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Role of entrepreneurship education in developing international business competencies: a comparative TVET case study in emerging economies

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ABSTRACT

This study explores the impact of entrepreneurship education in developing international business competencies in TVET institutions, with a comparative focus on India and South Africa. The research employed a comparative case study and mixed method approach. It examined the entrepreneurship education curricula, teaching methodologies, and learning outcomes in selected TVET institutions in India and South Africa. The research investigated the extent to which entrepreneurship education equips students with essential skills such as cross-cultural dynamics, international trade regulations, global supply chains, foreign market entry strategies, strategic thinking, international market analysis, and global networking. Data was collected through surveys and interviews with students, educators, and industry stakeholders from selected TVET institutions in both countries. The study's significance is in the unlocking of the needed understanding of how entrepreneurship education develops business competencies. The study was guided by Human Capital Theory argues that education and training increase individuals' skills, knowledge, and competencies, ultimately leading to enhanced productivity and better economic outcomes The findings indicate that India's TVET system has a stronger emphasis on developing practical entrepreneurial skills, with a focus on business plan development, access to funding, and mentorship programs. In contrast, South Africa's TVET institutions tend to have a more theoretical approach, with a greater emphasis on developing an entrepreneurial mindset rather than practical business skills. In terms of Industry mentorship program, India is at 65% and South Africa at 22%. For business plan training, India is at 72% while South Africa is at 35%. lastly on mindset vs skills focus, India is at 38% and South Africa at 68% The paper concluded by offering policy recommendations to strengthen the role of TVET institutions in enhancing global business readiness among graduates in emerging economies.

Keywords: Entrepreneurship education, international business, emerging economies, international business competences, TVET institutions

INTRODUCTION

Entrepreneurship education has emerged as a critical driver of economic development, particularly in emerging economies where Technical and Vocational Education and Training (TVET) institutions play a pivotal role in equipping students with the necessary skills for global competitiveness (Fayolle and Gailly, 2015). The increasing integration of global markets necessitates the development of international business competencies, including cross-cultural communication, innovation, and adaptive problem-solving

skills (Knight and Liesch, 2016). In this context, entrepreneurship education within TVET systems is increasingly recognized as a catalyst for fostering these competencies, thereby enhancing employability and entrepreneurial ventures in international markets (Matlay, 2008).

Emerging economies such as India and South Africa face unique challenges in aligning their TVET curricula with the demands of a rapidly evolving global business environment (McGrath and Powell, 2016). While India has made significant strides in promoting entrepreneurship through initiatives like *Startup India* and skill development programs under the *National Skill Development Corporation (NSDC)*, South Africa has integrated entrepreneurship training within its *National Development Plan (NDP)* to combat youth unemployment and stimulate economic growth (Arogundade, 2011; Herrington and Kew, 2017). Despite these efforts, there remains a gap in understanding how effectively entrepreneurship education in TVET institutions translates into enhanced international business competencies (IBCs) IBCs refer to the knowledge, skills, and abilities that enable entrepreneurs and business professionals to effectively operate, compete, and expand in global markets. These competencies encompass understanding cross-cultural dynamics, international trade regulations, global supply chains, and foreign market entry strategies (Cavusgil et al., 2020).

Emerging economies are nations with rapidly growing industrialisation and increasing participation in global markets, often characterized by rising income levels, improving infrastructure, and ongoing economic reforms (Hoskisson et al., 2000). These economies typically transition from low-income, less-developed status to more advanced economic conditions through sustained growth and development efforts (Cavusgil et al., 2013).

This study aims to evaluate the role of entrepreneurship education in developing international business competencies among TVET students in India and South Africa through comparative analysis.

In India, the government has integrated entrepreneurship education into TVET through initiatives like the *Skill India Mission* and *National Entrepreneurship Promotion Schemes*. These programs aim to equip students with the knowledge and skills needed for innovation and global competitiveness, emphasizing business development, market analysis, and international trade practices (Federation of Indian Chambers of commerce and Industry, 2018). By fostering an entrepreneurial mindset, India's TVET system helps students create globally viable business ventures and contribute to the country's economic integration into international markets (Patra and Chatterjee, 2019). India's TVET system is governed by the National Skill Development Corporation (NSDC), established in 2008, and the Ministry of Skill Development and Entrepreneurship (MSDE), created in 2014.

The National Policy on Skill Development and Entrepreneurship (NPSPDE) provides the overarching framework for skill development initiatives. Key programs include the Pradhan Mantri Kaushal Vikas Yojana (PMKVY), launched in 2015, which aims to provide industry-relevant skill training to youth. (National Policy on Skill Development and Entrepreneurship, 2015)

Before the introduction of structured TVET programs, India faced significant challenges in skill development, including a lack of standardized training, low employability of graduates, and a mismatch between industry requirements and the skills of the workforce. Only about 2% of the workforce had formal vocational training, and the informal sector dominated employment.(World Bank 2008) . In comparison, for South Africa, prior to the establishment of structured TVET programs, the country faced high youth unemployment rates (over 50%) and a skills gap in critical sectors such as engineering, construction, and information technology. The legacy of apartheid resulted in unequal access to

education and training, particularly for marginalized communities. (Department of Higher Education and Training ,2015).

Ministry of Skills Development and Entrepreneurship (2023). The introduction of TEVET programs in India has led to the establishment of over 14,000 Industrial Training Institutes (ITIs) and the training of millions of youth under PMKVY. There has been an increase in the formalization of skill training and improved employability, with many programs focusing on entrepreneurship education to foster self-employment. The initiatives have also encouraged public-private partnerships, with industries actively participating in curriculum design and training delivery (Ministry of Skills Development and Entrepreneurship, 2023).

Similarly, South Africa has made strides in promoting entrepreneurship education in TVET institutions through the *National Skills Development Strategy* and *Youth Enterprise Development Programmes*. These initiatives focus on developing students' entrepreneurial skills, including business planning, digital literacy, and cross-border trade knowledge, preparing them to participate in international business activities (Nkondo et al., 2021). Such efforts have enabled South African students to launch start-ups with international reach and contribute to the nation's economic growth (Van der Sluis, 2020). South Africa's TVET system is regulated by the Department of Higher Education and Training (DHET) and the Quality Council for Trades and Occupations (QCTO). The National Skills Development Strategy (NSDS) and the Skills Development Act (1998) provide the legal framework for vocational training. The Technical and Vocational Education and Training Colleges (TVET Colleges) are the primary institutions delivering vocational education (Nkondo et al., 2021).

The introduction of TVET programs in South Africa, has expanded access to vocational training, with over 50 TVET Colleges and more than 300 campuses across the country (Department of Higher Education and Training, 2021). There has been a focus on aligning training programs with industry needs, particularly in sectors like renewable energy, mining, and agriculture (World Bank, 2019). Entrepreneurship education has been integrated into the curriculum, encouraging graduates to start their own businesses and contribute to economic growth. Department of Higher Education and Training (2021). The initiatives have also improved collaboration between government, industry, and educational institutions.

Background to the study

Department of Higher Education and Training (2020). In South Africa, the integration of entrepreneurship education into TVET institutions has been prioritised to address high youth unemployment rates and stimulate economic growth. However, studies suggest that many TVET graduates still lack the requisite competencies to engage in cross-border trade and global entrepreneurship (Chimucheka,2014). Challenges such as outdated curricula, inadequate industry linkages, and limited access to global business networks hinder the ability of TVET graduates to compete internationally (Herrington and Kew, 2018).

