

Sustainable Social Entrepreneurship Intention Among Malaysian TVET Students: Integrating Entrepreneurial Exposure, Social Media Engagement and Entrepreneurial Traits

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ABSTRACT

The increasing demand for future-ready graduates in the era of digitalisation, sustainability transitions and global economic uncertainty has highlighted the importance of integrating entrepreneurship, sustainability, and innovation within Technical and Vocational Education and Training (TVET). In Malaysia, TVET institutions play a crucial role in developing technically competent graduates who are socially responsible, environmentally conscious and entrepreneurial. However, many TVET graduates continue to face challenges related to employability, innovation readiness, and adaptability in addressing emerging social and environmental issues. Therefore, this study examines the influence of entrepreneurial exposure and social media engagement on sustainable social entrepreneurship intention among Malaysian TVET students, with entrepreneurial traits functioning as mediating variables. This study adopted a quantitative descriptive-correlational research design involving 159 students from Malaysian polytechnics and community colleges selected through stratified random sampling. Data were collected using structured questionnaires and analysed using Statistical Package for the Social Sciences (SPSS) Version 27. Descriptive statistics, Pearson correlation analysis, multiple regression analysis and mediation analysis using the SPSS were employed to examine the proposed relationships among variables. The findings revealed that entrepreneurial exposure and social media engagement significantly influence sustainable social entrepreneurship intention among TVET students. Entrepreneurial traits comprising creativity, opportunity recognition, resilience, and adaptability were also found to significantly mediate the relationship between entrepreneurial exposure, social media engagement, and sustainable social entrepreneurship intention. Among these traits, opportunity recognition demonstrated the strongest influence on entrepreneurial intention. The study supports the integration of the Theory of Planned Behaviour and Social Cognitive Theory in explaining sustainable entrepreneurial intention among TVET students. The findings highlight the importance of developing sustainable TVET ecosystems that integrate entrepreneurship education, social innovation, digital engagement, and environmental sustainability in preparing future-ready graduates for sustainable national development.

Keywords: TVET; Sustainable Social Entrepreneurship; Entrepreneurial Intention; Entrepreneurial Exposure; Social Media Engagement; Entrepreneurial Traits; Sustainability Education

INTRODUCTION

The 21st-century workforce is rapidly evolving under the influence of digital technologies, sustainability transitions, globalization, and changing labour market demands. Employers increasingly seek graduates who possess not only technical expertise but also entrepreneurial creativity, adaptability, digital competencies, and social responsibility (Organisation for Economic Co-operation and Development [OECD], 2022). In this context, Technical and Vocational Education and Training (TVET) institutions play an important role in developing industry-ready graduates equipped with technical and problem-solving capabilities (UNESCO-UNEVOC, 2020).

In Malaysia, TVET has been identified as a strategic driver for economic growth and sustainable development under national agendas such as the Twelfth Malaysia Plan (2021–2025), Shared Prosperity Vision 2030, and National Entrepreneurship Policy 2030. These policies emphasize the need to strengthen innovation,

entrepreneurship, and sustainable workforce development in order to improve national competitiveness and social well-being (Ministry of Higher Education Malaysia, 2021). Despite ongoing reforms and investment in TVET education, studies indicate that many TVET graduates continue to face employability and adaptability challenges. According to the Khazanah Research Institute (2021), unemployment among TVET graduates declined from 34.5% in 2010 to 12.4% in 2020; however, underemployment and skills mismatch remain significant concerns. Many graduates lack entrepreneurial competencies, innovation readiness, and the ability to respond to emerging social and environmental challenges.

In addition to economic concerns, sustainability and environmental responsibility have become increasingly important within entrepreneurship education. Sustainable social entrepreneurship emphasizes the creation of social and environmental value alongside economic outcomes. Within the TVET context, students possess technical competencies that can be mobilized to address issues such as waste management, renewable energy, sustainable production, recycling innovation, and community-based environmental entrepreneurship. This aligns with Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education), SDG 8 (Decent Work and Economic Growth), SDG 11 (Sustainable Cities and Communities), and SDG 12 (Responsible Consumption and Production).

Social entrepreneurship provides an alternative pathway for addressing employability issues while simultaneously promoting social innovation and environmental sustainability. It combines entrepreneurial innovation with the objective of solving social and environmental problems (Méndez-Picazo et al., 2024). For TVET students trained in technical and vocational disciplines, social entrepreneurship creates opportunities to apply technical knowledge for community benefit while creating employment opportunities for themselves and others. However, existing studies suggest that social entrepreneurship remains insufficiently embedded within Malaysia's TVET ecosystem (Ali & Abdullah, 2024). Entrepreneurship education in many TVET institutions continues to focus primarily on conventional business creation rather than sustainability-oriented and socially driven enterprise development.

Although entrepreneurial intention has frequently been investigated using cross-sectional survey designs, such designs provide only a snapshot of respondents' perceptions and behavioural intentions at a single point in time. Entrepreneurial intention is inherently dynamic and may evolve following educational exposure, industrial attachment, or participation in entrepreneurial ecosystems. Nevertheless, a cross-sectional design remains appropriate for identifying significant predictors and testing theoretical relationships during the initial stage of model development. The findings therefore provide a valuable baseline for subsequent longitudinal investigations within the Malaysian TVET context.

Therefore, this study aims to develop a Sustainable Social Entrepreneurship Model that explains how entrepreneurial exposure and social media engagement influence sustainable social entrepreneurship intention among Malaysian TVET students. Entrepreneurial traits including creativity, opportunity recognition, resilience, and adaptability are examined as mediating variables. The study integrates the Theory of Planned Behavior (Ajzen, 1991) and Social Cognitive Theory (Bandura, 1986) to provide a stronger theoretical understanding of sustainable entrepreneurial intention formation among TVET students.

