self-selection of participants (Andrade, 2020), the researcher contacted each participant personally and provided them with the survey link with clear instructions not to share the link to anyone else. Out of the 384 questionnaires given out, 260 were filled and returned; however, 32 of them were incomplete and therefore not useful to the study, resulting into 228 duly filled and complete questionnaires which translated to a response rate of 59.4% that was considered fair as it was higher than the 44% target (Wu et al., 2022). Among the completed questionnaires, 71.1% (162) of them were completed by male graduate entrepreneurs, whereas the female graduate entrepreneurs constituted 28.9% (66) of the respondents.

### *3.3 Measurement of study variables*

Measurement instruments that were validated in earlier studies were modified for use in this study. Every item was evaluated using a 5-point Likert scale, where 1 represents strongly disagree and 5 represents strongly agree. In particular, a scale created by Fulgence (2015) was modified to measure EE content; a scale by Rengiah (2013) was modified to measure EE pedagogy; and a scale by Saeed et al. (2014) was modified to measure EE development support. However, the scales by Madawala et al. (2023) and Ndiaye et al. (2018) were modified to measure the financial performance of graduate-owned SMEs. These modifications were important to make sure the scales were relevant to the study without distorting the constructs that were provided but reflect the unique characteristics of university entrepreneurship courses and graduate-owned SMEs. Before data collection, the validity and reliability of the modified scales were ensured through pilot testing and expert reviews, thus, upholding the integrity of the instruments in regard to measurement of the constructs of interest.

### *3.4 Data analysis*

Partial least squares structural equation modelling (PLS-SEM) was employed to clarify the causal-effect relationships among the constructs of the current study (Ringle et al., 2023). The selection of PLS-SEM was deemed most suitable for the study's analysis owing to its theoretical underpinnings and modelling capabilities as indicated by previous scholars (Hair et al., 2019; Henseler et al., 2018; Khan et al., 2019). PLS-SEM provides advanced statistical functionalities, facilitating a more effective test of theoretical models (Hair et al., 2019). This method emphasizes predictive relationships and is particularly well-suited for exploring the contribution of EE on the performance of graduate-owned SMEs majored in entrepreneurship programs. PLS-SEM proficiently manages models comprising numerous constructs and indicators and hence it has emerged as the appropriate analytical choice. The analytical process entails two key stages: initially evaluating the measurement model for validity and reliability, followed by scrutinizing the structural model's relationships.

## 4. Results and discussion

### *4.1 Common method variance*

The study utilized self-administered online questionnaires for data collection from graduate respondents. This methodology might have introduced certain biases into the results. In order to mitigate potential bias, data was anonymized to protect individual identities (Rodríguez-Ardura & Meseguer-Artola, 2020). Additionally, the primary objective of the study was clearly stated in the questionnaire to enhance transparency and reduce potential biases (Kock et al., 2021). Moreover, the research employed Harman's single-factor analysis to assess the presence of any significant common method bias (Aguirre-Urreta & Hu, 2019). The outcomes of the Harman single-factor analysis indicated that one factor within the model could explain approximately 35.66% of the total variance; nevertheless, as this percentage is below 50%, there is no significant concern regarding bias (Podsakoff et al., 2003). Furthermore, collinearity examination through the Variance Inflation Factor (VIF) revealed values ranging from 1.091 to 1.452, indicating a low level of interrelation among variables as the values were below 3.3 (Kock, 2015). Therefore, it was determined that the data in the study were not significantly influenced by common method bias.

### *4.2 Measurement model results*

The internal consistency reliability and composite reliability of the study were evaluated using Cronbach's alpha coefficients (Ab Hamid et al., 2017). As shown in Table 2, all main study's constructs had values above 0.7, indicating acceptable level of reliability. However, loading values above 0.708 are necessary to achieve indication reliability (Ringle et al., 2023). The square root of Average Variance Extracted (AVE) value was higher than 0.5, hence, convergent validity was also achieved (Hair et al., 2019; Ringle et al., 2023). Three criteria, shown in Table 3, were used to assess discriminant validity. According to the results, discriminant validity was met for all criteria: the HTMT matrix values are less than 0.85, the AVE square root is larger than the values in the intercorrelations between the constructs, and, finally, the bolded cross loading values in Table 3 indicate that the loadings are higher in the corresponding constructs than in any other construct (Hair et al., 2019; Ringle et al., 2023). Further, the p-values of the outer loadings for each item in Figure 1 have coefficients of 0.000, which suggests that there is a strong correlation between the latent constructs and the observed indicators. Generally, the results shown in Tables 2 and

 https://doi.org/10.58548/2024abmj22.2842

3 provide evidence for the measurement model that supports the validity and reliability of the measures, and as a result, the study assessed the structural model to test the study`s hypotheses.

**Table 2.** Measurements, reliability and convergent validity

| Constructs/Items | Loadings | Cronbach's alpha | Composite reliability | AVE |
|---|---|---|---|---|
| **Entrepreneurship education (EE)** | | | | |
| *Entrepreneurship Content (CON)* | | *0.800* | *0.869* | *0.624* |
| CON1 | 0.744 | | | |
| CON2 | 0.826 | | | |
| CON3 | 0.767 | | | |
| CON4 | 0.820 | | | |
| *Entrepreneurship pedagogy (PED)* | | *0.825* | *0.893* | *0.737* |
| PED1 | 0.795 | | | |
| PED2 | 0.864 | | | |
| PED3 | 0.912 | | | |
| *Entrepreneurship development support (SUP)* | | *0.771* | *0.852* | *0.591* |
| SUP1 | 0.776 | | | |
| SUP2 | 0.737 | | | |
| SUP3 | 0.772 | | | |
| SUP4 | 0.789 | | | |
| *Financial performance* | | *0.725* | *0.844* | *0.644* |
| FP1 | 0.788 | | | |
| FP2 | 0.783 | | | |
| FP3 | 0.836 | | | |