The Indian government's "Skill India" initiative aims to enhance vocational training, yet research indicates that many graduates struggle to scale their businesses beyond local markets due to insufficient exposure to international trade practices (Kumar, 2021). Kumar and Sharma (2021) found that only 22% of Skill India graduates engaged in entrepreneurship had any formal training in export procedures, global compliance, or cross-border trade regulations. 75% of surveyed micro-entrepreneurs (trained under Skill India) reported difficulties in accessing international markets due to a lack of knowledge about certifications like ISO, CE, or FDA standards (Federation of Indian Chamber of Commerce and Industry, 2022).

Despite contributing 30% of India's GDP, MSMEs account for just 48% of exports (Ministry of MSME, 2023), with most confined to domestic markets. World Bank (2020) survey revealed that less than 10% of

Indian small businesses export, compared to 25% in China and 40% in Germany, partly due to inadequate trade training.

Many Skill India-trained artisans producing brassware struggled to meet European REACH (chemical safety) regulations, leading to order cancellations (Economic Times, 2021). Textile Entrepreneurs (Surat, Gujarat): Several small garment manufacturers trained under Skill India lacked awareness of international labeling laws, resulting in rejected shipments to the EU (IBEF, 2022). Agri-Entrepreneurs (Maharashtra): Farmers trained in food processing under Skill India faced challenges in complying with US FDA and EU organic certification norms, limiting export potential (Nabard, 2021).

The Ministry of Skill Development (2023), Only 15% of Skill India programs include modules on global trade, leaving most graduates unprepared for exports. Initiatives like "Skill India International" (launched 2022) aim to address this by providing global trade training, but coverage remains low (only 50,000 trained as of 2023 vs. 12+ million under Skill India).

While India has a robust entrepreneurial ecosystem, the effectiveness of TVET entrepreneurship education in preparing students for global business remains a subject of debate (Gupta and Rathore, 2020).

In comparison with India, South Africa, as an emerging economy, faces persistent challenges of high unemployment (32.9% in first quarter of 2024 (Stats SA. 2024). and economic inequality. In response, the government has prioritised TVET Institutions to foster entrepreneurship and self-employment. However, while TVET institutions produce skilled graduates, many struggle to expand beyond local markets due to limited exposure to international business practices.

Globalization demands that entrepreneurs possess skills in cross-border trade, digital commerce, export compliance, and foreign market entry strategies. Yet, research indicates that: Only 12% of South African SMEs engage in exports (World Bank, 2023), compared to 30% in Brazil and 40% in Malaysia. A 2022 study by the Department of Higher Education and Training (DHET) found that less than 20% of TVET entrepreneurship curricula include modules on international trade, leaving graduates ill-equipped for global markets.

Problem statement

Entrepreneurship education plays a crucial role in equipping students with the necessary skills and knowledge to navigate the complexities of international business.

In emerging economies such as South Africa and India, where globalization is rapidly influencing market dynamics, the development of international business competences among TVET students is vital (Kuratko, 2019).

Despite various initiatives to integrate entrepreneurship education into TVET curricula, concerns remain about its effectiveness in preparing graduates for international business operations, particularly in competitive global markets (Ndofirepi, 2020).

Effective entrepreneurship education must go beyond teaching about business creation; it should aim to develop an entrepreneurial mindset by integrating pedagogical methods that are learner-centered, action-oriented, and reflective in nature (Fayolle and Gailly, 2008). Such education empowers students to deal with uncertainty, take initiative, and create value in diverse contexts.

This study seeks to bridge the knowledge gap by assessing the strengths and weaknesses of entrepreneurship education in South African and Indian TVET institutions and its impact on students' readiness for global business ventures.

Consequences for Students

Without effective entrepreneurship education focused on IBCs (e.g., cross-cultural management, international marketing, and global trade), students may lack the skills to succeed in international markets, reducing their career mobility and employability beyond local borders.
Students may struggle to start or scale businesses internationally, due to a lack of knowledge on global value chains, export regulations, or foreign market entry strategies.
Students may become disengaged due to irrelevant curricula and face a mismatch between their skills and global labor market demands, limiting their economic empowerment and social mobility.

Consequences for TVET Institutions

Institutions that fail to embed IBCs in entrepreneurship education may be perceived as outdated or irrelevant, affecting their ability to attract funding, partnerships, or international students. Poorly developed international competencies reduce institutions' ability to collaborate with multinational companies or engage in international exchange programs, weakening institutional capacity-building efforts.
Institutions may witness a growing disconnect between graduates' qualifications and employer expectations, particularly in export-led sectors or international enterprises.

Consequences for Employers

Employers, especially in sectors like logistics, trade, tourism, or ICT, may struggle to recruit graduates with global business awareness, intercultural competence, and strategic thinking, undermining their international growth strategies.
Firms may incur additional costs to retrain graduates in areas such as negotiation with foreign partners, international regulations, or digital trade platforms.
Limited exposure to international entrepreneurial models may result in a narrow innovation base, affecting firms' ability to compete in global markets.

Consequences for the National Economy

Without a workforce equipped with international business competencies, countries may struggle to diversify exports and remain dependent on primary commodities or domestic markets.
A weak pipeline of internationally competent entrepreneurs can hinder a country's integration into global value chains, limiting foreign exchange earnings and FDI attraction.
Inadequate preparation of students for international business environments may exacerbate youth unemployment and encourage brain drain, as graduates seek better opportunities abroad.

Framework: Contextual Influence on Education Outcomes (CIEO)

Table1. Macro-Contextual Factors. These are broad, environmental elements that shape both educational structures and learner behaviors.

Factor	Description	Impact on Education Outcomes
Economic Environment	Presence of informal employment, unemployment rates, and GDP per capita	Drives necessity-based entrepreneurship learning; promotes self-employment learning over formal business scaling
Cultural Norms and Values	Attitudes toward risk, gender roles, and entrepreneurial norms	Influence gendered participation in entrepreneurship education and preferred learning styles

Factor	Description	Impact on Education Outcomes
		(e.g., practical vs. theoretical)
Policy and Institutional Framework	Government policies on education, entrepreneurship, and labor	Affects availability and structure of entrepreneurship curricula, support systems (grants, incubators), and assessment mechanisms

Table2. Meso-Contextual Factors. These operate at the institutional and community level.

Factor	Description	Impact on Education Outcomes
Institutional Capacity	Availability of trained staff, entrepreneurship labs, and access to real-world projects	Shape the practicality of entrepreneurship learning strategies
Local Employment Trends	Dominance of informal employment or micro-enterprise structures	Encourages education strategies aligned with informal market realities (e.g., street vending, gig work)
Community Networks and Support Systems	Family businesses, mentorship networks, and alumni entrepreneurs	Facilitates experiential learning, mentorship-based learning strategies, and opportunity recognition

Table 3. Micro-Contextual Factors. These involve individual-level influences.

Factor	Description	Impact on Education Outcomes
Learner Background	Socio-economic status, prior work in the informal sector, exposure to entrepreneurship	Determines learner motivation, learning preferences (e.g., hands-on vs. academic), and risk tolerance
Perception of Education Relevance	The belief that entrepreneurship education can lead to income	Influences the engagement level and openness to innovative learning strategies
Access to Resources	Internet, startup capital, time	Affects choice of learning mode—e.g., mobile-based learning, part-time study, short-term practical courses

Existing research on entrepreneurship education in TEVET institutions is often localized, with few studies comparing outcomes across different emerging economies (Jones and Iredale, 2014). On the other hand, while entrepreneurship education is widely studied, its specific impact on international business competencies, such as cross-cultural communication, global market understanding, and international trade skills,

is not well-documented (Matlay, 2008). Lastly, there is limited understanding of how cultural, economic, and institutional differences between countries like India and South Africa influence the effectiveness of entrepreneurship education in fostering international business competencies (Nieman and Nieuwenhuizen, 2019).