LITERATURE REVIEW

Theoretical Integration: TPB and SCT

Theory of Planned Behavior (TPB)

The Theory of Planned Behavior (TPB) developed by Ajzen (1991) explains that individual intention is shaped by three primary determinants namely attitude toward behaviour, subjective norms, and perceived behavioural control. Individuals are more likely to engage in entrepreneurial activities when they possess positive attitudes toward entrepreneurship, perceive social support, and believe in their capability to perform entrepreneurial tasks. Within the context of social entrepreneurship, TPB has been widely applied to explain how moral values, empathy, and social responsibility influence entrepreneurial intention (Yang et al., 2024). Students who perceive social entrepreneurship as meaningful and beneficial to society are more likely to demonstrate stronger

sustainable entrepreneurial intention. In this study, TPB explains how entrepreneurial exposure and social media engagement influence students' attitudes and perceived behavioural control toward sustainable social entrepreneurship.

Social Cognitive Theory (SCT)

Social Cognitive Theory (SCT) proposed by Bandura (1986) complements TPB by emphasizing the role of self-efficacy, environmental influence, and observational learning in shaping behaviour. According to SCT, individuals develop competencies and confidence through interaction with their environment and by observing the experiences of others. Entrepreneurial exposure through training, workshops, business projects, and social media engagement provides students with opportunities to develop entrepreneurial self-efficacy and opportunity recognition skills. Through digital platforms, students are exposed to entrepreneurial role models, community engagement activities, and sustainability-oriented innovations that influence their entrepreneurial mindset. SCT is particularly relevant in explaining how entrepreneurial traits such as creativity, resilience, adaptability, and opportunity recognition are developed through experiential learning and environmental interaction.

Theoretical Framework	Core Construct Contribution to the Model	Integrated Operationalization in This Study
Theory of Planned Behavior (TPB)	Attitude, Subjective Norms, Perceived Behavioral Control	Explains how external enablers shape the internal perceived feasibility, social acceptability, and desirability of starting an eco-venture
Social Cognitive Theory (SCT)	Self-Efficacy, Observational Learning, Environmental Mastery	Traces how structured vocational exposure and social media build internal cognitive traits through peer modeling and hands-on experiences.

Table 1: Theoretical Integration: Theory of Planned Behavior and Social Cognitive Theory

Sustainable Social Entrepreneurship and TVET

Sustainable social entrepreneurship refers to entrepreneurial activities that simultaneously create economic, social, and environmental value (Cohen & Winn, 2007). Unlike traditional entrepreneurship, sustainable social entrepreneurship prioritizes community well-being, environmental sustainability, and long-term social impact.

Within TVET education, sustainable social entrepreneurship is increasingly recognized as an important strategy for preparing students to address contemporary sustainability challenges. TVET students possess technical competencies that can be applied in sustainable innovation areas such as eco-friendly manufacturing, waste management, green technology, sustainable agriculture, recycling innovation, and renewable energy. Malaysia's National Entrepreneurship Policy 2030 and sustainable development agenda encourage educational institutions to integrate social innovation and sustainability principles into entrepreneurship education. However, previous studies indicate that sustainability-oriented entrepreneurial education remains underdeveloped within many TVET institutions (Rofa & Ngah, 2024).

Entrepreneurial Traits as Mediating Variables

Entrepreneurial traits such as creativity, innovation, resilience, adaptability, and opportunity recognition are important determinants of entrepreneurial success (Amabile, 1996; Shane & Venkataraman, 2000). These traits influence students' ability to identify social and environmental problems and transform them into innovative entrepreneurial opportunities. In this study, entrepreneurial traits are conceptualized as mediating variables that explain how entrepreneurial exposure and social media engagement influence sustainable social entrepreneurship intention. Creativity and innovation enable students to develop novel solutions to social and environmental problems, while opportunity recognition allows them to identify unmet community needs. Adaptability and resilience are essential in responding to uncertain economic and environmental conditions.

Role of Social Media Engagement

Social media platforms such as TikTok, Instagram, Facebook, and LinkedIn have become important tools for entrepreneurial communication, collaboration, marketing, and learning (Kaplan & Haenlein, 2010). Social media enables students to access entrepreneurial information, build networks, promote social causes, and observe successful entrepreneurs. For sustainable social entrepreneurship, social media also facilitates environmental awareness campaigns, digital fundraising, crowdfunding, and community-based innovation. Previous studies found that social media engagement enhances entrepreneurial self-efficacy, creativity, and opportunity recognition among youth entrepreneurs (Baharuddin et al., 2023).

Proposed Research Model and Hypotheses

Based on the Theory of Planned Behavior (Ajzen, 1991) and Social Cognitive Theory (Bandura, 1986), this study proposes that entrepreneurial exposure and social media engagement function as external environmental predictors that influence sustainable social entrepreneurship intention among TVET students. Entrepreneurial traits namely creativity, opportunity recognition, resilience, and adaptability are proposed as mediating variables that strengthen the relationship between environmental exposure and entrepreneurial intention.

Conceptual Framework and Hypothesis Development

The conceptual framework proposes that entrepreneurial exposure and social media engagement enhance students' entrepreneurial traits, which subsequently strengthen sustainable social entrepreneurship intention. Entrepreneurial traits function as a mediating mechanism through which environmental learning experiences influence entrepreneurial readiness. The framework further incorporates sustainability orientation by positioning social entrepreneurship as a platform for addressing environmental and community challenges through innovative and socially responsible enterprise development.

