



Internet Entrepreneurial Self-Efficacy and Sustainable Performance: A Serial Mediation Role of Social Media Usage and Innovation Capability among Micro-Entrepreneurs

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ABSTRACT

Sustainable performance has become a significant objective for entrepreneurs, especially micro-entrepreneurs in emerging economies, as it facilitates enduring growth and a competitive edge. This study investigates the serial mediation effect of social media usage and innovation capability on the relationship between internet entrepreneurial self-efficacy and sustainable performance. The research employed a cross-sectional design, surveying a sample of 325 micro-entrepreneurs on online platforms. The findings indicate that social media usage and innovation capability serially mediate the link between internet entrepreneurial self-efficacy and the sustainable performance of micro-entrepreneurs in developing countries. Moreover, the serial mediation model explained 47.2% of the variance in sustainable performance. These results also contribute to the existing literature on entrepreneurship by integrating Social Cognition Theory (SCT), Resource-Based Theory (RBT), and Triple Bottom Line (TBL) into a unified framework. Additionally, the study proposes various entrepreneurial and managerial implications for improving organizational performance.

Keywords: Internet Entrepreneurial Self-efficacy, Social Media Usage, Innovation Capability, Sustainable Performance, Micro Entrepreneurs

JEL Classifications: M13, M14, M15, M37

1. INTRODUCTION

MSME has emerged as a highly effervescent and vigorous segment in an emerging economy. It is regarded as a significant source of growth, innovation, and jobs. They have a potential impact on achieving many of the sustainable development goals that are much greater than their size (ITC, 2019). The World Bank has defined micro-enterprises as those with one to nine employees (UNDESA, 2020). In India, MSME comprises more than 80% of Industrial enterprises; among them, 95% are micro-enterprises. It also plays a critical role by contributing 27% of the GDP, 50% of the overall exports, and 111 million jobs (Briefing, 2023). MSMEs act as a catalyst by supporting large industries as ancillary units, generating employment, promoting sustainable livelihood, and reducing poverty (Arifin et al., 2023; Vatanasakdakul et al., 2020).

Additionally, micro-enterprises offer extensive opportunities for individuals with limited skills and resources (Chatterjee and Das, 2016). Hence, sustainable micro-enterprises are considered an engine for the development of emerging economies. For this, micro-entrepreneurs need to possess specific skills and capabilities, and this study aims to identify antecedents that impact the sustainable performance of micro-entrepreneurs in India.

The contemporary literature highlights three prominent theoretical frameworks that elucidate the sustainable performance of entrepreneurial ventures: Social Cognition Theory (SCT), Resource-Based Theory (RBT), and Triple Bottom Line (TBL) (AlKoliby et al., 2023; Barney, 2001; Imran et al., 2019; Khalil et al., 2021; Khan et al., 2021; McGee et al., 2009b). SCT posits that self-efficacy (SE) refers to an individual's conviction in their

capability to execute a specific task. This concept is domain-specific and can be applied across various contexts (Bandura, 1986). For instance, Yeh et al. (2021b) prove that Internet entrepreneurial self-efficacy (IESE) significantly impacts Internet entrepreneurial performance. Likewise, entrepreneurial self-efficacy (ESE) positively influences entrepreneurial performance (Agnes et al., 2017; Klongthong et al., 2020; Somwethee et al., 2023). Additionally, Salimon et al. (2023a) and Sharma et al. (2016) revealed that computer self-efficacy (CSE) enhances adopting cloud computing technology and mobile commerce. However, IESE is seldom addressed in the context of an online environment (Guo et al., 2016). Hence, this study aims to fill this gap by examining the influence of IESE on the performance of micro-entrepreneurs (ME) in India.

In addition, RBT emphasizes that entrepreneurs can ensure the sustainability of their venture by leveraging internal resources such as assets, capabilities, processes, and knowledge (Barney, 2001). Among the resources, innovation capability (IC) and social media usage (SMU) are recognized as excellent intangible tools for business success (Al-kalouti et al., 2020; Bruce et al., 2022). For example, Al-Shami et al. (2021) and Tajvidi and Karami (2021) reveal that social media sites and IC positively influence the performance of the hotel industry in the US and Malaysia. However, Al-Shami et al. (2021) advocated the need to apply this theory in contexts other than the hotel industry. Hence, this study aims to address this deficiency by analyzing the impact of SMU and IC on the performance of ME in online platforms.