**Source:** Table by the authors

**Table 3.** Discriminant validity

| **HTMT matrix** | | | | |
|---|---|---|---|---|
| | CON | FP | PED | SUP |
| CON | | | | |
| FP | 0.625 | | | |
| PED | 0.272 | 0.421 | | |
| SUP | 0.677 | 0.684 | 0.337 | |
| **Fornell-Larcker criterion** | | | | |
| | CON | FP | PED | SUP |
| CON | 0.790 | | | |
| FP | 0.487 | 0.803 | | |
| PED | 0.213 | 0.340 | 0.858 | |
| SUP | 0.532 | 0.522 | 0.279 | 0.769 |
| **Cross loadings** | | | | |
| | CON | FP | PED | SUP |
| CON1 | **0.744** | 0.323 | 0.245 | 0.457 |
| CON2 | **0.826** | 0.458 | 0.118 | 0.414 |
| CON3 | **0.767** | 0.362 | 0.207 | 0.429 |
| CON4 | **0.820** | 0.378 | 0.131 | 0.393 |
| FP1 | 0.336 | **0.788** | 0.286 | 0.362 |
| FP2 | 0.436 | **0.783** | 0.308 | 0.442 |
| FP3 | 0.391 | **0.836** | 0.221 | 0.443 |
| PED1 | 0.178 | 0.208 | **0.795** | 0.160 |
| PED2 | 0.172 | 0.278 | **0.864** | 0.261 |
| PED3 | 0.200 | 0.358 | **0.912** | 0.275 |
| SUP1 | 0.441 | 0.394 | 0.202 | **0.776** |
| SUP2 | 0.336 | 0.321 | 0.207 | **0.737** |
| SUP3 | 0.472 | 0.431 | 0.200 | **0.772** |
| SUP4 | 0.374 | 0.440 | 0.247 | **0.789** |

**Source:** Table by the authors

## *4.3 Structural model and hypothesis testing*

To establish the statistical relationships among the study variables as presented in Figure 1, a structural model or path analysis was conducted. Initially, the study examined the collinearity tests in which values of VIF for the inner model were assessed. The study unveiled that the VIF values ranged between 1.091 to 1.452 which are less than 3 and hence signified that collinearity was not a major issue in the study (Hair et al., 2019). In order to assess the model predictive power, the values of R-square for the outcome variable in the model as presented in Figure 1 were assessed and R-square value of 0.367 was recorded, suggesting that entrepreneurship content, entrepreneurship pedagogy and entrepreneurship development support explain 36.7% of the variation in financial performance. The study analysed the Q-square value for financial performance of graduate owned SMEs, which

 https://doi.org/10.58548/2024abmj22.2842

resulted to 0.340. Since the values were greater than zero, they were found to have predictive relevance (Hair et al., 2019).

The study assessed the relationship between entrepreneurship content and financial performance, entrepreneurship pedagogy and financial performance and entrepreneurship development support and financial performance (see Figure 1). The results of these hypothesized relationships are presented in Table 4, basing on the values of path-coefficients and significance levels. All these relations were supported with non-zero values between bootstrap confidence intervals.

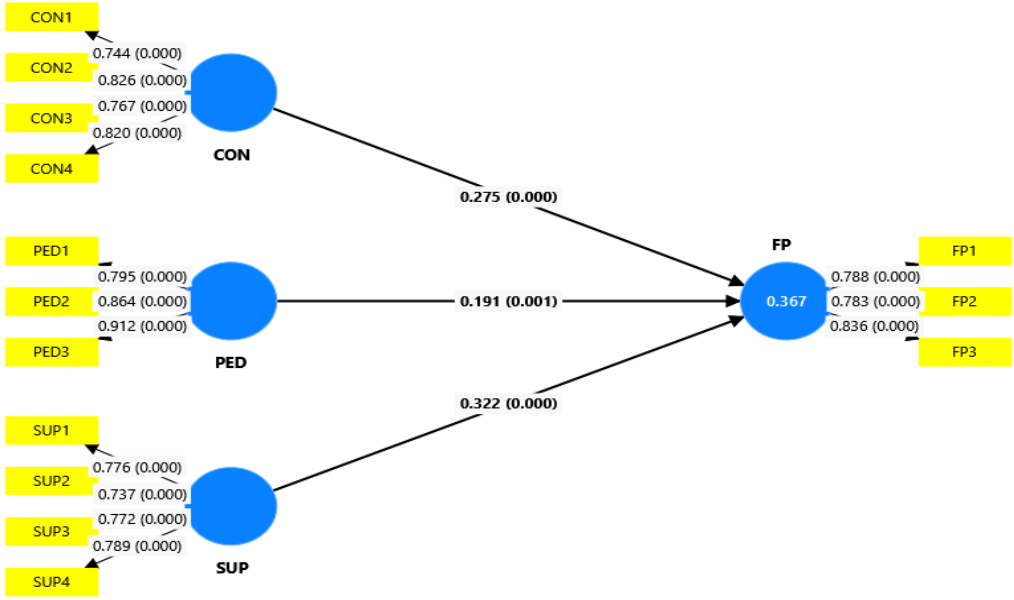


**Figure 1**. The structural model
**Source**: Figure by the authors

Specifically, the relationship between entrepreneurship content and financial performance is positive and highly significant (β = 0.275, p = 0.000, t = 4.195). Therefore, H1 is supported. The findings support the notion that entrepreneurship content significantly and positively influences financial performance. This implies that graduate entrepreneurs acquired the basic understanding of entrepreneurship theories, business plan development and opportunity recognition (Fulgence, 2015; Niyonkuru, 2005; Shambare, 2013). This helped graduate entrepreneurs to integrate entrepreneurship knowledge, skills and attitude to identify market gaps, articulate their ideas, innovate solutions, start and manage their business, capitalize on emerging trends, attract investment, and mitigate risks (Mustapha & Selvaraju, 2015). The results of this study validate the theoretical underpinnings of the human capital theory that, entrepreneurship content equips university graduates with entrepreneurial skills needed to successfully manage and grow their business ventures. Hence development of graduates' entrepreneurial capabilities and positively impacting financial performance resulting in increased sales growth and profitability and investment in assets. The results of this study concur with the results conducted by Mahmood et al.(2021) who also found a positive relationship between university curriculum content and performance of graduate-owned enterprises in Malaysia.