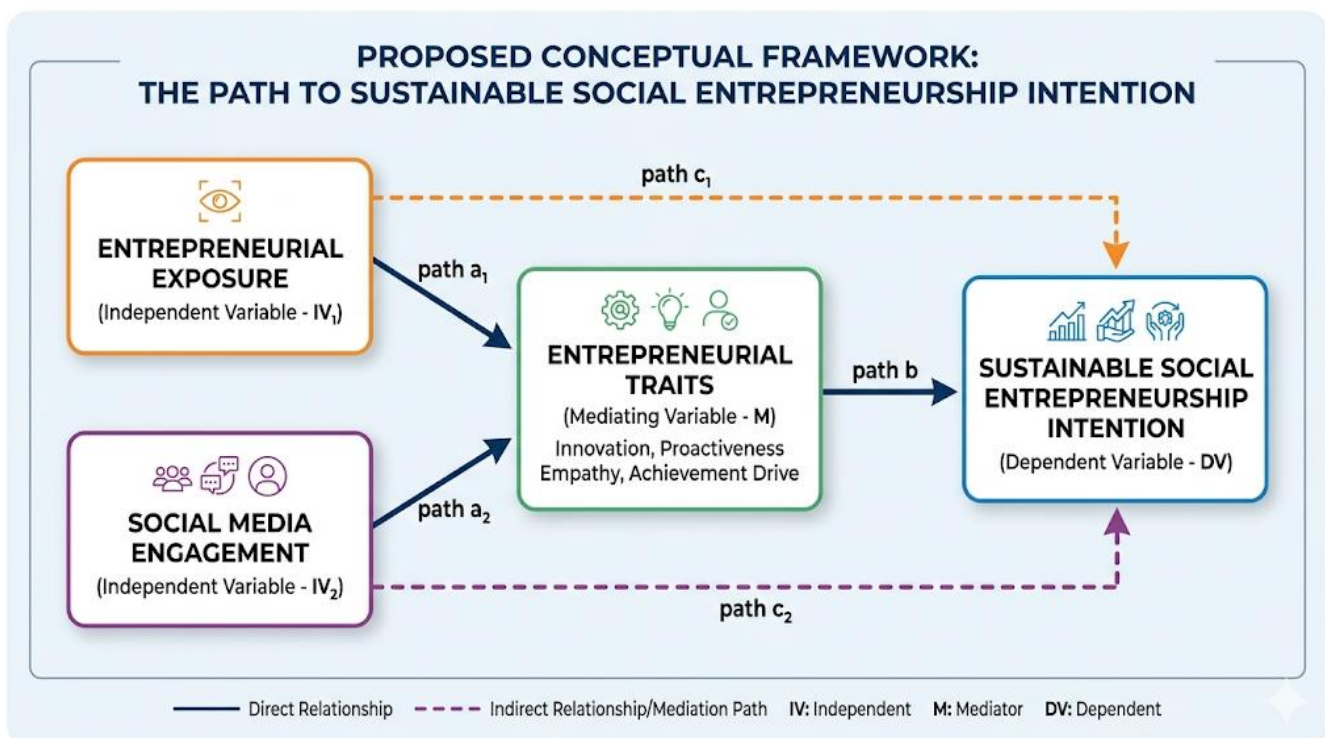


Figure 1: Proposed Conceptual Framework: The Path to Sustainable Social Entrepreneurship Intention .

The Direct Effects of Antecedents on Entrepreneurial Traits (Paths a₁ and a₂).

To understand the mechanisms driving sustainable social entrepreneurship intentions, it is critical to evaluate how external factors shape an individual's underlying psychological and behavioural characteristics. Grounded in Social Learning Theory, Entrepreneurial Exposure (IV₁) serves as a primary experiential channel through

which individuals observe, model, and absorb entrepreneurial behaviour. Direct exposure such as being raised in a business-owning family, completing specialized entrepreneurship education, or undergoing mentorship gradually cultivates and strengthens vital Entrepreneurial Traits (M), including resilience, risk-taking propensity, and innovative thinking.

Concurrently, the rapid evolution of digital ecosystems introduces Social Media Engagement (IV_2) as a modern, pervasive environmental antecedent. Active engagement on social media platforms involves intense networking, interaction with digital creators and regular consumption of community-centric content. This continuous digital immersion acts as a catalyst for cognitive shifting; for instance, witnessing global socioeconomic or environmental crises online can systematically enhance cognitive and emotional empathy, while active participation in virtual problem-solving communities bolsters personal proactiveness. Consequently, both physical exposure and digital engagement are posited to be crucial drivers in the formation of entrepreneurial characteristics. Thus, the following hypotheses are proposed:

Hypothesis 1 (H_1): Entrepreneurial Exposure significantly and positively influences individuals' Entrepreneurial Traits (Path a_1).

Hypothesis 2 (H_2): Social Media Engagement significantly and positively influences individuals' Entrepreneurial Traits (Path a_2).

The Influence of Entrepreneurial Traits on Sustainable Social Entrepreneurship Intention (Path b).

Entrepreneurial intentions are rarely formed in a psychological vacuum; rather, they are deeply rooted in stable individual predispositions. Within the domain of social entrepreneurship, specific Entrepreneurial Traits (M) function as the intrinsic drivers required to mobilize sustainable action. Unlike traditional commercial venture creation, sustainable social entrepreneurship demands a unique duality of purpose achieving financial viability while systematically mitigating societal or ecological degradation. Psychological traits like empathy and social responsibility provide the essential motivation for the "social" dimension of the venture, directing the individual's focus toward collective welfare. Concurrently, behavioral traits such as innovativeness, proactiveness, and risk-tolerance provide the strategic capability necessary to address the "sustainability" and economic viability dimensions. Individuals who naturally possess or have developed this specific configuration of traits are inherently more inclined to channel their agency toward systemic change. Therefore, it is hypothesized:

Hypothesis 3 (H_3): Entrepreneurial Traits significantly and positively influence Sustainable Social Entrepreneurship Intention (Path b).

The Direct Effects of Antecedents on Sustainable Social Entrepreneurship Intention (Paths c_1 and c_2)

Beyond their role in shaping internal psychological profiles, both experiential exposure and digital immersion can directly catalyse structural behavioural intentions. Entrepreneurial Exposure can directly trigger Sustainable Social Entrepreneurship Intention (DV) through vivid, observational learning. Simply witnessing a successful social enterprise model can instil immediate cognitive feasibility and desirability in an individual, prompting a direct desire to replicate that impact without necessarily requiring a fundamental transformation of their core personality traits.