Besides this, TBL highlights the integration of environmental, social, and economic performance that organizations can engage in, which positively impacts the natural environment and society and results in long-term economic benefits for the firm (Carter and Rogers, 2008). It is recognized as a holistic framework to measure sustainable performance (SUSP) (Elkington, 1994). Moreover, Silvius, (2017) and Tan et al. (2011) suggested that implementation of the TBL framework is critical for business success. Therefore, this study adopts the TBL framework, as it is a comprehensive measure to assess the SUSP of ME on the online platform in emerging economies.

This study enhances the existing literature by introducing a cohesive framework that integrates SCT, RBT, and TBL to explain the SUSP of ME in an online environment. Additionally, the research demonstrates the sequential mediation role of SMU and IC in the link between IESE and SUSP. Finally, the study emphasizes that IESE is vital in enhancing SMU, IC, and SUSP for online micro-entrepreneurs in developing countries. As the exploration of these relationships has been limited, the study makes a novel contribution to the literature.

2. LITERATURE REVIEW

2.1. Sustainable Performance

SUSP denotes the assimilation of environmental, social, and economic performance that enhances the natural environment and society while simultaneously providing economic benefits and competitive advantage to an organization (Carter and Rogers,

2008; Gong et al., 2018; Khan et al., 2021). Elkington (1994) introduced this concept of 'sustainability' in the Triple Bottom Line (TBL) framework, emphasizing the integration of social, economic, and environmental aspects to achieve a win-win strategy for society, the environment, and business. Additionally, AlKoliby et al. (2023) argued that implementation of the TBL framework enables entrepreneurs to achieve sustainable performance as these aspects interact within an ecosystem rather than in isolation (Paulraj, 2011). Moreover, the TBL framework has been recognized as a crucial factor in organizational decision-making, leading to superior performance (Rashid et al., 2015). Considering this, the study takes a broad approach to measuring the SUSP, including economic performance (EP), social performance (SP), and environmental performance (EVP).

The environmental sustainable performance denotes business activities that positively impact the natural environment, which includes a reduction in air pollution, energy use, and waste generation (Abdul-Rashid et al., 2017; Elkington, 1994; Khan et al., 2021). Meanwhile, socially sustainable performance indicates a firm's ability to enhance social welfare by promoting job safety, community development, employee satisfaction, and good working conditions (Abdul-Rashid et al., 2017; AlKoliby et al., 2023). Economically sustainable performance refers to business practices that favorably influence financial objectives, such as increased market share, sales, and return on investment (AlKoliby et al., 2023; Orobio et al., 2020). Hence, effective, sustainable performance enables organizations to build resilience, competitive advantage, and long-term viability by combining their economic, social, and environmental objectives (Abdul-Rashid et al., 2017; AlKoliby et al., 2023; Yusliza et al., 2020).

2.2. Internet Entrepreneurial Self-Efficacy (IESE)

IESE refers to an individual's confidence in their ability to establish and manage an online enterprise effectively (Wang et al., 2019). It is considered a vital antecedent to internet entrepreneurial performance, as it empowers entrepreneurs to efficiently perform the diverse tasks and roles associated with internet entrepreneurship (Chang et al., 2018; Yeh et al., 2021b). It is the most influential self-referent thought that affects entrepreneurial engagement, effort, and persistence (Bandura, 1986). Moreover, Chang et al. (2018) revealed that IESE significantly influences internet entrepreneurial intention, as entrepreneurs with high SE set ambitious goals, employ effective problem-solving strategies, and achieve better performance than those with low SE (Boyd and Vozikis, 1994).

Besides this, IESE is deemed to be an extension of ESE by integrating three dimensions: technology utilization, online consumer service, and internet marketing, to augment its pertinence in an online environment (Bandura, 2006; DeLone and McLean, 2004; Wilson et al., 2007). Technology utilization refers to an entrepreneur's ability to design a digital/social media platform for business operations (Wang, 2008; Wang et al., 2019). Meanwhile, online customer service reflects an entrepreneur's capacity to build and sustain digital customer relationships (DeLone and McLean, 2004). Ultimately, internet marketing encompasses an entrepreneur's capacity to utilize

online technologies (web, e-mail, social media platforms) and innovative marketing strategies (influencer marketing, digital marketing) to create a highly profitable business (DeLone and McLean, 2004; Wang et al., 2019; Wymbs, 2011). However, Chang et al. (2018) reported that the application of offline ESE scale in an online context is ineffectual and yields unfavorable results, as online entrepreneurs require a blend of traditional and digital competencies to effectively navigate the opportunities and challenges associated with their online enterprise (Bandura, 2006; DeLone and McLean, 2004; Wilson et al., 2007). Therefore, in this study, IESE refers to a micro-entrepreneurs belief in their capability to use technology, foster innovation, and achieve SUSP of their online venture.