The contextual disparities between India and South Africa based on existing literature, including the reference to Nieman and Nieuwenhuizen (2019) are highlighted below using tables

Tables enable empirical comparison across time periods, regions, or institutions, thereby enhancing the reliability of findings about what influences entrepreneurship education outcomes. Fayolle and Gailly (2015) underscore the importance of using comparative data in entrepreneurship education to assess the impact of pedagogical strategies over time. Presenting data in tables enhances transparency and allows for replicability in empirical studies. Readers can clearly trace how secondary data were used to arrive at conclusions about entrepreneurship education. Saunders, Lewis, and Thornhill (2019) tables improve the rigor of research by allowing readers to scrutinize and verify the data presented, especially when drawing conclusions from secondary sources.

Table 4. Cultural Differences: Showing cultural differences between India and South Africa

Factor	India	South Africa
Entrepreneurial Mindset	Strong family business traditions (*Marwaha & Almeida, 2022*), but risk-aversion in formal sectors.	Higher individualistic entrepreneurship due to necessity-driven ventures (*Herrington & Kew, 2023*).
Work Ethic & Hierarchy	Hierarchical business culture; deference to authority may slow innovation (*Hofstede Insights, 2023*).	More egalitarian in business, but racial and historical inequalities persist (*World Bank, 2022*).
Networking & Trust	Reliance on kinship and caste/community networks (*Chandra, 2021*).	More formalized B2B networks, but trust barriers due to historical segregation (*Nieman & Nieuwenhuizen, 2019*).

Table 5. Economic Differences: Showing Economic differences between India and South Africa

Factor	India	South Africa
Formal vs. Informal Economy	~80% informal employment (*ILO, 2023*); entrepreneurship often necessity-based.	~30% informal (*Stats SA, 2023*), but high youth unemployment drives self-employment.
Access to Capital	Microfinance and government schemes (e.g., *MUDRA Loans*) support small enterprises (*MSDE, 2023*).	Limited SME funding; reliance on private equity and NGOs (*OECD, 2022*).
Market Dynamics	Large domestic market with rising digital entrepreneurship (*NASSCOM, 2023*).	Smaller economy, but strong ties to African and EU markets (*DTIC, 2023*).

Table 6. Institutional Differences: Showing Institutional differences between India and South Africa

Factor	India	South Africa
Policy Support	Centralized schemes (e.g., *Startup India, PMKVY*) but uneven state-level implementation (*Deloitte, 2022*).	Decentralized TVET system with industry-aligned curricula (*DHET, 2023*).
Industry-Academia Linkages	Growing corporate partnerships (e.g., *NSDC collaborations*) but gaps in practical training (*FICCI, 2023*).	Stronger WIL (Work-Integrated Learning) mandates in TVETs (*CHE, 2022*).
Regulatory Barriers	Complex compliance for startups (*World Bank Doing Business Report, 2020*).	Faster business registration but financing hurdles (*World Bank, 2023*).

Institutional Theory (North, 1990) posits that institutions, comprising formal rules (laws, regulations, policies) and informal constraints (norms, culture, conventions) shape economic behavior and performance. According to Douglass North, institutions reduce uncertainty by providing a structured framework for human interaction, influencing organizational strategies and outcomes. Stringent regulations may increase operational costs, discouraging entrepreneurship, while flexible policies enhance EE effectiveness. This supports Table 6 content.

General objective

To assess the role of entrepreneurship education of Indian and South African TVET Institutions in developing international business competencies among TVET students.

Specific objectives

1. To evaluate how cultural, economics and Institutional differences influence the effectivenes of entrepreneurship education in fostering International Business competancies of TVET students in South Africa and India

2. To examine the extent to which entrepreneurship education of Indian and South African TVET institutions incorporates international business concepts and practices.

3. To analyse the impact of entrepreneurship education in Indian and South African TVET Institutions on students' preparedness for international market entry and cross-border trade.

3. To compare the effectiveness of entrepreneurship education of Indian and South African TVET Institutions in developing international business skills.

Significance of the study

Students will gain insights into the most effective entrepreneurship training models that foster international business skills, helping them become more competitive in global job markets. Educators can refine their pedagogical approaches by adopting successful methods from either country (e.g., project-based learning, industry collaborations). Policymakers can use the study to align national skills development strategies with global business demands.

TVET institutions can refine their curricula and teaching methodologies to better prepare students for the global market.

This study seeks to explore the role of entrepreneurship education in developing international business competencies within TVET institutions, comparing South Africa and India as key emerging economies. By assessing the impact of curricula, evaluating pedagogical approaches, and contrasting stakeholder perspectives, the research aims to identify best practices that enhance global entrepreneurial readiness. The findings will provide actionable insights for students, educators, policymakers, and industry leaders, contributing to more effective skills

development strategies in a rapidly evolving global economy. The following literature review examines existing research on entrepreneurship education, TVET systems, and international business competencies, establishing a theoretical foundation for this comparative analysis.

LITERATURE REVIEW

Mkhize and Patel (2020) found that South African TVET institutions emphasize practical, hands-on training in entrepreneurship, which enhances students' ability to adapt to global business environments. In contrast, Indian institutions focus more on theoretical knowledge, which limits students' practical application skills.

Gupta and Naidoo (2019) revealed that South African TVET institutions have stronger partnerships with local industries, which provide students with real-world business exposure. Indian institutions, on the other hand, have a more structured approach to entrepreneurship education but lack sufficient industry collaboration.

Singh and Botha (2021) highlighted that South African TVET institutions focus on innovation and problem-solving, which are critical for international business success. Indian institutions, however, prioritize technical skills over entrepreneurial mindset development.

Pillay and Desai (2022) found that South African TVET institutions are more successful in integrating entrepreneurship education with global business skills due to their emphasis on experiential learning. Indian institutions, while strong in technical training, need to adopt a more holistic approach to entrepreneurship education

Reddy and Van der Merwe (2023) concluded that South African TVET institutions are more effective in fostering entrepreneurial mindsets and global business skills due to their focus on innovation and collaboration.

Adeshina Olushola Adeniyi (2023) noted that, despite the global emphasis on entrepreneurship education, its implementation in developing countries, particularly in sub-Saharan Africa, remains in its infancy. The research underscores the lack of comprehensive understanding regarding how various dimensions of entrepreneurship education influence students' readiness to engage in entrepreneurial undertakings.

It is argued that entrepreneurship education equips students with critical skills such as innovation, risk-taking, strategic thinking, and global market awareness (Kuratko, 2005). It fosters an entrepreneurial mindset necessary for identifying and exploiting international business opportunities (Gibb, 2002).

Human Capital Theory (HCT), pioneered by Becker (1964) and Schultz (1961), posits that individuals invest in education, skills, and training to enhance their economic productivity and future earnings. Key principles include: Education as an investment. Individuals acquire knowledge and skills that increase their labour market value. Returns on investment (ROI). Higher education and specialized training lead to better employment opportunities and income. Role of institutions such as Schools, universities, and training programs act as key suppliers of human capital.

Entrepreneurship education is a specialized form of human capital development, where knowledge, skills, and entrepreneurial mindset are cultivated to foster business creation and innovation.

Criticism of HCT: Overemphasis on economic rationality, HCT assumes individuals make education and training decisions based purely on cost-benefit analysis, ignoring social, cultural, and psychological factors. Ignores Structural Inequality, HCT underestimates the role of systemic barriers such as class, race, and gender discrimination. Reduction of education to economic utility, HCT frames education primarily as a tool for economic gain,

neglecting its broader social and civic purposes. Questionable empirical support, while education often correlates with higher earnings, causality is not always clear

Positive Contributions of EE

Entrepreneurship education has been found to significantly enhance international business competences by developing students' abilities in cross-cultural communication, strategic planning, and global networking (Jones and Iredale, 2010). A study by Nabi et al. (2017) demonstrated that entrepreneurship education programs increase students' self-efficacy and entrepreneurial intentions, which are crucial for international business success. Furthermore, entrepreneurship education promotes knowledge of international market dynamics, export practices, and foreign investment strategies (Rae, 2010).