Similarly, Social Media Engagement possesses the unique capability to directly spark intention through localized or viral digital mobilization. Real-time media exposure to pressing social injustices or ecological emergencies can create an urgent sense of civic duty and immediate behavioural intent. The highly interactive and informative nature of social platforms lowers the perceived barriers to entry, enabling a direct transition from digital consumption to entrepreneurial intent. Based on these dynamics, the following hypotheses are articulated:

Hypothesis 4 (H_4): Entrepreneurial Exposure significantly and positively influences Sustainable Social Entrepreneurship Intention directly (Path c_1).

Hypothesis 5 (H_5): Social Media Engagement significantly and positively influences Sustainable Social Entrepreneurship Intention directly (Path c_2).

The Mediating Role of Entrepreneurial Traits (The Indirect Effects: $a_1 \times b$ and $a_2 \times b$)

While direct paths offer essential insights, a comprehensive understanding of the cognitive architecture underlying social venture creation requires a mechanism-based approach. This framework posits that Entrepreneurial Exposure and Social Media Engagement do not exclusively transform intentions through unmediated direct pathways. Instead, their profound impact lies in their capacity to fundamentally reshape an individual's inner psychological matrix first, which subsequently manifests as localized social intentions.

This structural sequence implies an indirect, mediated relationship. Experiential exposure to business environments and active digital engagement act as external environmental inputs that foster, mature, and refine the individual's internal entrepreneurial traits (e.g., empathy, innovativeness, achievement drive). It is this heightened state of entrepreneurial character that ultimately guides, channels, and solidifies the conscious decision to plan and launch a sustainable social enterprise. Without the internal development of these traits, the external stimuli of exposure and media may fail to translate into sustained, viable intentions. To empirically evaluate this cognitive bridge, the following mediation hypotheses are advanced:

Hypothesis 6 (H_6): Entrepreneurial Traits significantly mediate the positive relationship between Entrepreneurial Exposure and Sustainable Social Entrepreneurship Intention (Indirect Path: $IV_1 - M - DV$).

Hypothesis 7 (H_7): Entrepreneurial Traits significantly mediate the positive relationship between Social Media Engagement and Sustainable Social Entrepreneurship Intention (Indirect Path: $IV_2 - M - DV$).

METHODOLOGY

Research Design

This study adopted a cross-sectional quantitative descriptive-correlational research design to examine the relationships among entrepreneurial exposure, social media engagement, entrepreneurial traits, and sustainable social entrepreneurship intention among Malaysian TVET students. The design was considered appropriate because the study aimed to examine the relationships and predictive influence among multiple variables within a specific population at a single point in time. The target population consisted of final-year students enrolled in Malaysian public polytechnics and community colleges. These students were selected because they had already been exposed to entrepreneurship-related courses, industrial training and technical learning experiences throughout their academic programmes. To ensure adequate representation across different vocational disciplines, a stratified random sampling technique was employed. The respondents were categorized into three main technical clusters namely Engineering and Technology, Applied Sciences, and Commerce and Services. This sampling approach enabled the study to obtain balanced representation from diverse technical and vocational backgrounds. A total of 180 questionnaires were distributed through both online and face-to-face data collection methods. Out of these, 159 fully completed questionnaires were successfully collected and deemed usable for analysis, representing an 88.3% response rate.

The final sample size of 159 respondents was considered adequate for conducting correlation, multiple regression, and mediation analyses using SPSS Version 27, consistent with the recommendations for multivariate statistical analysis by Hair et al. (2019). Although the sample size of 159 respondents satisfies the requirements for the statistical analyses employed in this study, the sample was drawn from selected Malaysian polytechnics and community colleges. Therefore, caution should be exercised when generalising the findings to the broader Malaysian TVET student population, which encompasses diverse institutional types, geographical regions, and fields of study. The demographic profile reflects a balanced gender distribution across participants aged 18 to 25, aligning with the typical demographic makeup of Malaysian technical institutes. Respondents represented a broad spectrum of technical disciplines:

1. Engineering & Heavy Tech: Mechatronics Engineering, Automotive Technology, Mechanical Engineering, Technology and Manufacturing.

2. Applied Sciences: Food Technology, Creative Digital Production.
3. Commerce & Corporate Services: Retail Management, Logistics and Supply Chain Management, Secretarial Science, Business Studies, Islamic Finance.

Psychometric Instrumentation and Measurement Scale

The structured survey instrument was divided into six specialized sections designed to measure the latent constructs using 5-point Likert scales, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Measurement items were adapted from validated psychometric instruments to fit a sustainable entrepreneurship context:

1. Green Social Entrepreneurship Intention: Derived from Liñán & Fayolle (2015) to evaluate a student's commitment to launching an eco-enterprise.
2. Entrepreneurial Exposure: Adapted from Ali & Abdullah (2024) to measure participation in business simulations, innovation challenges, and formal coursework.
3. Social Media Engagement: Adapted from Baharuddin et al. (2023) to measure active digital learning and networking.
4. Entrepreneurial Traits: Developed based on Amabile (1996) and Shane & Venkataraman (2000) as a multi-item construct covering creativity, opportunity recognition, resilience, and adaptability.
5. Sustainability Orientation: Adapted from Yang et al. (2024) to capture pro-environmental empathy and moral obligation.

Validity and Reliability

A pilot study involving 30 TVET students was conducted to assess the clarity, reliability, and validity of the research instrument before the actual data collection process. Reliability analysis was performed using Cronbach's alpha coefficient. The results showed that all constructs achieved Cronbach's alpha values exceeding 0.70, indicating satisfactory internal consistency and reliability. To assess construct validity, exploratory factor analysis (EFA) was conducted using principal component analysis with varimax rotation. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy exceeded the recommended value of 0.60, while Bartlett's Test of Sphericity was statistically significant ($p < .05$), indicating that the data were suitable for factor analysis. All measurement items achieved acceptable factor loading values above 0.60, confirming satisfactory construct validity. Corrected item-total correlation values also exceeded the recommended threshold of 0.30, demonstrating that the questionnaire items were appropriate for measuring the intended constructs.