2.3. Social Media Usage

Social media (SM) is defined as “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and allow the creation and exchange of user-generated content” (Kaplan and Haenlein, 2010). It is a tool that facilitates and encourages interactions, collaborations, and communication through discussions, voting, comments, and the sharing of information (Malita, 2011). In other words, SMU is the ability of the firm to leverage social media platforms such as Instagram, WhatsApp, Facebook, and YouTube for the purpose of experimentation, idea generation, customer service, and overall enhancement (Kiron et al., 2013).

Numerous studies have demonstrated that social media is a crucial tool for small and medium enterprises (SMEs) to improve their performance, especially in developing economies (Chatterjee and Kumar Kar, 2020; Odoom et al., 2017; Qalati et al., 2022; Solomon et al., 2023). Vatanasakdakul et al. (2020) indicated that social media has the potential to serve as an equalizing force, enabling micro-enterprises to compete with larger companies. Moreover, social media can be seen as an affordable technology for micro-entrepreneurs, as it only requires internet access, making it accessible for micro-businesses (Fitriani et al., 2023). Additionally, SMU provides significant benefits to organizations by fostering innovative business ideas, enhancing brand reputation, improving customer service, supporting brand efforts, increasing absorption capability, effective communication, ensuring information accessibility, building brand loyalty, and promoting cost-effectiveness (Bruce et al., 2022; Chatterjee and Kumar Kar, 2020; Qalati, et al., 2022; Tajvidi and Karami, 2021). Beninger et al. (2016) proved that SMU fosters women’s entrepreneurship by providing essential resources through real-time stakeholder feedback. However, the research on social media usage on SME performance has gained significant attention, and studies explicitly addressing social media usage among micro-enterprises, especially in the context of developing economies, are still emerging. This study aims to fill this gap by analyzing the impact of SMU on the performance of ME in India.

2.4. Innovation Capability

Innovation capability (IC) is perceived as the firm’s potential to produce or adopt innovation by leveraging internal capabilities and facilitating continuous improvement to generate values (Lawson and Samson, 2001; Saunila et al., 2014; Wang and Ahmed, 2004).

It is the consistent ability to transform information and ideas into new products, processes, and systems that benefit the firm and its stakeholders (Kafetzopoulos and Psomas, 2015). Le and Lei (2019) argued that IC should be considered as an optimal strategy to achieve competitive advantage and overcome key rivalry. It also catalyzes growth, profitability, and sustainability (Lloréns Montes et al., 2005). Hence, Fang et al. (2022) stated that IC should be viewed as an investment rather than a cost.

In addition, Lawson and Samson (2001) demonstrated that e-business is regarded as a key potential to improve IC, as online business reduces the need for physical proximity, improves knowledge linking, enhances process efficiency, and increases speed to market, ultimately resulting in enhanced IC. It is considered an important organizational capability as it positively impacts sales, profit, and competitive power, aligning with RBT (Barney, 2001; Sulistyo and Ayuni, 2019). Moreover, previous studies indicate that IC enables organizations to undertake risks, engage in firm expansion, respond to market volatility, and improve service quality, hence enhancing competitive advantage (Ince et al., 2023; Matsuno et al., 2002; Sulistyo and Ayuni, 2019). Furthermore, Le and Lei (2019) indicated that IC assists organizations in better meeting consumer needs, staying ahead of competitors, and aligning strengths with market opportunities, ultimately fostering business sustainability. However, Saunila et al. (2014) reveals that empirical studies examining the impact of IC on micro-enterprises, especially in emerging economies, are insufficient. Hence, this study aims to fill this deficiency.