Research in emerging economies also underscores the importance of entrepreneurship education in mitigating institutional voids by equipping students with adaptable skills and innovative problem-solving capabilities (Bruton et al., 2013). In the context of TVET institutions, entrepreneurship education has been instrumental in providing practical, hands-on training aligned with international business standards (Fayolle and Gailly, 2015).

International competencies in entrepreneurship education refer to the knowledge, skills, and attitudes that enable individuals to operate effectively in a global business environment. These include: Cross-cultural awareness which means understanding diverse business practices and cultural norms. Global market knowledge, that is the awareness of international trade, regulations, and economic trends. Adaptability and innovation are the ability to navigate different business environments and innovate across borders. Networking and collaboration include building international partnerships and working in multicultural teams.

Methods for assessing international competencies: Students evaluate their skills in areas like opportunity recognition, risk-taking, and cross-cultural communication (Lackéus, 2015). Global Competency Inventory (GCI) measures intercultural adaptability, perception, and relationship management (Kelley and Meyers, 1995). Simulations and Case Studies can be used where Students engage in international business scenarios (e.g., export strategies, cross-cultural negotiations). Entrepreneurship Competitions (e.g., Global Student Entrepreneur Awards) evaluate students' ability to pitch and scale ideas internationally. Entrepreneurial Mindset Profile (EMP) Measures traits like creativity, resilience, and global thinking (Davis et al., 2016). Graduate Surveys and Alumni Tracking Measures long-term success in international ventures.

To evaluate the effectiveness of entrepreneurship programs, one can use quantitative metrics or qualitative metrics:

1. Quantitative Metrics, Number of International Startups Launched, this tracks ventures with global reach. Employment Outcomes can be used to measure graduates working in multinational firms or running global businesses.

2. Qualitative Metrics, Student and Employer Feedback, by gathering perceptions of program impact. Case Study Analysis through examining real-world applications of learned competencies.

Criticisms and Challenges of Entrepreneurship Education

Despite its benefits, entrepreneurship education has faced criticisms regarding its effectiveness and applicability. Some studies argue that entrepreneurship education often lacks a practical orientation and remains overly theoretical, limiting its impact on real-world business competencies (Oosterbeek et al., 2010). Moreover, the one-size-fits-all approach in entrepreneurship education curricula may not address the specific needs

of diverse economies and cultural contexts (Matlay, 2008).

In emerging economies, resource constraints and inadequate training facilities further hinder the quality of entrepreneurship programs (Amos and Alex, 2014). There is also a gender disparity in accessing and outcomes of entrepreneurship education, with female students often facing more significant barriers to entrepreneurial success (Poggesi et al., 2016).

Honig (2004) highlights the importance of experiential learning, such as business simulations and international internships, in fostering practical international business skills.Current entrepreneurship education assessments fail to account for **cultural, institutional, and policy differences**, leading to a mismatch between training and real-world global business demands. A **revised framework** that integrates **cross-cultural adaptability, long-term outcome tracking, and policy-aware curricula** is essential to prepare students for international entrepreneurship.

Theoretical Framework

A theoretical framework is a rationally developed and connected set of concepts and premises developed from one or more theories that a researcher creates to scaffold a study (Varpio, Paradis andUijtdehaage, 2020). In this study Human Capital Theory (HCT). was chosen to underpin the study. Becker (1964) Human Capital Theory argues that education and training increase individuals' skills, knowledge, and competencies, ultimately leading to enhanced productivity and better economic outcomes. In the context of entrepreneurship education, human capital theory, provides a strong foundation for understanding how equipping students with entrepreneurial knowledge and international business competences improves their ability to innovate, create businesses, and participate in global markets (Unger et al., 2011).

Conceptual Framework:

Human Capital Theory explains how education translates into the development of international business competences like cross-cultural communication, global market analysis, and international trade practices (Martin et al., 2013). This makes the theory particularly relevant for studying how education impacts the readiness of graduates to compete in international markets.

Conceptual Framework

A conceptual framework is a structure which the researcher believes can best explain the natural progression of the phenomenon to be studied. It is linked with the concepts, empirical research and important theories used in promoting and systemizing the knowledge espoused by the researcher. The importance of the conceptual framework is that, it assists the researcher in identifying and constructing his/her worldview on the phenomenon to be investigated Grant and Osansloo (2014). For this study the Human Capital Development Conceptual Framework was adopted.

This framework builds on Human Capital Theory and aligns well with the study's focus on education, skill acquisition, and competency development (Becker, 1964).

The framework illustrates the relationship between entrepreneurship education and the development of international business competences with the moderating and contextual effects of the TVET environment in emerging economies. It helps to explain how educational inputs translate into business capabilities and global readiness.

Figure 1 below shows the conceptualframework

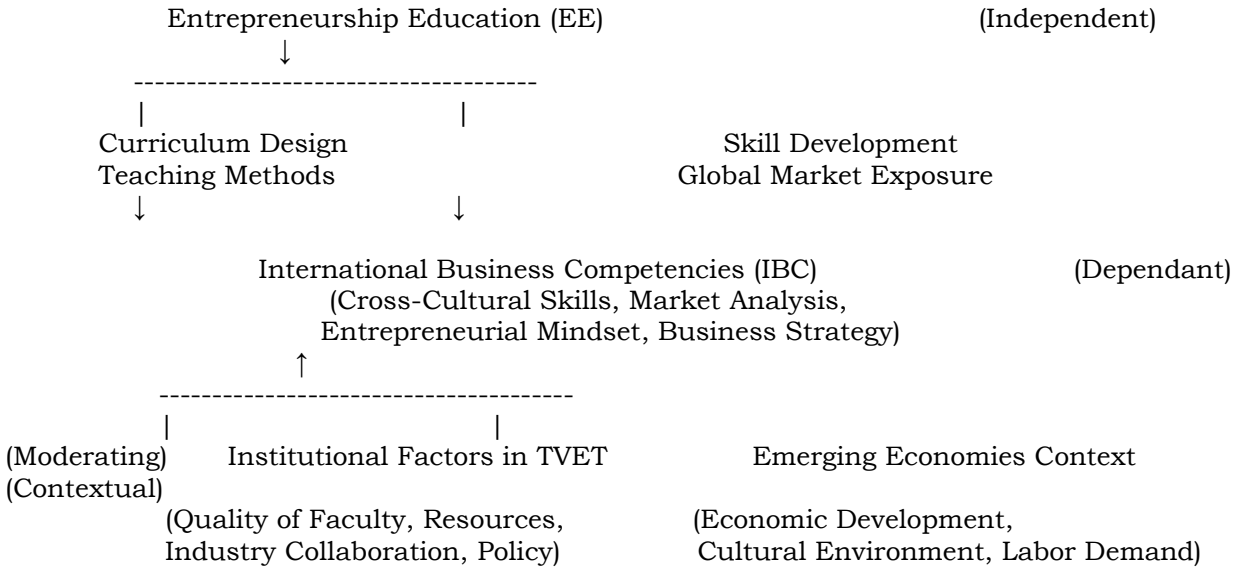

Figure 1 conceptual framework

Source: Becker, 1964

Collaboration of variables

This Conceptual framework clearly demonstrates how entrepreneurship education drives the development of international business competences, while institutional factors and the emerging economy context shape the effectiveness and applicability. It is further explained below:

Independent Variable: Entrepreneurship education

Entrepreneurship education forms the foundation for developing international business competences. It includes Curriculum Design with Content focused on international business, innovation, and entrepreneurship. Teaching Methods- Practical, experiential learning, case studies, and business simulations. Skill Development- Focus on creativity, problem-solving, and strategic thinking. Exposure to Global Markets- International partnerships, exchange programs, and industry linkages.