Data Collection Procedure

Data collection was conducted through both online and face-to-face questionnaire distribution. Ethical approval was obtained from participating institutions prior to data collection. Respondents were informed about the purpose of the study, confidentiality of responses, and voluntary participation. Informed consent was obtained from all respondents before participation.

Data Analysis

Data were analyzed using Statistical Package for the Social Sciences (SPSS) Version 27. Descriptive statistics including frequency, percentage, mean, and standard deviation were used to summarize respondents' demographic profiles and the distribution of variables. Inferential statistical analyses were conducted to examine the relationships among entrepreneurial exposure, social media engagement, entrepreneurial traits, and sustainable social entrepreneurship intention. Pearson correlation analysis was used to determine the strength and direction of relationships between variables.

Multiple regression analysis was employed to examine the predictive influence of entrepreneurial exposure and social media engagement on sustainable social entrepreneurship intention. In addition, mediation analysis was conducted using the SPSS PROCESS Macro developed by Hayes (2018) to examine the mediating role of entrepreneurial traits in the relationship between entrepreneurial exposure, social media engagement, and sustainable social entrepreneurship intention. All statistical analyses were conducted at a significance level of $p < .05$.

Multiple Regression and Mediation Analysis

Multiple regression analysis demonstrated that entrepreneurial exposure significantly predicts sustainable social entrepreneurship intention ($\beta = .41, p < .001$), while social media engagement also showed a significant positive influence on sustainable social entrepreneurship intention ($\beta = .36, p < .001$). The findings further revealed that entrepreneurial traits significantly influenced sustainable social entrepreneurship intention ($\beta = .52, p < .001$). This indicates that students who demonstrate higher levels of creativity, opportunity recognition, adaptability, and resilience are more likely to engage in sustainable social entrepreneurship activities. Mediation analysis using the SPSS PROCESS Macro showed that entrepreneurial traits partially mediated the relationship between entrepreneurial exposure and sustainable social entrepreneurship intention, as well as the relationship between social media engagement and sustainable social entrepreneurship intention.

The bootstrapping results confirmed significant indirect effects because the confidence intervals did not include zero, thereby supporting the proposed mediation hypotheses. The regression model explained a substantial proportion of variance in sustainable social entrepreneurship intention ($R^2 = .68$), indicating strong predictive capability.

FINDINGS AND DISCUSSION

Respondents' Demographic Profile

A total of 159 respondents participated in this study. The respondents consisted of students from various Malaysian TVET institutions including polytechnics and community colleges. The participants represented multiple technical and vocational disciplines such as Technology and Manufacturing, Automotive Technology, Mechanical Engineering, Retail Management, Mechatronics, Food Technology, Creative Digital Production, and Business Studies. The majority of respondents were between 18 and 25 years old, reflecting the typical age group of Malaysian TVET students. Gender distribution was relatively balanced, allowing the study to capture perspectives from both male and female students. The diversity of respondents indicates that sustainable social entrepreneurship potential exists across various technical and vocational disciplines.

The findings suggest that TVET students from different educational backgrounds possess the potential to contribute toward sustainable community development through entrepreneurial innovation. This supports the argument that sustainable social entrepreneurship is not limited to business-oriented students but is also relevant to technical and vocational learners who possess practical and industry-related skills.

Descriptive Analysis of Main Variables

Descriptive analysis was conducted to determine the overall level of entrepreneurial exposure, social media engagement, entrepreneurial traits, and sustainable social entrepreneurship intention among TVET students. The findings showed that respondents demonstrated a high level of sustainable social entrepreneurship intention with an overall mean score of 4.05. This indicates that most students were interested in participating in entrepreneurial activities that contribute toward social and environmental improvement.

Entrepreneurial exposure recorded a mean score of 3.94, suggesting that respondents had moderate to high involvement in entrepreneurship-related activities such as workshops, innovation competitions, business simulations, and entrepreneurial training programmes. Social media engagement showed a high mean score of 4.08, indicating that students actively used social media platforms for entrepreneurial learning, communication, networking, and information sharing. Entrepreneurial traits including creativity, opportunity recognition, resilience, and adaptability also recorded high mean values. Among these dimensions, opportunity recognition demonstrated the highest mean score, suggesting that students were capable of identifying potential social and environmental opportunities that could be transformed into entrepreneurial initiatives. These findings imply that TVET students generally possess positive entrepreneurial orientations and are increasingly aware of the importance of sustainable and socially responsible entrepreneurship.

Correlation Analysis

Pearson correlation analysis was conducted to examine the relationships among entrepreneurial exposure, social media engagement, entrepreneurial traits, and sustainable social entrepreneurship intention. The findings revealed significant positive relationships among all major variables. Entrepreneurial exposure demonstrated a strong positive relationship with sustainable social entrepreneurship intention ($r = .72, p < .01$). This indicates that students who are more frequently exposed to entrepreneurial activities tend to demonstrate stronger intention toward sustainable social entrepreneurship. Social media engagement also showed a significant positive relationship with sustainable social entrepreneurship intention ($r = .69, p < .01$). This suggests that students who actively engage with social media platforms for entrepreneurial purposes are more likely to develop sustainable entrepreneurial intention. In addition, entrepreneurial traits demonstrated the strongest relationship with sustainable social entrepreneurship intention. Opportunity recognition showed the highest correlation value ($r = .86, p < .01$), followed by creativity and innovation ($r = .81, p < .01$), and adaptability and resilience ($r = .76, p < .01$).

These findings indicate that entrepreneurial competencies play an important role in influencing students' readiness to engage in sustainable social entrepreneurship activities. Students who possess stronger entrepreneurial traits are better prepared to identify social and environmental problems and transform them into innovative entrepreneurial solutions. The findings are consistent with previous studies by Shane and Venkataraman (2000) and Amabile (1996), which emphasized that creativity, opportunity recognition, and innovation are fundamental determinants of entrepreneurial behaviour.