Also, the relationship between entrepreneurship pedagogy and financial performance is positive and statistically significant (β = 0.191, p = 0.001, t = 3.443), hence, H2 is supported. The results indicate a strong correlation between entrepreneurship pedagogy and the financial performance of graduate-owned ventures. This signifies that, various aspects of entrepreneurship pedagogy such as simulation of real-world scenarios equipped graduates with practical skills to handle business challenges. Also, the visits to established entrepreneurs offered first-hand insights into successful business operations, enabling graduates to implement best practices (Lyu et al., 2023). Moreover, inspirational stories of successful entrepreneurs motivated and empowered graduates to pursue ambitious goals (Rengiah, 2013). All these pedagogical practices played a vital role in shaping the graduates' competencies, potentially resulting in firms' annual sales growth, achieve expected annual profits through more efficient operations and investing in fixed assets as graduates expand their businesses. In that way, the current study's results confirmed the human capital theory, where increased effective human capital leads to better business effectiveness and ultimately good performance.

Further, the relationship between entrepreneurship development support and financial performance is positive and significant, hence H3 is supported (β = 0.322, p = 0.000, t = 5.435). These results highlight a significant and positive relationship between entrepreneurship development support provided by universities and the financial

 https://doi.org/10.58548/2024abmj22.2842

performance of graduate-owned SMEs. Entrepreneurship development support, including project work, conferences/workshops, motivation to start a new business, and connections with entrepreneurs, reveals their potential impact on financial performance (Chao, 2022; Hofer & Potter, 2010; Matotola, 2016). The support provided to students fosters problem-solving skills and innovation, provides mentorship and networking opportunities, opening doors for partnerships and investments in entrepreneurship practice (Mahmood et al., 2021). Human capital theory posits that such support systems boost the social capital of graduates as they provide networking with other players in the industry and prospective partners, thereby improving their ability to handle business obstacles and leverage various opportunities in the market. This, in turn, leads to improved financial performance that can be characterized by increased sales, growth in profitability, and acquisition of more assets.

**Table 4.** Structural model's results for testing relationships

| Relationships | Original sample (O) | Standard deviation (STDEV) | T statistics (\|O/STDEV\|) | Confidence intervals | | P values |
|---|---|---|---|---|---|---|
| CON -> FP | 0.275 | 0.066 | 4.195 | 0.143 | 0.401 | 0.000 |
| PED -> FP | 0.191 | 0.055 | 3.443 | 0.086 | 0.301 | 0.001 |
| SUP -> FP | 0.322 | 0.059 | 5.435 | 0.212 | 0.444 | 0.000 |

**Source:** Table by the authors

## 5. Conclusion and implications

The study assessed the relationship between EE and financial performance of graduate-owned SMEs in Tanzania. The results revealed that entrepreneurship content, entrepreneurship pedagogy, and entrepreneurship development support have a positive and significant relationship with financial performance of graduate-owned SMEs. EE through entrepreneurship content, pedagogy and development support significantly develop the necessary entrepreneurial competencies; knowledge, skills and attitude to university graduates. The entrepreneurial competencies enable graduates to establish and sustain successful enterprises through identification of profitable business opportunities, generation of innovative products and services, effective business management, and hence increase in sales, profit and investments. Moreover, the findings of the current study emphasize the importance of comprehensive EE programs and development support that prepare graduates for successful entrepreneurial initiatives.

The findings of this study pose important theoretical, empirical and practical implications in the area of entrepreneurship. These findings contribute to the theoretical understanding of how EE through the entrepreneurship content, entrepreneurship pedagogy and entrepreneurship development support positively and significantly contributes to the financial performance of graduate-owned SMEs. The results support human capital theory by demonstrating that educational investments in entrepreneurship significantly contribute to the development of graduates' knowledge, skills, and attitudes, which in turn lead to improved business performance.

Further, these findings also contribute to the existing literature on university EE by providing empirical evidence that university EE programs positively influence the financial performance of graduate-owned SMEs, particularly those who majored in entrepreneurship. This reinforces the critical role that university EE programs play in developing entrepreneurial competencies, which in turn foster the success of emerging entrepreneurs. Practically, universities should ensure that curriculum design and implementation encompass comprehensive content, effective pedagogy and substantial development support which focuses on practical applications and real-life experiences. Universities and educational institutions should prioritize the development of comprehensive entrepreneurship curricula that encompass theoretical concepts, practical applications, and real-world experiences. Moreover, fostering an entrepreneurial ecosystem that provides ample support, mentorship, and networking opportunities is crucial for empowering aspiring entrepreneurs to navigate the challenges of business ownership effectively.

From a policy standpoint, the study's results suggest that universities and educational policymakers should prioritize and invest in comprehensive EE programs as a strategic approach to fostering economic growth and business success among graduates. Policymakers should also encourage the integration of experiential learning opportunities, such as real-world simulations and mentorship, within university curricula, and provide continued support through development initiatives that link students with industry experts and successful entrepreneurs. This would not only enhance the entrepreneurial ecosystem within educational institutions but also contribute to the broader economic development by nurturing successful and innovative business ventures among graduates.