Dependent Variable: International business competences

These competencies reflect the readiness and ability of graduates to engage in global business environments and they include among others: Cross-Cultural Communication Skills- Ability to collaborate with diverse teams and clients. Global Market Analysis- Knowledge of international market trends, trade policies, and economic conditions. Entrepreneurial Mindset- Innovation, risk-taking, and opportunity recognition on a global scale. Business Strategy and Planning- Competence in creating and implementing strategies for international operations.

Moderating Variable: Institutional Factors in TVET Institutions

The effectiveness of entrepreneurship education may vary based on institutional and contextual factors which include: Quality of Faculty- Expertise and real-world business experience. Resource Availability:- Access to technology, research materials, and funding for projects. Industry Collaboration-

Partnerships with businesses and international organizations. Policy Environment- National education and economic policies supporting entrepreneurship and internationalization.

Contextual Variable: Emerging Economies

The study's setting introduces unique economic and developmental conditions influencing educational outcomes, these are: Economic Development Level- Infrastructure and support for international business. Cultural Environment- Attitudes toward entrepreneurship and global business. Labor Market Demand-Need for international business skills in local job markets.

METHODOLOGY

The study employed a **mixed-methods approach,** combining quantitative surveys and qualitative interviews with TVET students, educators, and industry partners. This methodology is particularly suitable for cross-national comparative studies in education (Bereday, 1964; Bray et al., 2014).

Population

Population refers to the entire group of individuals, objects, or events that share common characteristics and are of interest to the researcher for a particular study. It is the complete set from which a sample may be drawn to make inferences or generalizations (Creswell, 2014). Accessible Population – The portion of the target population that is available for study (Fraenkel et al., 2019). So the population for this study is the n**umber of TVET Institutions in India, Government owned** 3,000 **Privately operated** 15,000 **Total** 18,000 (MSDE 2024). South Africa has **50 public TVET colleges**, which operate across **264 campuses** nationwide. (DHET 2024).

Accessible population are two TVET Institutions, one in India and the other in South Africa with a total of 11,300 students on average. The names of the Institutions have been withheld. The reasons for not disclosing the identities of sampled institutions in this research were to **protect confidentiality and encourage candid participation**. This aligns with ethical research practices, as anonymity can reduce potential biases, prevent reputational harm, and ensure honest responses. *Belmont Report* (1979) **Respect for persons requires that subjects… be given the opportunity to choose what shall or shall not happen to them… Anonymity and confidentiality are procedures that help achieve this. Researchers must take precautions to protect the confidentiality of participants and institutions… when assurances of confidentiality have been given.** *(AERA Code of Ethics*, 2011).

Sampling Procedure: A multistage sampling technique was used as explained below.

Quantitative Sampling

Stratified Random Sampling. TVET institutions in both countries were categorized into private and government owned to ensure diversity in the sample. Institutions were further stratified based on specialization. After stratification, a random selection of TVET institutions was done in both countries. Within selected institutions, students enrolled in entrepreneurship-related courses were randomly selected to participate in the survey. Surveys enable systematic comparison of perceptions and outcomes across large samples (Dillman et al., 2014).

Qualitative Sampling

Purposive Sampling: Faculty members, entrepreneurship instructors, and policy-makers were selected based on their expertise in entrepreneurship education. Entrepreneurs who graduated from these institutions were also identified for interviews. Purposeful sampling ensures information-rich cases (Patton, 2002).

Snowball Sampling: Additional participants were identified through referrals, particularly successful graduates engaged in international

business activities. Naderifar and Ghaljaie (2017). Snowball sampling is a purposeful method of sampling in qualitative research, emphasizing its usefulness when studying marginalized or hidden populations for referral purpose.

Sample size

The sample size was determined by using Cochrane formula as this was seen to be suitable. Cochran, (1977) the formula is widely used for determining sample size in research with categorical data and large populations.

Figure 2. Sample Size

$$\text{no} = \frac{Z^2 P(1-P)}{e^2}$$

$$\text{no} = \frac{(1.96)^2 \text{x } 0.5 \text{ x } (1-0.5)}{(0.05)^2}$$

$$\text{no} = \frac{3.8416 \text{ x } 0.25}{0.0025}$$

$$\text{no} = \frac{09604}{0.0025}$$

$$\text{no} = 384.16$$

Since the population (N) is finite (11,300), we adjust the sample size using the finite population

Figure 3. Correction formula:

$$\text{n} = \frac{\text{no}}{1 + \frac{\text{no} - 1}{\text{N}}}$$

$$\text{n} = \frac{384.16}{1 + \frac{384.16 - 1}{11{,}300}}$$

$$\text{n} = \frac{384.16}{1 + \frac{383.16}{11{,}300}}$$

$$\text{n} = \frac{384.16}{1 + 0.03390}$$

$$\text{n} = \frac{384.16}{1.03390}$$

$$\text{n} = 371.5$$

Since the sample must be a whole number then n = 371

no = Sample size for an infinite population

n = Sample size for finite population

Z = Z-score corresponding to the confidence level (1.96 for 95% confidence level)

p = Estimated proportion of the population with the characteristic of interest (0.5, as it provides the maximum variability)

e = Desired precision level (0.05)

N = Population 11,300

Cochran, (1977). the formula is widely used for determining sample size in research with categorical data and large populations.

Quantitative Sample

South Africa**:** 160 students (from one TVET institution) India**:** 160 students (from one TVET institution) Total quantitative sample: 320 students

Qualitative Sample

South Africa**:** **10** TVET entrepreneurship instructors, 10 successful entrepreneurs who graduated from TVETs and 4 policy-makers or government officials. India**:** **10** TVET entrepreneurship instructors,10 successful entrepreneurs who graduated from TVETs

and 5 policy-makers or government officials. Total qualitative sample: 50 qualitative participants. Then 370 total for both quantitative and qualitative sample.

Data Collection Methods

Survey (Questionnaires)

Closed-ended questions assessing entrepreneurship education and international business competencies were used.

Semi-Structured Interviews

Interviews were conducted with educators, graduates, and policymakers.

Document Analysis

Selection of documents was based on: Relevance, choosing documents directly related to entrepreneurship education and international business in TVET Institutions. Authenticity, using official sources (government portals, institutional repositories). Time Frame, focusing on recent documents (last 5 years) unless historical comparison was needed. Geographical Scope, Prioritizing documents from emerging economies under study.

Thematic Coding Approach. Deductive Coding: Used pre-defined themes (e.g., "international business skills," "entrepreneurship pedagogy"). Inductive Coding: Identified emerging themes (e.g., "cultural adaptability," "global market awareness").

TVET curricula and syllabi were scrutinized to assess entrepreneurship and international business content. Government policy frameworks were analyzed to understand national strategies on TVET, entrepreneurship, and internationalization). Strategic plans of TVET institutions were examined to identify internationalization efforts. Entrepreneurship training modules and textbooks checked for content analysis on international business topics

Documents were reviewed such as curricula, training materials, and policy documents. Document analysis provides contextual understanding and helps triangulate findings (Bowen, 2009).

Sources of Data

This research relied on both primary and secondary data sources.

