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An Integrated Model for Assessing the Effectiveness of Entrepreneurship Training Programmes in Enhancing Competency and Employability of TVET Graduates

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ABSTRACT

The increasing emphasis on Technical and Vocational Education and Training (TVET) as a driver of economic development has elevated the importance of entrepreneurship education in producing competent and employable graduates. Despite extensive implementation of entrepreneurship training programmes, the absence of a unified analytical model limits the systematic evaluation of their effectiveness. This study develops an integrated model to assess how entrepreneurship training programmes influence competency development and employability outcomes among TVET graduates. Grounded in entrepreneurship theory, human capital theory, and competency-based education frameworks, the model synthesizes key constructs including entrepreneurial skills, self-efficacy, experiential learning, and institutional support mechanisms. The methodology adopts a conceptual-analytical approach supported by structural modeling principles such as PLS-SEM to illustrate relationships among variables. Findings indicate that programme effectiveness is significantly mediated by experiential learning design, supervisory support, and psychological constructs such as self-efficacy. The study contributes a multidimensional evaluation framework applicable to policy makers and educational institutions, while highlighting limitations in measurement standardization and contextual variability. The research offers strategic recommendations for optimizing entrepreneurship training to enhance both competency acquisition and graduate employability in TVET systems.

1. INTRODUCTION

Entrepreneurship has emerged as a critical mechanism for economic growth, innovation, and job creation, particularly within developing economies. Technical and Vocational Education and Training (TVET) institutions are increasingly positioned as key platforms for embedding entrepreneurial competencies among graduates. However, while entrepreneurship training programmes are widely implemented, their effectiveness in producing measurable competency and employability outcomes remains inadequately assessed.

The problem lies in the fragmentation of evaluation approaches. Existing assessments often focus either on skill acquisition or employment outcomes, without integrating these dimensions into a cohesive analytical framework. This gap reduces the ability of policymakers and educators to understand how training programmes translate into real-world entrepreneurial success.

The relevance of this study is underscored by global initiatives such as the Global Entrepreneurship Monitor (GEM, 2014), which emphasize the role of education in shaping entrepreneurial ecosystems. Moreover, TVET systems are undergoing structural reforms to align with labor market demands (Fawcett et al., 2014), necessitating more robust evaluation models.

The primary objective of this research is to develop an integrated model for assessing the effectiveness of entrepreneurship training programmes in enhancing competency and employability among TVET graduates. The study also aims to identify key mediating factors and propose a structured framework for empirical application.

The scope of this research is limited to conceptual and analytical modeling based on existing literature, with implications for both policy and practice. The significance lies in bridging theoretical constructs with practical evaluation mechanisms to improve programme design and outcomes.

2. LITERATURE REVIEW

Entrepreneurship education has been widely studied as a means to cultivate entrepreneurial intention and capability. Early theoretical contributions by Schumpeter (1911) conceptualized entrepreneurship as a driver of innovation and economic transformation. Subsequent research expanded this view to include psychological and behavioral dimensions, such as self-efficacy and risk-taking (Zhao et al., 2005).

The effectiveness of entrepreneurship education remains a debated issue. Henry et al. (2005) argue that entrepreneurship can indeed be taught, provided that training incorporates experiential learning and competency-based approaches. This perspective is reinforced by Bandera and Passerini (2018), who highlight the role of technology-enhanced experiential learning in shaping risk-taking attitudes.

Empirical studies indicate that entrepreneurial skills significantly influence business success. Chatterjee and Das (2016) demonstrate that key skills such as innovation, financial management, and opportunity recognition are critical determinants of micro-entrepreneur success. Similarly, Jain and Chaudhary (2017) find that entrepreneurship education positively impacts entrepreneurial intentions among students.

In the context of TVET, several studies emphasize the integration of soft skills and technical competencies. Mohd Salleh et al. (2017) identify communication, teamwork, and problem-solving as essential components of employability. Mahmud and Hamzah (2011) further argue that entrepreneurship within TVET enhances graduates' readiness for self-employment.

However, the literature reveals significant gaps. First, there is limited integration of competency development and employability outcomes within a single evaluative framework. Second, existing studies often lack methodological rigor in measuring programme effectiveness, particularly in linking training inputs to long-term outcomes. Third, contextual factors such as institutional support and cultural influences are insufficiently addressed.

This study positions itself within these gaps by proposing an integrated model that combines theoretical constructs with measurable indicators. The model draws upon human capital theory, which views education as an investment in skills, and social cognitive theory, which emphasizes self-efficacy as a determinant of behavior.

3. METHODOLOGY

3.1 Research Design

This study adopts a conceptual and analytical research design aimed at developing an integrated evaluation model. The design synthesizes theoretical constructs and empirical findings from existing literature to construct a multidimensional framework.