## 6. Limitations and directions for future studies

While this study provides valuable insights into the relationship between university EE and performance of graduate-owned SMEs, it has several limitations. First, the study's cross-sectional design makes it more difficult to determine if EE and financial performance of graduate-owned SME are causally related. Therefore, further studies may consider longitudinal or experimental designs to better understand the mechanisms through which university EE influences financial performance of graduate-owned SMEs. Second, the study is limited to SMEs owned by university graduates majored in entrepreneurship, which may limit the implications for other populations. Further, research can examine

 https://doi.org/10.58548/2024abmj22.2842

the influence of EE on performance of SMEs from specific industries, locations, and levels of education. Within this context, education levels refer to the formal educational qualifications that SME owners have received, as they may have an effect on how they apply the knowledge and skills developed from EE programs.

Also, the use of self-reported measures for performance indicators may introduce biases, such as common method bias and social desirability bias. Future research could use multiple data sources or objective performance metrics to address these biases and strengthen the study's findings. While the current study highlights the direct relationship between EE and financial performance of graduate-owned SME, there is still room for further investigation to uncover the complex mechanisms and contextual factors that shape this relationship. Furthermore, comparative studies across different educational settings and geographical regions could offer valuable insights into the generalizability and applicability of findings in diverse contexts. Overall, continued research in this domain is essential for advancing our understanding of the complex interplay between education, entrepreneurship, and business performance.

## References


Ab Hamid, M. R., Sami, W., & Mohmad Sidek, M. H. (2017). Discriminant Validity Assessment: Use of Fornell & Larcker criterion versus HTMT Criterion. *Journal of Physics: Conference Series*, *890*(1), 1-5. https://doi.org/10.1088/1742-6596/890/1/012163

Adebusuyi, A. S., Adebusuyi, O. F., & Kolade, O. (2022). Development and validation of sources of entrepreneurial self-efficacy and outcome expectations: A social cognitive career theory perspective. *The International Journal of Management Education*, *20*(2), 100572. https://doi.org/10.1016/j.ijme.2021.100572

Aguirre-Urreta, M. I., & Hu, J. (2019). Detecting common method bias: Performance of the Harman's single-factor test. *Data Base for Advances in Information Systems*, *50*(2), 45-70. https://doi.org/10.1145/3330472.3330477

Alasadi, R., & Abdelrahim, A. (2007). Critical analysis and modelling of small business performance (Case Study: Syria). *Journal of Asia Entrepreneurship and Sustainability*, *3*(2), 1-22.

Alberti, F., Sciascia, S., & Poli, A. (2004). Entrepreneurship Education : Notes on an Ongoing Debate. In *14th Annual IntEnt Conference* (Issue July, pp. 4-7).

Amofah, K., & Saladrigues, R. (2022). Impact of attitude towards entrepreneurship education and role models on entrepreneurial intention. *Journal of Innovation and Entrepreneurship*, *11*, 36. https://doi.org/10.1186/s13731-022-00197-5

Arivazhagan, D., Poongavanam, S., Manoharan, C., Divyaranjani, R., & Vetri Selvan, R. (2020). A birds view on success aspects and failure elements in network of small & medium enterprises and entrepreneurial firms in India. *International Journal of Scientific and Technology Research*, *9*(4), 1535-1537.

Bae, T. J., Qian, S., Miao, C., & Fiet, J. O. (2014). The Relationship Between Entrepreneurship Education and Entrepreneurial Intentions: A Meta-Analytic Review. *Entrepreneurship: Theory and Practice*, *38*(2), 217-254. https://doi.org/10.1111/etap.12095

Becker, G. S. (1964). *Human capital : a theoretical and empirical analysis, with special reference to education*. National Bureau of Economic Research : Distributed by Columbia University Press, New York.

Becker, G. S. (1993). *A Theoretical and Empirical Analysis, with Special Reference to Education* (3rd ed.). University of Chicago Press. https://doi.org/http://dx.doi.org/10.7208/chicago/9780226041223.001.0001

Caliendo, M., Künn, S., & Weißenberger, M. (2016). Personality traits and the evaluation of start-up subsidies. *European Economic Review*, *86*, 87-108. https://doi.org/10.1016/j.euroecorev.2015.11.008

Cantú, A., Aguiñaga, E., & Scheel, C. (2021). Learning from failure and success: The challenges for circular economy implementation in SMEs in an emerging economy. *Sustainability (Switzerland)*, *13*(3), 1529. https://doi.org/10.3390/su13031529

Capocci, S. K. (2022). Teaching Entrepreneurship Through Innovative Approaches: an Educator'S Pedagogical Perspective. *Adıyaman Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *15*(40), 166-203.

Chao, E. (2022). The Role of Incubation Centres at Universities in Supporting Youth Innovation and Entrepreneurship. In *African Perspectives on Poverty, Indigenous Knowledge Systems, and Innovation.* (pp. 201-219). https://doi.org/https://doi.org/10.1007/978-981-19-5856-4_13

Cho, Y. H., & Lee, J.-H. (2018). Entrepreneurial orientation, entrepreneurial education and performance. *Asia Pacific Journal of Innovation and Entrepreneurship*, *12*(2), 124-134. https://doi.org/10.1108/apjie-05-2018-0028

Clement, N. N. (2023). Relationship Between Growth Strategies and SME Success / Failure: The case of SMEs in the Western Region of Cameroon. *International Journal of Scientific and Management Research*, *6*(4), 1-14. https://doi.org/10.37502/ijsmr.2023.6401

Din, I. U., & Abbas, S. G. (2021). A Review of Subjective Measures of Small and Medium Enterprises (SMEs) Performance A Case of Pharmaceutical SMEs. *Journal of Managerial Sciences*, *15*(4), 152-168.


 https://doi.org/10.58548/2024abmj22.2842

Djubaedi, D., Rohadi, T., & Kodama, Y. (2023). Core Entrepreneurial Competencies for Local Content Curriculum. *International Journal of Educational Qualitative Quantitative Research*, *2*(1), 12-17.