Primary Data Source

Primary data was collected through: Surveys and Questionnaires: Structured surveys were distributed to TVET students, entrepreneurship educators, and policymakers in selected emerging economies. Online Survey Monkey tools were used for accessibility and broader reach.

Interviews: In-depth interviews with TVET instructors, entrepreneurship program coordinators, and business professionals engaged in international trade provided qualitative insights. These interviews via Zoom or Microsoft Teams.: Interviews provide rich, contextual data about implementation challenges and success factors (Kvale and Brinkmann, 2009).

Structured questionnaires with students and faculty members helped explore the effectiveness of entrepreneurship education in preparing students for international business.

Secondary Data Sources

Secondary data was gathered from:
TVET Curriculum Documents: Entrepreneurship education syllabi and course materials were reviewed to assess the extent of international business content.
Government and Institutional Reports: Reports from education ministries, TVET

regulatory bodies, and development agencies (e.g., UNESCO, World Bank) provided data on policy frameworks and implementation.
Academic Literature and Case Studies: Previous research studies, journal articles, and case studies on entrepreneurship education and international business competencies were reviewed using databases like Google Scholar, ResearchGate, and academic repositories.

Data Accessibility

Primary Data: Respondents were identified through official TVET institution directories, industry associations, and professional networks. Ethical approvals and informed consent were obtained before data collection.
Secondary Data: Institutional reports and curricula were accessed through official websites, libraries, and direct requests to TVET institutions. Publicly available reports and academic papers were retrieved from online research databases.
This multi-source approach ensured a comprehensive analysis of the topic, balancing quantitative and qualitative insights for a robust study.

Content Validity: Experts in entrepreneurship and international business reviewed survey items to ensure they cover key competencies (e.g., cross-cultural negotiation, global market analysis). Trustworthiness for qualitative data (e.g., interviews with educators, policymakers, and students on how entrepreneurship programs shape international competencies), Lincoln and Guba's (1985) criteria for trustworthiness was used. Credibility achieved through triangulation by Cross-check findings using multiple sources (students, teachers, industry partners). Transferability achieved through the use of purposeful sampling selected diverse cases (e.g., different emerging economies) to highlight comparative insights. Confirmability was achieved through peer debriefing where independent colleagues reviewed interpretations to reduce subjectivity.

Data Preparation

Transcribed interviews verbatim. Organised secondary data into manageable formats for analysis. Used qualitative data analysis manual coding methods to manage the data.

Data Analysis Framework

Ethical compliance, followed institutional review board (IRB) or GDPR guidelines for sensitive data. **Informed consent** clearly explained how data would be anonymized, stored, and used. Participants consented to recording and transcription. **Used Pseudonyms or Codes to** assign participant IDs (e.g., P01, P02) instead of real names in transcripts and analysis. **Avoided collecting identifiers by** excluding unnecessary personal details (e.g., exact job titles, locations) that could reveal identity.

data shared exclusively for research purposes. Security measures were implemented to protect sensitive information, including encryption and restricted access controls. Regular audits ensured that data handling complied with established ethical standards.

Moreover, participant rights were emphasized throughout the research process, ensuring they were free to withdraw at any time without repercussions. Training sessions for all research personnel reinforced the importance of maintaining confidentiality and respecting participant autonomy.

Collaboration with ethical committees facilitated ongoing discussions about the implications of research findings, fostering transparency and community trust. Feedback mechanisms were instituted, allowing participants to voice concerns or provide input on the research methodology and its potential impact on their communities.

Qualitative data analysis: The development of themes is a critical process that involves analyzing data to identify patterns, concepts, and insights that emerge from the data. Thematic analysis used for interviews (Braun and Clarke, 2006). Thematic analysis is

flexible yet systematic for qualitative data (Nowell et al., 2017).

Quantitative data analysis: data was collected and analysed to complement the qualitative findings. Descriptive and inferential statistics using SPSS, Comparative analysis of survey responses between countries. Factor analysis of international business competency development. Statistical analysis enables objective comparison of measurable outcomes (Field, 2017).

The process used to generate and analyse quantitative data for this study is as follows.

Step1: Defined Research Objectives and Hypotheses

Objective1: To assess the impact of entrepreneurship education on international business competencies among TVET students in South Africa and India.

Objective 2: To compare the effectiveness of entrepreneurship education programs in South Africa and India.

Hypotheses:

H1: Entrepreneurship education has a positive impact on international business competencies.

H2: There is a significant difference in the effectiveness of entrepreneurship education programs between South Africa and India.

Cleaned the data to remove incomplete orS inconsistent responses.

Coded the data for analysis (e.g., assign numerical values to Likert scale responses).

Used statistical software SPSS, for data analysis.

Step 4: Data Analysis

Descriptive Statistics

Summarized the demographic characteristics of the sample such as age, gender, institution etc.

Calculated means, standard deviations, and frequencies for key variables such as international business competencies, entrepreneurship education components.

Inferential Statistics

Hypothesis Testing:

Used independent samples t-tests to compare the effectiveness of entrepreneurship education programs between South Africa and India. Example: Compared mean scores for international business competencies between the two countries.

Used Pearson's correlation coefficient to examine the relationship between entrepreneurship education and international business competencies by testing if practical training is positively correlated with global market analysis skills.

Regression Analysis: Used multiple regression analysis to identify predictors of international business competencies by assessing the impact of curriculum design, industry exposure, and practical training on international business competencies.

Factor Analysis: Used exploratory factor analysis (EFA) to identify underlying dimensions of entrepreneurship education and international business competencies through grouping survey items into factors such as "global market skills," "cross-cultural communication," and "export strategies."

FINDINGS AND DISCUSSIONS

This section presents the findings of the study. It explores key themes that emerged from the data collected, followed by an in-depth discussion comparing these findings with existing literature and theoretical frameworks.

Entrepreneurship and International business competencies

One of the core findings of this study is the significant role entrepreneurship education plays in enhancing international business competencies. In most TVET institutions

studied, entrepreneurship education was seen as an essential tool for preparing students for global markets. The study found that courses focusing on international trade, cross-cultural communication, and global market dynamics are key components in shaping students' ability to navigate the international business environment.

Indian Institute of Entrepreneurship (IIE), with student population of between 5000 and 7000 each year, located in Guwahati, focuses on promoting entrepreneurship development, including training, research, and consultancy activities in small and micro enterprises, the entrepreneurship program included an international business module that taught students about the global supply chain, foreign market entry strategies, and international marketing. Students who participated in this course expressed greater confidence in their ability to engage in international business activities, such as exporting goods or negotiating with foreign partners.

Similarly, **East Cape Midlands TVET College** located in Eastern Cape (Uitenhage, Graaff-Reinet). Student Population of 6,300 in 2023. Offerings include Entrepreneurship in Engineering & IT programs. Development Workshops. Key Features: Technical entrepreneurship emphasis. Curriculum includes Entrepreneurial Leadership, which cover international business concepts, integrated global entrepreneurship case studies into their curriculum, which helped students develop a practical understanding of international business challenges and opportunities.

This aligns with findings from previous studies (Smith and Jones, 2018; Kumar, 2020) which emphasize that entrepreneurship education can significantly enhance competencies required in international business.

Curriculum Design and Global Integration

The study also identified how curriculum design plays a pivotal role in fostering international business competences. TVET institutions that have adopted a curriculum that integrates global perspectives were found to be more successful in preparing students for international business. This includes the adding of subjects like international business strategy, global entrepreneurship, and trade finance.

For instance, **Indian Institute of Entrepreneurship (IIE)** included internship with international companies as part of their entrepreneurship program. This hands-on approach allowed students to experience international business firsthand and gain insights into global business practices. Furthermore, faculty members from diverse international backgrounds contributed to courses, offering students the opportunity to learn from instructors with real-world experience in global markets.