Multiple Regression Analysis

Multiple regression analysis was conducted to examine the predictive influence of entrepreneurial exposure and social media engagement on sustainable social entrepreneurship intention. The results demonstrated that entrepreneurial exposure significantly predicts sustainable social entrepreneurship intention ($\beta = .41, p < .001$). This finding suggests that students who participate in entrepreneurial training, workshops, innovation programmes, and community projects are more likely to develop stronger entrepreneurial intention. Similarly, social media engagement significantly influenced sustainable social entrepreneurship intention ($\beta = .36, p < .001$). This indicates that digital platforms serve as important learning environments that encourage entrepreneurial communication, networking, idea-sharing, and sustainability awareness. The regression model explained 68% of the variance in sustainable social entrepreneurship intention ($R^2 = .68$), indicating that entrepreneurial exposure and social media engagement collectively contribute substantially toward explaining entrepreneurial intention among TVET students.

The findings support the Theory of Planned Behavior (Ajzen, 1991), which explains that behavioural intention is influenced by attitudes, perceived behavioural control, and social influence. Entrepreneurial exposure and social media engagement strengthen students' confidence, entrepreneurial attitudes, and perceived capability to engage in sustainable entrepreneurship activities.

These findings also support Social Cognitive Theory (Bandura, 1986), which emphasizes that learning occurs through environmental interaction, observation, and experiential learning. Exposure to entrepreneurial activities and digital entrepreneurial content contributes toward the development of entrepreneurial self-efficacy and sustainable entrepreneurial readiness.

Mediation Analysis of Entrepreneurial Traits

Mediation analysis was conducted using the SPSS PROCESS Macro developed by Hayes (2018) to examine whether entrepreneurial traits mediate the relationship between entrepreneurial exposure, social media engagement, and sustainable social entrepreneurship intention. The results revealed that entrepreneurial traits significantly mediated the relationship between entrepreneurial exposure and sustainable social entrepreneurship intention. The indirect effect was statistically significant because the bootstrapped confidence interval did not include zero. Similarly, entrepreneurial traits significantly mediated the relationship between social media engagement and sustainable social entrepreneurship intention.

These findings indicate that entrepreneurial exposure and social media engagement alone are insufficient to directly strengthen sustainable entrepreneurial intention unless students also develop entrepreneurial competencies such as creativity, opportunity recognition, resilience, and adaptability. This finding highlights the importance of entrepreneurial trait development within TVET education. Exposure to entrepreneurial environments and digital learning platforms contributes toward entrepreneurial intention by strengthening students' internal competencies and confidence.

The mediation findings further support Social Cognitive Theory, which emphasizes that environmental learning experiences influence behaviour through the development of cognitive and personal capabilities. Entrepreneurial traits function as psychological mechanisms that transform entrepreneurial learning experiences into entrepreneurial intention.

DISCUSSION OF FINDINGS

The findings of this study demonstrate that sustainable social entrepreneurship intention among Malaysian TVET students is influenced by the interaction of environmental, behavioural, and psychological factors. Entrepreneurial exposure significantly influenced sustainable social entrepreneurship intention because experiential learning activities provide students with opportunities to develop entrepreneurial skills, business understanding, and sustainability awareness. Activities such as entrepreneurship workshops, innovation challenges, and community-based projects enable students to connect technical knowledge with real-world social and environmental problems.

Social media engagement also emerged as a significant predictor of sustainable social entrepreneurship intention. Digital platforms facilitate entrepreneurial networking, collaboration, knowledge sharing, and exposure to successful entrepreneurial role models. Through social media, students are able to observe innovative business ideas, sustainability campaigns, and community development initiatives that strengthen entrepreneurial motivation and self-efficacy.

The findings further revealed that entrepreneurial traits function as an important mediating factor. Students who demonstrate higher levels of creativity, adaptability, resilience, and opportunity recognition are more likely to translate entrepreneurial exposure and digital engagement into meaningful entrepreneurial intention. Among all entrepreneurial traits, opportunity recognition demonstrated the strongest relationship with sustainable social entrepreneurship intention. This suggests that students who are capable of identifying unmet social and environmental needs possess stronger motivation to establish sustainable entrepreneurial initiatives.

The findings support the integration of the Theory of Planned Behaviour and Social Cognitive Theory in explaining sustainable entrepreneurial intention. TPB explains that positive attitudes, perceived capability, and supportive social environments contribute toward entrepreneurial intention formation. Meanwhile, SCT explains how observational learning, environmental interaction, and self-efficacy influence entrepreneurial competency development.

Importantly, the findings demonstrate that sustainable social entrepreneurship within TVET education should not focus solely on profit-oriented business development. Instead, entrepreneurship education should integrate sustainability awareness, social innovation, environmental responsibility, and community engagement. This study therefore highlights the importance of developing sustainable TVET ecosystems that combine entrepreneurial learning, digital engagement, environmental awareness, and social innovation in preparing future-ready graduates capable of contributing toward sustainable national development.

Nevertheless, the present findings should be interpreted as evidence of significant theoretical and predictive relationships rather than definitive causal effects. Given the cross-sectional nature of the study, the observed relationships cannot establish temporal or causal ordering among entrepreneurial exposure, social media engagement, entrepreneurial traits, and sustainable social entrepreneurship intention. Furthermore, entrepreneurial intention represents an important psychological precursor to venture creation rather than actual entrepreneurial behaviour. Future longitudinal research is therefore needed to determine whether these intentions subsequently translate into sustainable entrepreneurial actions and venture creation following graduation. Such

evidence would further strengthen the explanatory capacity of the integrated TPB–SCT framework within the TVET context.

Research Limitation

This study provides meaningful insights into sustainable social entrepreneurship intention among Malaysian TVET students; however, several limitations should be acknowledged.

First, the study employed a cross-sectional design, which restricts the ability to establish causal relationships among entrepreneurial exposure, social media engagement, entrepreneurial traits, and sustainable social entrepreneurship intention. Although significant associations were identified, future longitudinal studies are required to determine how entrepreneurial intention evolves into actual entrepreneurial behaviour over time.