Dou, X. ., Zhu, X. ., Zhang, J. Q. ., & Wang, J. (2019). Outcomes of entrepreneurship education in China : A customer experience. *Journal of Business Research*, *103*(February), 338-347.

Elert, N., Andersson, F. W., & Wennberg, K. (2015). The impact of entrepreneurship education in high school on long-term entrepreneurial performance. *Journal of Economic Behavior and Organization*, *111*, 209-223. https://doi.org/10.1016/j.jebo.2014.12.020

Fayolle, A., & Gailly, B. (2008). From craft to science: Teaching models and learning processes in entrepreneurship education. *Journal of European Industrial Training*, *32*(7), 569-593.

Fayolle, A., Gailly, B., & Lassas-Clerc, N. (2006). Effect and Counter-effect of Entrepreneurship Education and Social Context on Student ' s Intentions. *Estudios de Economia Aplicada*, *24*, 509-523.

Fayomi, E. J., Fields, Z., Arogundade, K. K., Ojugbele, H. O., Ogundipe, F., & Ganiyu, I. O. (2019). Complementary Approach to Teaching and Learning Entrepreneurship in Nigerian Universities: A Conceptual Framework. *Universal Journal of Management*, *7*(2), 57-77. https://doi.org/10.13189/ujm.2019.070203

Frank, H., Lueger, M., & Korunka, C. (2007). The significance of personality in business start-up intentions, start-up rialization and business success. *Entrepreneurship and Regional Development*, *19*(3), 227-251.

Fulgence, K. (2015). Assessing the status of entrepreneurship education courses in higher learning institutions: The case of Tanzania education schools. *Education and Training*, *57*(2), 239-258. https://doi.org/10.1108/ET-05-2013-0063

Garren, S. T., & Cleathero, B. A. (2024). Assessment of Required Sample Sizes for Estimating Proportions. *Asian Journal of Probability and Statistics*, *26*(7), 48-56. https://doi.org/10.9734/ajpas/2024/v26i7629

Gumel, B. I., & Bin Bardai, B. (2023). A Review of Critical Success Factors Influencing the Success of SMEs. *SEISENSE Business Review*, *3*(1), 37-61. https://doi.org/10.33215/sbr.v3i1.906

Gunartin, Pratikto, H., Winarno, A., & Restuningdiah, N. (2023). The Role of Entrepreneurial Competencies: Successful Key Smes a Literature Review. *International Journal of Professional Business Review*, *8*(7), e01955. https://doi.org/10.26668/businessreview/2023.v8i7.1955

Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, *31*(1), 2-24. https://doi.org/10.1108/EBR-11-2018-0203

Hapsari, P. I., Wiksuana, I. G. B., Artini, L. G. S., & Dewi, S. K. S. (2024). Entrepreneurial orientation and funding decisions on the financial performance of small and medium industries. *Indonesian Journal of Multidisciplinary Science*, *3*(8). https://doi.org/10.55324/ijoms.v3i8.884

Heenkenda, H. M. J. C. B., Xu, F., Kulathunga, K. M. M. C. B., & Senevirathne, W. A. R. (2022). The Role of Innovation Capability in Enhancing Sustainability in SMEs: An Emerging Economy Perspective. *Sustainability (Switzerland)*, *14*(17), 10832. https://doi.org/10.3390/su141710832

Hegarty, C., & Jones, C. (2008). Graduate entrepreneurship: More than child's play. *Education and Training*, *50*(7), 626-637. https://doi.org/10.1108/00400910810909072

Henseler, J., Müller, T., & Schuberth, F. (2018). New guidelines for the use of PLS path modeling in hospitality, travel, and tourism research. In F. Ali, S. M. Rasoolimanesh, & C. Cobanoglu (Eds.), *Applying Partial Least Squares in Tourism and Hospitality Research* (pp. 17-33). https://doi.org/10.1108/978-1-78756-699-620181002

Hofer, A. R., & Potter, J. (2010). University entrepreneurship support: policy issues, good practices and recommendations. *OECD Directorate's Programme on Institutional Management in Higher Education*, *November*, 35.

Huda, N., & Munandar, A. (2018). The effect of entrepreneurship competency and adaptability of business environment to financial performance of small and medium business units in Bima city. *Jurnal Terapan Manajemen Dan Bisnis*, *4*(2), 133-137.

Isac, C., Iordache, A. M. M., Baltador, L., Coculescu, C., & Niță, D. (2023). Enhancing Students' Entrepreneurial Competencies through Extracurricular Activities—A Pragmatic Approach to Sustainability-Oriented Higher Education. *Sustainability (Switzerland)*, *15*(11), 8708. https://doi.org/10.3390/su15118708

Isaga, N. (2018). The relationship of personality to cognitive characteristics and SME performance in Tanzania. *Journal of Small Business and Enterprise Development*, *25*(4), 667-686.