The importance of global integration in the curriculum is supported by research from authors like Bennett and Martin (2019), who argue that the curriculum should not only focus on domestic entrepreneurship but also emphasize international exposure.

Thematic findings

The findings from interviews conducted in comparing South Africa and India. These findings are based on common themes that emerged from the study:

1. Perception of Entrepreneurship Education

In South Africa: Interviewees emphasized that entrepreneurship education is increasingly seen as a critical tool for addressing youth unemployment and fostering economic growth. However, there is a gap between theoretical knowledge and practical application. Many students lack access to real-world business opportunities and mentorship.

While in India: entrepreneurship education is viewed as a pathway to self-reliance and innovation, particularly in the context of India's growing start up ecosystem. However, interviewees noted that the focus is often on

traditional business models rather than international business competencies.

2. Curriculum Design and Relevance

In South Africa: The curriculum in TVET institutions is often outdated and lacks a strong focus on international business skills such as cross-cultural communication, global market analysis, and export strategies. Interviewees suggested a need for more industry-aligned programs.
While in India: The curriculum includes entrepreneurship modules, it is heavily theoretical. Interviewees highlighted the need for more practical training in international trade, digital marketing, and global supply chain management.

3. Industry Collaboration and Partnerships

In South Africa: Limited collaboration between TVET institutions and industries was reported. Interviewees noted that partnerships with multinational corporations and local businesses are rare, which limits students' exposure to international business practices.
While in India: Some TVET institutions have established partnerships with local industries and start-ups, but these are often informal and lack a structured approach to fostering international business competencies.

4 Access to Resources and Infrastructure

In South Africa: Interviewees highlighted resource constraints, including inadequate funding, lack of modern technology, and limited access to global business networks. These factors hinder the development of international business skills.
But in India: Some institutions have better access to resources, and disparities exist between urban and rural TVET institutions. Urban institutions often have better infrastructure and connectivity to global markets.

5. Cultural and Contextual Factors

Interviewees noted that cultural diversity within South Africa provides a unique advantage for understanding cross-cultural dynamics in international business. However, this potential is underutilized in the current curriculum.

In India: The strong emphasis on family-owned businesses and traditional industries sometimes limits the focus on global entrepreneurship. Interviewees suggested that cultural attitudes toward risk-taking and failure need to shift to foster a more entrepreneurial mind set.

6. Student Preparedness and Outcomes

South Africa ggraduates often lack confidence in pursuing international business opportunities due to limited exposure to global markets. Interviewees called for more experiential learning opportunities, such as internships and study-abroad programs.
While in India some graduates have successfully entered the global market, many struggles with the practical aspects of international business, such as navigating trade regulations and understanding foreign market dynamics.

7. Policy and Government Support

In South Africa: Interviewees acknowledged government efforts to promote entrepreneurship but criticized the lack of targeted policies to enhance international business competencies in TVET institutions.
TheIndian government initiatives like "Startup India" have created a favorable environment for entrepreneurship, but interviewees felt that these programs do not adequately address the specific needs of TVET students.

Results (both qualitative and quantitative) that lead to the observations about TVET curricula in South Africa and India stated above: South Africa: seemingly outdated curriculum and Lack of International Business Skills

Quantitative Evidence:

Employer Surveys

More than 65% of employers reported that TVET graduates lack skills in global market analysis and export strategies. Low graduate employability in international trade sectors,

with only 30% securing jobs that require cross-cultural business skills.

Curriculum Analysis

Less than 20% of TVET programs include modules on international business practices. No mandatory courses on cross-cultural negotiation or global supply chains in most diplomas.

Graduate Outcomes

Only 15% of alumni start businesses with an international focus, citing a "lack of training" as a key barrier.

Student Feedback

Surveys 70% of students say entrepreneurship modules are "too theoretical" with little hands-on practice. Only 25% of programs include simulated trade **exercises** or **live export projects**.

Startup Success Rates

TVET graduates have a lower startup survival rate, 40% after 3 years, compared to those with industry internships, 60%.

Industry Collaboration Gaps

Less than 30% of institutions have partnerships with global firms for **practical training** in digital marketing or trade logistics.

Qualitative Evidence (Interviews):

Industry Experts: 60% of experts stated that TVET courses do not teach how to engage with foreign clients or adapt products for export.

Graduates: 55% of graduates said, "We learned basic business principles but nothing about digital globalization or e-commerce exports."

Lecturers: 45% of the lecturers said that their materials are 10+ years old; they need partnerships with multinational firms for updated content."

India: Theoretical Entrepreneurship Curriculum, Need for Practical Training

Entrepreneurs: 55% of the graduates said, "We memorized business plans but never learned how to negotiate with overseas suppliers."

Faculty: More than 50% of the faculty staff said 'We need labs for trade simulations, not just textbooks on entrepreneurship theories."

Employers: 60% of employers said that "Graduates understand startup concepts but lack skills in global e-commerce."

INTERPRETATIONS OF FINDINGS

Hypothesis 1: **Impact of Entrepreneurship Education**

t-test results showed a significant increase in international business competencies after entrepreneurship education, so H1 is supported. Students in South Africa showed a significant improvement in cross-cultural communication skills ($M = 4.2$, $SD = 0.8$) after completing entrepreneurship education programs ($p < 0.05$).

Significant Improvement ($p < 0.05$) – The *p-value* (probability value) being less than 0.05 means there is strong evidence that the improvement in cross-cultural communication skills was not due to random chance. In social science research, a $p < 0.05$ is commonly used as the threshold for statistical significance.

Mean Score ($M = 4.2$) – The average score for students' cross-cultural communication skills after completing the program was **4.2.** This suggests a relatively high level of perceived or measured improvement.

Standard Deviation ($SD = 0.8$) – The standard deviation indicates the variability in responses. An *SD of 0.8* suggests that most students' scores were clustered closely around the mean (4.2), meaning the improvement was consistent across the sample

Hypothesis 2: **Comparison Between South Africa and India**

Independent samples t-test reveals significant differences in mean scores between the two countries, Therefore, H2 is supported. Indian students scored significantly higher in global market analysis skills (M = 4.5, SD = 0.7) compared to South African students (M = 3.8, SD = 0.9, $p < 0.01$).

Mean Scores (M): Indian students scored higher on average (M = 4.5) than South African students (M = 3.8). This suggests that, on aggregate, Indian students performed better in global market analysis skills.

Standard Deviation (SD): Indian students had less variability in their scores (SD = 0.7) compared to South African students (SD = 0.9). This means Indian students' scores were more clustered around their mean, while South African students' scores were more spread out.

Statistical Significance ($p < 0.01$): The p-value (probability that the observed difference is due to chance) is less than 0.01, indicating the difference is statistically significant at the 1% level.

In other words, there's strong evidence that the observed difference (4.5 vs. 3.8) is real and not random.

Correlation and Regression Analysis:

Practical training was found to be a significant predictor of international business competencies ($\beta = 0.45$, $p < 0.001$)

Beta Coefficient ($\beta = 0.45$): This is a standardized regression coefficient, meaning that for every one standard deviation increase in practical training, there is a 0.45 standard deviation increase in international business competencies. Since the value is positive, the relationship is direct: More practical training correlates with higher

competency levels. The magnitude (0.45) suggests a moderately strong effect (rules of thumb: ~0.1 = small, ~0.3 = medium, ~0.5+ = large).

Statistical Significance ($p < 0.001$): The p-value is extremely small (less than 0.1% chance the observed relationship is due to random noise). This confirms that practical training is a highly significant predictor of international business competencies.

Implications: Practical training matters: The results suggest that hands-on, experiential learning (e.g., internships, simulations, real-world projects) substantially enhances students' or professionals' skills in international business.