Second, the sample consisted of 159 respondents from selected Malaysian polytechnics and community colleges. While statistically adequate for the analyses conducted, the findings may not fully represent the diversity of Malaysia's TVET institutions. Future studies should involve larger samples from different geographical regions and institutional categories.

Third, all variables were measured using self-reported questionnaires. Such measures may be influenced by social desirability bias or respondents' subjective perceptions, potentially inflating observed relationships. Future research may benefit from incorporating behavioural indicators, institutional records, or multi-source assessments to enhance validity.

Finally, the present study focused exclusively on quantitative data. Although this approach enables statistical testing of theoretical relationships, it provides limited understanding of the motivations, lived experiences, and contextual challenges faced by aspiring social entrepreneurs. Qualitative approaches such as interviews, focus groups, or case studies could complement quantitative findings and provide richer insights into sustainable entrepreneurial development.

Theoretical and Practical Contributions

This study makes several theoretical contributions to the literature on sustainable social entrepreneurship and TVET education. First, it extends the application of the Theory of Planned Behavior (TPB) and Social Cognitive Theory (SCT) by integrating environmental and experiential influences with individual entrepreneurial traits in explaining sustainable social entrepreneurship intention. The relevance of TPB to social entrepreneurial intention is well established. Zaremohzzabieh et al. (2019), through a meta-analysis involving 31 studies and 14,318 respondents, demonstrated the applicability of TPB in explaining social entrepreneurial intention. Similarly, Chang et al. (2022) found that attitude, subjective norms, and perceived behavioural control significantly influence university students' social entrepreneurial intentions. These findings provide a strong theoretical basis for applying TPB to understand the intention formation process in the present TVET context.

The integration of SCT further strengthens this theoretical explanation by recognising that entrepreneurial cognition and intention develop through interaction with environmental and social learning experiences. This is particularly relevant to vocational education, where students acquire entrepreneurial competencies not only through formal education but also through observation, experiential learning, and digital interaction. Recent evidence among vocational students demonstrates the value of combining TPB and SCT: Hu et al. (2025) found that social media use was associated with entrepreneurial intention among vocational students and that entrepreneurial self-efficacy operated as an important psychological mechanism within an integrated TPB–SCT framework. Thus, the present study extends this theoretical perspective by examining entrepreneurial exposure and social media engagement simultaneously within the context of sustainable social entrepreneurship among Malaysian TVET students.

Second, this study contributes to the literature by positioning entrepreneurial traits as a mediating mechanism linking entrepreneurial exposure and social media engagement with sustainable social entrepreneurship intention. Rather than assuming that environmental exposure automatically translates into entrepreneurial intention, the findings indicate that the relationship operates partly through the development of internal

entrepreneurial capabilities, particularly creativity, opportunity recognition, resilience, and adaptability. This mechanism-based explanation is consistent with emerging entrepreneurial intention research demonstrating that individual cognitive and psychological characteristics can serve as intervening mechanisms between external influences and entrepreneurial intention. For example, Nemiño et al. (2025) demonstrated significant relationships among entrepreneurial characteristics, entrepreneurial mindset, and entrepreneurial intention, highlighting the importance of internal cognitive mechanisms in converting entrepreneurial characteristics into intention.

Third, the study contributes to the emerging literature on digital influences on entrepreneurial intention by demonstrating the relevance of social media engagement within the TVET entrepreneurship ecosystem. Previous research has shown that social media can shape the cognitive processes associated with entrepreneurial intention by increasing exposure to entrepreneurial information, role models, networks, and opportunities (Vesci et al., 2022; Sutrisno et al., 2023). More recent research involving vocational students similarly demonstrates that social media use can influence entrepreneurial intention through psychological mechanisms such as entrepreneurial self-efficacy (Hu et al., 2025). The present findings extend this literature by demonstrating that digital engagement is relevant not merely to conventional entrepreneurial intention but also to sustainability- and socially oriented entrepreneurial intention among TVET students.

From a practical perspective, the findings suggest that TVET institutions should move beyond conventional entrepreneurship education that primarily emphasises business creation and instead develop learning environments that simultaneously cultivate entrepreneurial competencies, social innovation, sustainability orientation, and digital engagement. This recommendation is supported by evidence from vocational education research showing a positive relationship between engagement in entrepreneurship education and entrepreneurial intention among vocational college students (Masri et al., 2021). Consequently, experiential approaches such as innovation challenges, community-based projects, entrepreneurial simulations, industry mentorship, and sustainability-oriented problem solving may provide meaningful platforms for strengthening students' entrepreneurial capabilities and intention.

At the policy level, the findings underscore the importance of developing an enabling TVET entrepreneurship ecosystem involving educational institutions, industry, government agencies, communities, and social enterprise actors. Such an ecosystem should provide students with access to mentorship, entrepreneurial networks, incubation opportunities, digital platforms, and sustainability-oriented projects. This broader institutional perspective is particularly important because contemporary social entrepreneurial intention research increasingly recognises that intention is shaped not only by individual psychological factors but also by social, motivational, ethical, and institutional conditions. A recent systematic review of 114 empirical studies by Kadyan (2026), for example, identifies these multiple domains as important antecedents of social entrepreneurial intention and highlights the need for more contextually integrated models.

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study examined the influence of entrepreneurial exposure and social media engagement on sustainable social entrepreneurship intention among Malaysian TVET students, with entrepreneurial traits functioning as mediating variables. The study was conducted in response to the increasing need for future-ready graduates who are not only technically competent but also socially responsible, environmentally conscious, and entrepreneurial. The findings revealed that Malaysian TVET students generally demonstrate a high level of sustainable social entrepreneurship intention. Entrepreneurial exposure and social media engagement were found to significantly predict students' intention toward sustainable social entrepreneurship. Students who actively participated in entrepreneurial programmes, workshops, innovation projects, and entrepreneurship-related activities demonstrated stronger entrepreneurial readiness and motivation. The study also found that social media engagement plays an important role in enhancing entrepreneurial awareness, communication, collaboration, and sustainability-oriented learning. Digital platforms provide opportunities for students to access entrepreneurial knowledge, observe entrepreneurial role models, and engage with community-based innovation activities.