Isaga, N., Masurel, E., & Van Montfort, K. (2015). Owner-manager motives and the growth of SMEs in developing countries: Evidence from the furniture industry in Tanzania. *Journal of Entrepreneurship in Emerging Economies*, *7*(3), 190-211. https://doi.org/10.1108/JEEE-11-2014-0043

Ismail, A. B. T., Sawang, S., & Zolin, R. (2018). Entrepreneurship education pedagogy: teacher-student-centred paradox. *Education and Training*, *60*(2), 168-184. https://doi.org/10.1108/ET-07-2017-0106

Ismail, I. J. (2022). Entrepreneurs' competencies and sustainability of small and medium enterprises in Tanzania. A mediating effect of entrepreneurial innovations. *Cogent Business & Management*, *9*(1), 2111036.

 https://doi.org/10.58548/2024abmj22.2842

https://doi.org/10.1080/23311975.2022.2111036

Jamil, M. I. M. (2023). A Discourse on Entrepreneurial Discontinuance, Failure Rates, and Failed Business Models. In E. Rasmussen & N. Petersen (Eds.). In *Handbook of Research on Business Model Innovation Through Disruption and Digitalization.* (pp. 21 (115-135)).

John, E. (2016). *Entrepreneurial Networks and Performance of SME in Tanzania: The Role of Entrepreneur's Social Competence.* The University of Dodoma. Dodoma, Tanzania.

Kalimasi, P. (2018). *Assessment of Entrepreneurship Education Trends in the Formal Education System in Tanzania*. *21*(2), 53-65.

Karim, M. S. (2013). Entrepreneurial Intention and Entrepreneurial Behaviour: A Social Psychological Perspective. Aston University, England.

Katundu, M. A., & Gabagambi, D. M. (2016). Barriers to business start-up among Tanzanian university graduates: evidence from the University of Dar-es-salaam. *Global Business Review*, *17*(1), 16-37.

Kerr, S. P., Kerr, W. R., & Xu, T. (2018). Personality Traits of Entrepreneurs : A Review of Recent Literature. In *Foundations and Trends in Entrepreneurship*, *14*(3), 279-356.

Khalil, H. S. (2023). Examining the Contribution of Entrepreneurial Education Programs and Entrepreneurial Human Capital on Small and Medium Enterprises Perceived Business Performance in the United Arab Emirates, UAE: The Mediating Role of Absorptive Capacity. In *Alareeni, B., Hamdan, A. (eds) Technology and Business Model Innovation: Challenges and Opportunities. ICBT 2023. Lecture Notes in Networks and Systems* (p. pp 458-472). Springer, Cham. https://doi.org/https://doi.org/10.1007/978-3-031-55911-2_45

Khan, G. F., Sarstedt, M., Shiau, W. L., Hair, J. F., Ringle, C. M., & Fritze, M. P. (2019). Methodological research on partial least squares structural equation modeling (PLS-SEM): An analysis based on social network approaches. *Internet Research*, *29*(3), 407-429. https://doi.org/10.1108/IntR-12-2017-0509

Kock, F., Berbekova, A., & Assaf, A. G. (2021). Understanding and managing the threat of common method bias: Detection, prevention and control. *Tourism Management*, *86*(October). https://doi.org/10.1016/j.tourman.2021.104330

Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of E-Collaboration*, *11*(4), 1-10. https://doi.org/10.4018/ijec.2015100101

Kyari, A. K. (2020). The impact of university entrepreneurship education on financial performance of graduate entrepreneurs. *Journal of Entrepreneurship Education*, *23*(1), 1-11.

Lekoko, M., Rankhumise, E. M., & Ras, P. (2012). The effectiveness of entrepreneurship education: What matters most? *African Journal of Business Management*, *6*(51), 12023-12032. https://doi.org/10.5897/ajbmx12.001

Lyu, J., Shepherd, D., & Lee, K. (2023). The Effectiveness of University Entrepreneurship Activities on Student Start-up Behavior. In *The Age of Entrepreneurship Education Research: Evolution and Future* (pp. 161-204). Emerald Group Publishing Limited. https://doi.org/10.1108/S1074-754020230000023009

Lyu, J., Shepherd, D., & Lee, K. (2024). The impact of entrepreneurship pedagogy on nascent student entrepreneurship: an entrepreneurial process perspective. *Studies in Higher Education*, *49*(1), 62-83.

Madawala, K., Foroudi, P., & Palazzo, M. (2023). Exploring the role played by entrepreneurial self-efficacy among women entrepreneurs in tourism sector. *Journal of Retailing and Consumer Services*, *74*(April), 103395. https://doi.org/10.1016/j.jretconser.2023.103395

Mahmood, R., Zahari, A. S. M., Ibrahim, N., Jaafar, N. F. H. N., & Yaacob, N. M. (2021). The Impact of Entrepreneur Education on Business Performance. *Asian Journal of University Education*, *16*(4), 171-180.

Makhija, P., & Goel, A. (2019). Measuring organizational performance in Indian MSMEs: A qualitative study. *Journal of Management Research and Analysis*, *6*(1), 45-53. https://doi.org/10.18231/j.jmra.2019.009

Mangasini, A. (2015). *Entrepreneurship education and business start-up: assessing entrepreneurial tendencies among university graduates in Tanzania*. Sokoine University of Agriculture. Morogoro, Tanzania.

Martin, B. C., McNally, J. J., & Kay, M. J. (2013). Examining the formation of human capital in entrepreneurship: A meta-analysis of entrepreneurship education outcomes. *Journal of Business Venturing*, *28*(2), 211-224.

Marvel, M. R., Davis, J. L., & Sproul, C. R. (2016). Human Capital and Entrepreneurship Research: A Critical Review and Future Directions. *Entrepreneurship: Theory and Practice*, *40*(3), 599-626.

Matotola, S. (2016). *Performance of young entrepreneurs in Tanzania: A case of business incubators in higher learning institutions*. The University of Dodoma. Dodoma, Tanzania.