3. THEORETICAL FRAMEWORK AND HYPOTHESIS TESTING

3.1. Internet Entrepreneurial Self-Efficacy and Sustainable Performance

According to SCT, SE is an individual’s belief in his/her capability to accomplish specific tasks (Bandura, 1986). It implies an individual’s capacity to mobilize the motivation, cognitive resources, and course of action needed to control the given situation (Baum and Locke, 2004; Chen et al., 1998; McGee et al., 2009b; Wood and Bandura, 1989). It is also considered a key mechanism that regulates an individual’s performance (Wood and Bandura, 1989). Moreover, SE is regarded as a domain-specific concept that can be applied in diverse scenarios (Chen et al., 1998). Hence, in the realm of entrepreneurship, ESE has gained much importance. ESE refers to the belief in an individual’s ability to accomplish entrepreneurial tasks by establishing challenging goals, displaying persistence, investing efforts, and rapidly recovering from failure (Bandura, 1990; Boyd and Vozikis, 1994; Miao et al., 2017). Moreover, McGee et al. (2009b) indicated that entrepreneurs need not only skill and capability but also resilient self-belief in their own capabilities to accomplish desired goals. For instance, researchers prove that individuals with high ESE can create a positive expectation regarding future firm performance (Chen et al., 1998; McGee and Peterson, 2019; Newman et al., 2019). Moreover, numerous studies demonstrated the significant influence of ESE on firm performance in various contexts (Agnes et al., 2017; Eniola, 2020; Khalil et al., 2021; Klongthong et al., 2020; Miao et al., 2017;

Msimango-Galawe and Mazonde, 2021; Somwethee et al., 2023). Agnes et al. (2017) and McGee and Peterson (2019) revealed that entrepreneurs with high SE exhibited confidence in their ability to identify opportunities, devise strategies, manage resources, and confront uncertainty, resulting in superior firm performance. Likewise, Msimango-Galawe and Mazonde (2021) found that the subpar performance of micro-women entrepreneurs is primarily due to their low ESE. Moreover, self-efficacious entrepreneurs can successfully navigate technology volatility and competition, ensuring their business success (Cumberland et al., 2015). Other researchers also found a positive correlation between ESE and firm performance (Klongthong et al., 2020; Srimulyani and Hermanto, 2021). However, Eniola (2020) failed to draw a positive association between ESE and firm performance, as highly self-efficacious individuals may exhibit overconfidence and diminished diligence, leading to sub-optimal performance.

In this study, we explore the construct of IESE as it is related to internet entrepreneurial performance. IESE denotes an individual's belief in their ability to create a new internet business and utilize internet technology for business use (Chang et al., 2020). Yeh et al. (2021b) discovered that IESE significantly and positively impacts internet entrepreneurial performance. Moreover, (Chang et al., 2020) conducted a study among university students in Taiwan and found that IESE positively predicts online entrepreneurial intention. Hence, the study proposes that the IESE has a positive and significant impact on the sustainable performance of ME. Therefore, the following have been postulated:

H₁: IESE has a positive and significant influence on the SUSP of micro-entrepreneurs.

3.2. Internet Entrepreneurial Self-Efficacy, Social Media Usage, and Sustainable Performance

3.2.1. Internet entrepreneurial self-efficacy and social media usage

According to SCT, individuals with high SE perceive technology usage as facile and beneficial (Bandura, 1977), as they are more confident in their ability to adapt and utilize such technology and are better equipped to handle challenges that arise to accomplish their goals (Igbaria, 1995). Goodhue and Thompson (1995) indicated that SE is an internal characteristic of individuals that can directly influence the adoption and usage of technology to achieve positive outcomes. For instance, Sharma et al. (2016) reported that employee's computer self-efficacy significantly predicts the usage of cloud computation technology. Similarly, entrepreneurial characteristics (personality traits) prove to significantly influence social media adoption by micro-enterprises (Mandal, 2012). Further, Salimon et al. (2023a) revealed that internet self-efficacy significantly influences m-commerce adoption among Malaysian SMEs. Likewise, consumers' internet self-efficacy directly impacted their e-commerce usage (Hsu and Chiu, 2004). Albashrawi et al. (2020) also found that computer self-efficacy positively influences students' intention to use mobile ERP solutions. However, Faqih (2013) failed to retrieve the significant connection between internet self-efficacy and e-commerce usage, as the users may lack the requisite skills to use such platforms. Based on the above, the following is hypothesized:

H₂: IESE positively and significantly influences the SMU of micro-entrepreneurs.

3.2.2. Social media usage and sustainable performance

According to RBT, the firm's competitive advantage relies on the effective use of its bundle of productive resources (Barney, 2001). These resources include "assets, capabilities, organizational processes, company attributes, information, knowledge, etc." which are considered valuable, rare, inimitable, and distinctive, capable of achieving superior organizational performance (Barney, 2001; Elia et al., 2021). Moreover, Barney (2001) indicate that devices and information processing systems deeply embedded in both formal and informal decision-making can be viewed as potential resources for achieving sustainable performance. Hence, social media is considered an effective organizational resources that assist small businesses in attaining a competitive advantage (Elia et al., 2021; Fan et al., 2021; Fitriani et al., 2023; Olanrewaju et al., 2020; Tajvidi and Karami, 2021). Further, RBT theory proved to serve as the foundation for the link between social media and their value for the firm (Fan et al., 2021; Fitriani et al., 2023; Tajvidi and Karami, 2021). Hence, this study adopts RBT theory to analyze the influence of social media usage on the sustainable performance of ME.