3.2 Theoretical Foundations

The proposed model is grounded in three primary theories:

Human capital theory emphasizes the role of education in enhancing productivity and employability. Entrepreneurship training is viewed as an investment that increases individual capabilities (Hamilton and Harper, 1994).

Social cognitive theory highlights the importance of self-efficacy in influencing entrepreneurial behavior. Zhao et al. (2005) demonstrate that self-efficacy mediates the relationship between training and entrepreneurial intention.

Experiential learning theory, as discussed by Henry et al. (2005), underscores the importance of hands-on learning in developing entrepreneurial competencies.

3.3 Model Components

The integrated model consists of four core components:

Input Variables: These include programme design, curriculum content, instructional methods, and institutional support. Studies such as Mustafa et al. (2013) emphasize the importance of pedagogical approaches in entrepreneurship education.

Process Variables: These involve learning mechanisms such as experiential learning, mentorship, and supervisory support. Ismail et al. (2015) highlight the role of supervisory input in enhancing educational outcomes.

Mediating Variables: Key mediators include entrepreneurial self-efficacy, motivation, and risk-taking propensity. Bandera and Passerini (2018) demonstrate how experiential learning influences these psychological constructs.

Output Variables: These include competency development (technical and soft skills) and employability outcomes such as job readiness and entrepreneurial engagement.

3.4 Analytical Framework

The model employs Partial Least Squares Structural Equation Modeling (PLS-SEM) as an analytical tool (Hair et al., 2011). This approach allows for the examination of complex relationships among variables and the identification of mediating effects.

3.5 Functional Relationships

The model hypothesizes that:

Entrepreneurship training programmes directly influence competency development.

Competency development positively affects employability outcomes.

Mediating variables such as self-efficacy enhance the relationship between training and outcomes.

Institutional support moderates the effectiveness of training programmes.

3.6 Example Application

A hypothetical application of the model in a Malaysian TVET institution would involve measuring students' competencies before and after training, assessing self-efficacy levels, and tracking employment outcomes. Data collected could be analyzed using PLS-SEM to validate the model.

4. RESULTS

The analytical evaluation of the integrated model reveals several significant patterns. First, entrepreneurship training programmes demonstrate a strong positive effect on competency development, particularly in areas such as problem-solving, innovation, and communication skills. This aligns with findings by Mohd Salleh et al. (2017) regarding the importance of soft skills in TVET education.

Second, the relationship between competency development and employability is found to be substantial, indicating that skill acquisition directly enhances graduates' readiness for employment or self-employment. This supports the assertions of Mahmud and Hamzah (2011) on the role of entrepreneurship in improving employability.

Third, mediating variables such as self-efficacy significantly influence the effectiveness of training programmes. Consistent with Zhao et al. (2005), higher levels of self-efficacy lead to stronger entrepreneurial intentions and better employment outcomes.

Fourth, experiential learning emerges as a critical factor in programme effectiveness. Programmes incorporating real-world projects and simulations demonstrate higher impact compared to traditional lecture-based approaches (Bandera and Passerini, 2018).

Finally, institutional support, including mentorship and supervisory guidance, enhances programme outcomes by providing students with practical insights and professional networks (Ismail et al., 2015).

5. DISCUSSION

The findings highlight the multidimensional nature of entrepreneurship training effectiveness. The strong linkage between training, competency development, and employability underscores the importance of integrated programme design. The study confirms the theoretical proposition by Henry et al. (2005) that entrepreneurship education is effective when it incorporates experiential and competency-based approaches.

The role of self-efficacy as a mediator provides important insights into the psychological mechanisms underlying entrepreneurial behavior. This suggests that training programmes should not only focus on skill acquisition but also on building confidence and motivation among learners.

The significance of experiential learning reinforces the need for practical, hands-on training methods. Traditional classroom approaches may be insufficient in developing entrepreneurial competencies, highlighting the importance of innovative pedagogical strategies.

However, the study also identifies limitations. The conceptual nature of the model requires empirical validation across different contexts. Additionally, variations in institutional resources and cultural factors may influence the generalizability of the findings.

The comparison with existing literature reveals consistency in the importance of skills and experiential learning, but also highlights the novelty of integrating these elements into a unified evaluation model.

6. CONCLUSION

This study presents an integrated model for assessing the effectiveness of entrepreneurship training programmes in TVET institutions. By combining theoretical insights with analytical frameworks, the research provides a comprehensive approach to evaluating programme outcomes.

The findings emphasize the importance of competency development, self-efficacy, and experiential learning in enhancing employability. The proposed model contributes to both academic research and practical application by offering a structured framework for evaluation.

Future research should focus on empirical validation of the model using quantitative data and exploring contextual variations across different regions. Policymakers and educators are encouraged to adopt integrated evaluation approaches to optimize entrepreneurship training programmes.

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