Morris, M. H. (2022). Re-thinking Content: Teaching Students About Entrepreneurship Versus How to Be an Entrepreneur. *The Journal of Entrepreneurship*, *31*(2), 11-37. https://doi.org/10.1177/09713557221107434

Mukherjee, K. (2016). To cite this version : The Psychology of the Successful Entrepreneur. *International Journal of Advanced Engineering and Management*, *1*(1), 25-32.

Munawaroh, M., Indarti, N., Ciptono, W. S., & Nastiti, T. (2023). Learning from entrepreneurial failure: examining attribution and contextual factors of small- and medium-sized enterprises in Indonesia. *Journal of Small Business and Enterprise Development*, *30*(3), 501-522. https://doi.org/10.1108/JSBED-06-2022-0269

 https://doi.org/10.58548/2024abmj22.2842

Mustapha, M., & Selvaraju, M. (2015). Personal attributes, family influences, entrepreneurship education and entrepreneurship inclination among university students. *Kajian Malaysia*, *33*(1), 155-172.

Mwasalwiba, E., Dahles, H., & Wakkee, I. (2012). Graduate entrepreneurship in Tanzania: Contextual enablers and hindrances. *European Journal of Scientific Research*, *76*(3), 386-402.

Nabi, G., LiñáN, F., Fayolle, A., Krueger, N., & Walmsley, A. (2017). The impact of entrepreneurship education in higher education: A systematic review and research agenda. *Academy of Management Learning and Education*, *16*(2), 277-299. https://doi.org/10.5465/amle.2015.0026

Ncanywa, T., & Dyantyi, N. (2022). The Role of Entrepreneurship Education in Higher Education Institutions. *E-Journal of Humanities, Arts and Social Sciences*, *3*(11), 75-89. https://doi.org/10.38159/ehass.2022sp3117

Ndiaye, N., Razak, L., Nagayev, R., & Ng, A. (2018). Demystifying small and medium enterprises' (SMEs) performance in emerging and developing economies. *Borsa Istanbul Review*, *18*(4), 269-281.

Ndibalema, I. C., John, E., & Msuya, O. W. (2024). Exploring the role of entrepreneurial self-efficacy into performance of graduate-owned small and medium-sized enterprises in Tanzania. *Journal of Applied Research in Higher Education*, ahead-of-print. https://doi.org/10.1108/JARHE-03-2024-0146

Newman, A., Obschonka, M., Schwarz, S., Cohen, M., & Nielsen, I. (2019). Entrepreneurial self-efficacy: A systematic review of the literature on its theoretical foundations, measurement, antecedents, and outcomes, and an agenda for future research. *Journal of Vocational Behavior*, *110*(2017), 403-419.

Niyonkuru, R. (2005). *Entrepreneurship education at tertiary institutions in Rwanda: a situation analysis*. University of the Western Cape. South Africa.

Okumu, I. M., & Buyinza, F. (2020). Performance of Small and Medium-sized Enterprises in Uganda: the Role of Innovation. In *African Economic Research Consortium*.

Olokundun, M. A., Moses, C. L., Iyiola, O., Ogunaike, O., Ibidunni, A. S., Kehinde, O., & Motilewa, D. (2018). Experiential pedagogy and entrepreneurial intention: A focus on university entrepreneurship programmes. *Academy of Entrepreneurship Journal*, *24*(2), 1-13.

Pittaway, L., & Cope, J. (2007). Entrepreneurship education: A systematic review of the evidence. *International Small Business Journal*, *25*(5), 479-510. https://doi.org/10.1177/0266242607080656

Pius, A., Habib, A., Ntia, A., Manian, C., Alharahsheh, H., & Guenane, I. (2023). Contextualizing Entrepreneurial Intentions : Psychological , Traits and Behavioral Theory. *The International Journal of Sustainable Approach to Education Practice*, *1*(2), 1-8.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common Method Biases in Behavioral Research: A Critical Review of the Literature and Recommended Remedies. *Journal of Applied Psychology*, *88*(5), 879-903. https://doi.org/10.1037/0021-9010.88.5.879

Potocan, V., Nedelko, Z., Mulej, M., & Dabic, M. (2021). How University's Activities Support the Development of Students' Entrepreneurial Abilities: Case of Slovenia and Croatia. *Journal of the Knowledge Economy*, *12*(1), 22-40. https://doi.org/10.1007/s13132-016-0407-3

Purwana, D., & Widyastuti, U. (2017). Does Entrepreneurial University Support Entrepreneurship Education? *Asian Journal of Social Sciences and Management Studies*, *4*(2), 70-75.

Ramadani, V., Rahman, M. M., Salamzadeh, A., Rahaman, M. S., & Abazi-Alili, H. (2022). Entrepreneurship Education and Graduates' Entrepreneurial Intentions: Does Gender Matter? A Multi-Group Analysis using AMOS. *Technological Forecasting and Social Change*, *180*, 121693.

Rashid, N., Ismail, W. N. S. W., Rahman, M. S. A., & Afthanorhan, A. (2018). Conceptual Analysis on Performance Measurement Used in SMEs Research: The Effectiveness of Firm's Overall Performance. *International Journal of Academic Research in Business and Social Sciences*, *8*(11), 1401-1412.

Rassool, A. K., Sahaym, E. A., & Thren, G. L. (2023). Entrepreneurial Orientation and Performance of Small and Medium Manufacturing Firms in Gothenburg, Sweden. *Journal of Entrepreneurship and Project Management*, *7*(6), 1-10. https://doi.org/10.53819/81018102t5202

Rengiah, P. (2013). *Effectiveness of entrepreneurship education in developing entrepreneurial intentions among Malaysian university students*. Southern Cross University.

Ribeiro, N., Malafaia, C., Neves, T., & Menezes, I. (2024). The impact of extracurricular activities on university students' academic success and employability. *European Journal of Higher Education*, *14*(3), 389-40.