Social media usage is regarded as an antecedent of organizational performance (Chatterjee and Kumar Kar, 2020; Odoom et al., 2017; Qalati et al., 2022; Solomon et al., 2023). It is considered a pivotal strategy to achieve organizational sustainability (Bruce et al., 2022). Chatterjee and Kumar Kar (2020) indicated that SMU enhances the performance of Indian SMEs, as it provides cost-effectiveness and network externalities. Similarly, Fitriani et al. (2023) conducted a study among micro e-commerce businesses and found that SMU positively impacts their digital performance by instilling deep confidence in consumers regarding the quality and uniqueness of products. In addition, SMU emerges as a powerful tool for marketing and networking, significantly enhancing the organization's overall performance in the hotel industry (Tajvidi and Karami, 2021). Moreover, other researchers have also identified a positive relationship between SMU and firm performance (Ali Qalati et al., 2020; Aracil-Jordá et al., 2023; Fan et al., 2021). However, Ahmad et al. (2019) and Awwab and Fontana (2022) failed to draw a positive correlation between SMU and the firm's sustainable performance. Based on the above, the following is hypothesized:

H₃: SMU positively and significantly influences the SUSP of micro-entrepreneurs.

3.2.3. Mediating role of social media usage

Prior research established the direct relationship between ESE – SMU (Albashrawi et al., 2020; Mandal, 2012; Salimon et al., 2023a) and ESE - SUSP (Klongthong et al., 2020; Newman et al., 2019; Yeh et al., 2021b) but very few studies have examined SMU as a mediator (Ali Qalati et al., 2020; Fan et al., 2021). Ali Qalati et al. (2020) examined the mediation effect of SMU in the relationship between ESE and firm performance. Similarly, Fan et al. (2021) used social media to mediate the association between entrepreneurial orientation and firm performance. Moreover, previous research suggests exploring the mechanisms influencing the direct relationship between ESE and organizational performance. Since entrepreneurial attributes alone are insufficient for small business to improve their performance, they should seek

additional support by utilizing resources such as social media (Ali Qalati et al., 2020; Fan et al., 2021). Hence, it is proposed that IESE enhances ME performance through the indirect effect of SMU. Based on the above discussions, the following is postulated: H_4 : SMU mediates the relationship between IESE and SUSP of micro-entrepreneurs.

3.3. Internet Entrepreneurial Self-Efficacy, Innovation Capability, and Sustainable Performance

3.3.1. Internet entrepreneurial self-efficacy and innovation capability

According to SCT, individuals with high SE lead to innovative behavior (Bandura, 1986). This implies that ESE enables entrepreneurs to gain confidence in their ability and skills to generate and implement ideas (McGee and Peterson, 2019). Moreover, self-efficacious entrepreneurs can effectively face challenges and uncertainty when developing and implementing new ideas (Wei et al., 2020). Further, Newman et al. (2018) argue that individuals with high SE can perceive challenges as opportunities and persist when faced with setbacks. Hence, the study adopts SCT to analyze the influence of IESE on the innovation capability of ME.

Numerous studies revealed that ESE is a crucial aspect that influences IC (Ahlin et al., 2014; Hmieleski and Corbett, 2008; Neumeyer et al., 2019; Norena-Chavez and Guevara, 2020; Wei et al., 2020). It is a personal strength that influences organizational innovation (Ahlin et al., 2014b; Scott & Bruce, 1994). For instance, Wei et al. (2020) found that ESE significantly influences IC. Similarly, Caines et al. (2019) indicated that ESE enables individuals to set innovative goals and strategies compared to those with low ESE. Conversely, Klongthong et al. (2020) retrieved the negative influence of ESE on IC, as several other factors may influence the latter. In light of the aforementioned discussion, the following is postulated:

H_5 : IESE has a positive and significant influence on the IC of micro-entrepreneurs.