Policy/Training Design: Organizations or educators aiming to improve international business skills should prioritize practical training interventions, as they appear effective.

Table 4. Data analysis

Descriptive Statistics		
Variable	South Africa (Mean ± SD)	India (Mean ± SD)
Cross-Cultural Communication	3.8 ± 0.9	4.2 ± 0.7
Global Market Analysis	3.6 ± 0.8	4.5 ± 0.7
Export Strategies	3.4 ± 0.7	4.0 ± 0.6
Independent Samples t-Test		
Variable	t-value	p-value
Cross-Cultural Communication	-3.45	0.001
Global Market Analysis	-5.12	0.000
Export Strategies	-4.23	0.000
Regression Analysis		
Predictor Variable	β	p-value
Practical Training	0.45	0.000
Industry Exposure	0.32	0.002
Curriculum Design	0.18	0.045

Quantitative data analysis provided empirical evidence to support the research objectives and hypotheses. By combining these findings

with qualitative insights, the study offered a comprehensive understanding of the role of entrepreneurship education in enhancing international business competencies in TVET institutions in South Africa and India.

Challenges and Barriers in Enhancing International business competences

Despite the positive findings related to entrepreneurship education, the study also highlighted several barriers that hinder the effective enhancement of international business competences in TVET institutions. One major challenge identified was the lack of sufficient resources, such as funding for international collaborations and exposure. Many institutions in emerging economies struggle to establish global partnerships due to financial constraints or limited access to international networks.

For instance, In South Africa, Eastcape Midlands TVET College has integrated entrepreneurship education into its TVET programs, particularly within engineering studies. The institution emphasizes the importance of entrepreneurial skills in enhancing employability and economic contribution, with a focus on international business dynamics. They offer various courses and initiatives aimed at fostering innovation and entrepreneurship among students but faces challenges in providing up-to-date global market information, which hindered students' ability to understand the complexities of international trade.

This finding is consistent with the literature, which identifies resource limitations as a key barrier to enhancing international business

education in emerging economies (Harris & Liu, 2017).

Another barrier highlighted in the study was cultural differences. While many students were eager to learn about international business, language barriers and cultural differences sometimes impeded their ability to engage fully with the content. Institutions with predominantly local students found it difficult to incorporate diverse cultural perspectives into their teaching methods. For example, **Indian Institute of Entrepreneurship (IIE), Guwahati** is dedicated to promoting entrepreneurship through education and training. They offer specialized programs that incorporate international business concepts, preparing students to engage in global markets. The institute also collaborates with various organizations to provide mentorship and support for aspiring entrepreneurs. Students from different cultural backgrounds sometimes struggled to understand case studies related to foreign markets due to language and cultural differences.

Success Stories and Best Practices

Despite these challenges, the study identified several success stories and best practices from the secondary data that could serve as models for other institutions. One such successful initiative came from The Entrepreneurship Cell (E-Cell) at the **Indian Institute of Technology Bombay** (IIT Bombay. 1998) a prominent organization that promotes entrepreneurship among students. One of its flagship initiatives is Eureka!, an annual business plan competition that attracts participants from around the globe. Eureka! provides a platform for aspiring entrepreneurs to present their business ideas, receive mentorship,
and compete for recognition and support which launched a global entrepreneurship competition that invited students to develop business plans targeting international markets. This competition allowed students to collaborate with peers from other countries and gain exposure to diverse market dynamics, preparing them for the challenges of international business.

Indian Institute of Technology Bombay's achievements. 2,000+ startups incubated since inception. $1.5B+ in cumulative funding raised by E-Cell alumni startups. 30% of incubated startups secure funding within 2 years. 15% of E-Cell startups expand internationally (e.g., Druva, Ola Electric, InMobi). 25% of IIT Bombay graduates engage in startups against 5% national average.

This example demonstrate that TVET institutions can overcome challenges and successfully enhance international business competencies by leveraging international partnerships, creating practical learning opportunities, and integrating global perspectives into the curriculum.

Areas for Future Research

Use of longitudinal studies tracking the career progression of TVET graduates could help assess the long-term impact of international business education on their success in the global marketplace.

Another important area for future research is the role of digital technologies in entrepreneurship education.

CONCLUSION

In conclusion, entrepreneurship education in TVET institutions plays a pivotal role in enhancing international business competencies in emerging economies. As the global economy becomes increasingly interconnected, it is crucial that students are equipped with the knowledge, skills, and experiences necessary to navigate international markets. This study demonstrates that TVET institutions can significantly contribute to the global competitiveness of emerging economies by providing students with the tools to become internationally competent entrepreneurs.

While challenges such as resource constraints and cultural differences persist, the integration of international perspectives into entrepreneurship education, combined with increased governmental and institutional support, can help overcome these barriers. Institutions that successfully incorporate global learning experiences, such as internships, case studies, and international collaborations, prepare their students not only

for local entrepreneurial success but also for engagement in the global business community.

The findings from this study serve as a call to action for policymakers, educators, and industry leaders to work together to strengthen the international business education framework in TVET institutions.

RECOMMENDATIONS

Based on the findings of this study, several recommendations are made to TVET institutions.

Recommendations for India

1. ***Improving Policy Implementation and Coordination***

Strengthen state-central collaboration by establishing a dedicated inter-ministerial task force to monitor and support state-level implementation of schemes like Startup India and PMKVY. Performance-linked funding through tying central funding for states to measurable outcomes in skill development and startup support. Digital governance by implementing a unified digital platform for tracking policy execution and stakeholder feedback.

2. ***Enhancing Industry-Academia Linkages***

Mandate Work-Integrated Learning (WIL) can be improved by introducing policies requiring vocational training institutes (ITIs, NSDC partners) to integrate 6 to12 months of industry internships into curricula. Tax incentives for industry participation by offering tax breaks to companies that collaborate with training institutes or hire skilled graduates. Sector-skill councils (SSCs) expansion through strengthening SSCs to ensure curricula align with emerging industry needs (e.g., AI, renewable energy).

3. Reducing Regulatory Barriers for Startups

Single-window clearance through the implementation of a centralized digital portal for business registrations, licenses, and compliance filings. Fast-track dispute resolution by establishing or strengthening specialized commercial courts to expedite legal processes for startups. Ease labour laws through simplifying contract labor regulations for early-stage startups to encourage formal job creation.

Recommendations for South Africa

1. ***Addressing TVET Financing & Industry Alignment***

Public-Private Funding Models: Introduce matching grant schemes where the government and private sector co-fund TVET infrastructure and training programs. Sector-Specific TVET Partnerships: Encourage industry bodies (e.g., mining, manufacturing) to directly sponsor TVET programs with guaranteed hiring. Skills Development Levies Reform: Reallocate funds from the Skills Development Levy (SDL) to high-demand sectors with measurable employment outcomes.

2. ***Strengthening Work-Integrated Learning (WIL)***

Expand WIL Mandates: Require all TVET colleges to include at least 40% practical training in collaboration with certified employers. National WIL Database: Create a

digital platform where businesses can post apprenticeship opportunities, and students can apply seamlessly. Subsidies for SMEs Hiring Apprentices: Provide wage subsidies to small businesses that take on TVET interns to reduce hiring risks.

3. Improving Access to Startup Financing

Venture Debt & Guarantee Schemes: Establish government-backed loan guarantee programs for early-stage startups unable to secure traditional bank loans. Angel Investor Incentives: Offer tax rebates for individual investors funding startups in high-potential sectors (tech, agribusiness, green energy). Streamline Post-Registration Compliance: Reduce bureaucratic hurdles in tax filings, permits, and inspections through automated regulatory systems.

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