Ringle, C. M., Sarstedt, M., Sinkovics, N., & Sinkovics, R. R. (2023). A perspective on using partial least squares structural equation modelling in data articles. *Data in Brief*, *48*, 109074.

Rodrigues, A. L. (2023). Entrepreneurship Education Pedagogical Approaches in Higher Education. *Education Sciences*, *13*(9), 940. https://doi.org/10.3390/educsci13090940

Rodríguez-Ardura, I., & Meseguer-Artola, A. (2020). Editorial: How to prevent, detect and control common method variance in electronic commerce research. *Journal of Theoretical and Applied Electronic Commerce Research*, *15*(2), I-V. https://doi.org/10.4067/S0718-18762020000200101

Rosa, P. (2003). ' Hardly Likely to Make the Japanese. *International Small Business Journal*, *21*(4), 435-459.

 https://doi.org/10.58548/2024abmj22.2842

Saeed, S., Muffatto, M., & Yousafzai, S. (2014). A Multi-level Study of Entrepreneurship Education among Pakistani University Students. *Entrepreneurship Research Journal*, *4*(3), 1-25. https://doi.org/10.1515/erj-2013-0041

Schettler, D. P. (2023). Performance: Differences in measuring performance. *Humanities and Social Sciences Latvia*, *31*(1), 65-79.

Shambare, R. (2013). Barriers to Student Entrepreneurship in South Africa. *Journal of Economics and Behavioral Studies*, *5*(7), 449-459. https://doi.org/10.22610/jebs.v5i7.419

Silberman, D., Aguinis, H., & Carpenter, R. E. (2023). Using Extreme Pedagogy to Enhance Entrepreneurship Education. *Entrepreneurship Education and Pedagogy*, *6*(3), 546-560.

Singh, S., & Sagar, R. (2021). A critical look at online survey or questionnaire-based research studies during COVID-19. *Asian Journal of Psychiatry*, *65*(August), 102850. https://doi.org/10.1016/j.ajp.2021.102850

Sirelkhatim, F., & Gangi, Y. (2015). Entrepreneurship education: A systematic literature review of curricula contents and teaching methods. *Cogent Business & Management*, *2*(1), 1052034.

Taneja, B. (2022). The University Environment and Graduate Entrepreneurship: A Study of Ranchi City. In I. W. Katono (Ed.), *Promoting Entrepreneurship to Reduce Graduate Unemployment* (pp. 164-194). IGI Global.

Teixeira, P. N. (2014). Gary Stanley Becker (1930-2014). Economics as a study of human behaviour. *History of Economic Ideas*, *22*(2), 9-22.

Tundui, H. P. (2012). *Gender and small business growth in Tanzania: the role of habitus*. University of Groningen, SOM research school. Groningen, Netherlands.

URT. (2003). *Small and Medium Enterprise Development Policy*.

van Ewijk, A. (2018). Persistence and acuteness of research gaps in entrepreneurship education: A systematic content analysis of previous reviews (1987-2017). *International Journal of Entrepreneurship*, *22*(2), 1-18.

Verduijn, K., & Berglund, K. (2020). Pedagogical invention in entrepreneurship education: Adopting a critical approach in the classroom. *International Journal of Entrepreneurial Behaviour and Research*, *26*(5), 973-988.

Vij, S., & Bedi, S. (2016). Are subjective business performance measures justified? *International Journal of Productivity and Performance Management*, *65*(5), 603-621.

Wall, T. D., Michie, J., Patterson, M., Wood, S. J., Sheehan, M., Clegg, C. W., & West, M. (2004). On the validity of subjective measures of company performance. *Personnel Psychology*, *57*(1), 95-118. https://doi.org/10.1111/j.1744-6570.2004.tb02485.x

Walter, S. G., & Block, J. H. (2016). Outcomes of entrepreneurship education: An institutional perspective. *Journal of Business Venturing*, *31*(2), 216-233. https://doi.org/https://doi.org/10.1016/j.jbusvent.2015.10.003

Waziri, A., & Nnko, E. (2023). The Influence of Financial Monitoring on Performance of Small and Medium Enterprises in Tanzania: A Case of Arusha City Council. *International Journal of Small Business and Entrepreneurship Research*, *11*(2), 1-11. https://doi.org/10.37745/ijsber.2013/vol11n2111

Yeh, C.-H., Lin, H.-H., Wang, Y.-M., Wang, Y.-S., & Lo, C.-W. (2021). Investigating the relationships between entrepreneurial education and self-efficacy and performance in the context of internet entrepreneurship. *The International Journal of Management Education*, *19*(3), 100565.

Zarnadze, G., Dika, I., Çera, G., & Ribeiro, H. N. R. (2022). Personality Traits and Business Environment for Entrepreneurial Motivation. *Administrative Sciences*, *12*(4), 176. https://doi.org/10.3390/admsci12040176

Zhao, H., Hills, G. E., & Seibert, S. E. (2005). The mediating role of self-efficacy in the development of entrepreneurial intentions. *Journal of Applied Psychology*, *90*(6), 1265-1272. https://doi.org/10.1037/0021-9010.90.6.1265

Zhao, Y., Zhao, X., Shi, J., Du, H., Marjerison, R. K., & Peng, C. (2022). Impact of entrepreneurship education in colleges and universities on entrepreneurial entry and performance. *Economic Research-Ekonomska Istrazivanja*, *35*(1), 6165-6184. https://doi.org/10.1080/1331677X.2022.2048189

Zulkiffli, S. N. 'Atikah. (2014). Business Performance for SMEs: Subjective or Objective Measure? *Review of Integrative Business and Economics Research*, *3*(1), 371-381.

 https://doi.org/10.58548/2024abmj22.2842