Importantly, entrepreneurial traits namely creativity, opportunity recognition, resilience, and adaptability were found to significantly mediate the relationship between entrepreneurial exposure, social media engagement, and sustainable social entrepreneurship intention. This indicates that entrepreneurial learning experiences and digital engagement strengthen entrepreneurial intention through the development of entrepreneurial competencies and self-efficacy. Among the entrepreneurial traits examined, opportunity recognition demonstrated the strongest relationship with sustainable social entrepreneurship intention. This finding suggests that students who are capable of identifying social and environmental problems are more likely to transform those challenges into innovative entrepreneurial opportunities.

The findings further support the integration of the Theory of Planned Behavior (TPB) and Social Cognitive Theory (SCT) in explaining sustainable entrepreneurial intention among TVET students. TPB explains how attitudes, perceived behavioural control, and social influence shape entrepreneurial intention, while SCT explains how environmental learning experiences and self-efficacy contribute toward entrepreneurial competency development.

Overall, the study highlights the importance of developing sustainable TVET ecosystems that integrate entrepreneurship education, sustainability awareness, social innovation, digital engagement, and experiential learning. Sustainable social entrepreneurship should be positioned as an important pathway for preparing TVET students to contribute toward economic development, environmental sustainability, and community well-being.

Despite the identified limitations, this study contributes to the growing body of knowledge on sustainable social entrepreneurship by extending the integration of the Theory of Planned Behavior (TPB) and Social Cognitive Theory (SCT) within the Malaysian TVET context. Specifically, the findings demonstrate the role of entrepreneurial traits as an explanatory mechanism through which entrepreneurial exposure and social media engagement are associated with sustainable social entrepreneurship intention. The proposed framework therefore provides an empirical foundation for future longitudinal and mixed-method investigations examining how entrepreneurial intention may evolve into sustainable entrepreneurial behaviour and venture creation.

Recommendations

Recommendations for TVET Institutions

TVET institutions should strengthen entrepreneurship education by integrating sustainable social entrepreneurship components into existing curricula. Educational programmes should focus not only on profit-oriented business development but also on solving social and environmental challenges through innovation and community engagement. Institutions are encouraged to introduce sustainability-oriented entrepreneurship modules covering topics such as green entrepreneurship, recycling innovation, circular economy practices, renewable energy entrepreneurship, sustainable manufacturing, and community-based enterprise development.

In addition, TVET institutions should expand experiential learning opportunities through innovation competitions, entrepreneurship boot camps, sustainability projects, and industry-community collaboration programmes. These activities can enhance students' entrepreneurial exposure and strengthen important entrepreneurial competencies such as creativity, adaptability, and opportunity recognition. TVET educators should also utilize social media and digital platforms as learning tools to promote entrepreneurial communication, networking, digital marketing, and sustainability awareness among students.

Recommendations for Policymakers

Policymakers should strengthen national support systems for sustainable entrepreneurship development within the TVET sector. Greater emphasis should be placed on sustainability-focused entrepreneurship policies, incubation programmes, and funding schemes that support student-led social enterprises and green innovation projects. Government agencies should establish collaboration networks involving TVET institutions, industries, local communities, and non-governmental organizations (NGOs) to support sustainable entrepreneurial ecosystems. Financial incentives and grants should also be provided to encourage students to participate in sustainability-oriented entrepreneurial activities. In addition, national TVET transformation strategies should

incorporate sustainability education and social innovation as core components of workforce development policies in line with the Sustainable Development Goals (SDGs).

Recommendations for Industry and Community Partners

Industry players and community organizations should collaborate more actively with TVET institutions in developing sustainability-oriented entrepreneurial initiatives. Such collaboration may include mentorship programmes, industrial training opportunities, sustainability projects, and community-based innovation activities. Partnerships with green industries and social enterprises can provide students with practical exposure to sustainable business practices and environmentally responsible innovation. Community engagement activities can also help students understand local social and environmental challenges while developing practical entrepreneurial solutions.

Recommendations for Future Research

Future research should extend the present study by employing larger and more diverse samples involving TVET students from different geographical regions and institutional categories across Malaysia. Such an approach would enhance the generalisability of the findings and provide a more comprehensive understanding of sustainable social entrepreneurship intention within the broader Malaysian TVET ecosystem. Comparative studies across different types of TVET institutions, fields of study, or geographical regions may also reveal important contextual differences in the development of sustainable entrepreneurial intention.

Longitudinal research is particularly recommended to examine whether sustainable social entrepreneurship intention develops into actual entrepreneurial behaviour following graduation. Tracking students over time would provide stronger evidence regarding the progression from entrepreneurial exposure and social media engagement to entrepreneurial trait development, intention formation, and ultimately sustainable venture creation. Such an approach would also enable future studies to examine the temporal relationships among the constructs and provide stronger evidence regarding the explanatory mechanisms proposed in the integrated TPB–SCT framework.

Future studies should also consider adopting mixed-method or qualitative approaches, including interviews, focus groups, and case studies, to complement quantitative findings. These approaches could provide deeper insights into students' motivations, perceived barriers, entrepreneurial experiences, and the institutional conditions that facilitate or constrain sustainable social entrepreneurship. Integrating quantitative and qualitative evidence would therefore provide a more holistic understanding of how entrepreneurial intentions are formed and translated into entrepreneurial action.

In addition, future research may extend the proposed model by incorporating contextual and individual factors such as institutional support, entrepreneurial self-efficacy, digital competency, sustainability orientation, leadership capability, and entrepreneurial ecosystem support as potential mediating or moderating variables. Future studies may also employ more advanced analytical techniques, such as structural equation modelling (SEM), to simultaneously assess the measurement and structural relationships within the proposed model. Cross-country comparative research, particularly involving TVET systems in other ASEAN countries, could further determine whether the relationships identified in this study remain consistent across different educational, socioeconomic, and institutional contexts.

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