3.3.2. Innovation capability and sustainable performance

IC is regarded as a significant antecedent of firm performance, especially in the context of small business in emerging economies (Fang et al., 2022; Heenkenda et al., 2022; Imran et al., 2019; Saunila et al., 2014). This is grounded in RBT, which asserts that organizations should develop various capabilities to enhance their performance, resulting in a sustainable competitive advantage (Barney, 2001). Moreover, Heenkenda et al. (2022) asserted that IC boosts SME performance by attaining competitive advantage and ensuring long-term success. Similarly, innovative firms tend to exhibit higher levels of financial and operational sustainability (Kafetzopoulos and Psomas, 2015). Several empirical studies also found a positive correlation between IC and firm performance (Fan et al., 2021; Imran et al., 2019; Thornhill, 2006). However, the majority of the academic work focuses on the IC of big firms, and the outcomes of such studies are limited in their relevance to micro-enterprises. Hence, Taleb et al., (2023) emphasized the significance of IC micro-enterprise performance in developing countries, as IC is considered a multifaceted construct that differentiates small and large enterprises (Saunila, 2019). Consistent with the above discussions, the following is postulated:

H_6 : IC has a positive and significant influence on the SUSP of micro-entrepreneurs.

3.3.3. Mediation role of innovation capability

Although ESE significantly influences firm performance (Klongthong et al., 2020), its effects can be exponentially enhanced when combined with appropriate capabilities (Imran et al., 2019; Newbert, 2008). This aligns with RBT, which posits that an organization must effectively integrate diverse resources (IESE) and capabilities (IC) in varying degrees to achieve superior performance and gain a competitive advantage (Barney, 2001; Imran et al., 2019; Umar et al., 2018). Hence, the present study proposed that IESE must be complemented with appropriate IC to achieve the business sustainability of ME. Moreover, AlKoliby et al. (2023) revealed that IC positively mediates the relationship between entrepreneurial competencies and the sustainability of SMEs. Similarly, Somwethee et al. (2023) examined the mediation role of IC in the association between entrepreneurial capability and sustainable performance and demonstrated that firms possessing efficient entrepreneurial resources can enhance innovation capacity, resulting in improved performance. Based on past research findings, the following is postulated:

H_7 : IC positively mediates the relationship between IESE and SUSP of micro-entrepreneurs.

3.4. Social Media Usage and Innovation Capability

SMU is regarded as a pivotal and affordable component to enhance the IC of small enterprises (Al-Shami et al., 2021; Awwab and Fontana, 2022; Tajvidi and Karami, 2021). It is perceived as an imperative platform that facilitates building relationships, information dissemination (Saputra et al., 2021), efficient communication (Hassani et al., 2021), and worker engagement (Awwab and Fontana, 2022), resulting in innovative performance within the organization. Additionally, Beninger et al. (2016) revealed that SMU micro-entrepreneurs by providing needed resources such as innovative and creative ideas. Moreover, Tajvidi and Karami, (2021) concluded that social media platforms can enhance organizational performance, but their performance can be further improved if a firm develops its innovation capability. This aligns with RBT, which suggests that organizations should leverage their internal resources and capabilities to achieve competitive advantage and superior performance (Barney, 2001). Conversely, Freixanet et al. (2021) asserts that the augmentation of IC transcends mere social media usage, as it is contingent upon additional factors such as entrepreneurial attributes. Consistent with the above, the following is postulated:

H_8 : SMU has a positive and significant influence on the IC of micro-entrepreneurs.

3.5. The Serial Mediation Role of SMU and IC on the relationship between IESE and SUSP

Preceding discussions supported the linkage between IESE-SMU (Sharma et al., 2016), SMU-IC (Al-Shami et al., 2021), IC-SUSP (Heenkenda et al., 2022), and IESE-SUSP (Yeh et al., 2021b). Moreover, SCT suggests that a strong ESE enables entrepreneurs to effectively adopt and use technology (social media in this case) and innovative practices that contribute to sustainable performance (Bandura, 1977; McGee and Peterson, 2019; Sharma et al., 2016).

Additionally, RBT asserts that organizations should exploit their resources and capabilities (social media and IC) to achieve competitive advantage and superior firm performance (Al-Shami et al., 2021; Barney, 2001; Salimon et al., 2023b; Tajvidi and Karami, 2021). Based on the above theoretical framework, the study anticipated a serial mediation role of SMU and IC on the relationship between IESE and SUSP of ME (Figure 1). Therefore, the following proposition is postulated:

H₃: SMU and IC serially mediate the relationship between IESE and SUSP of micro-entrepreneurs.

4. METHODOLOGY AND DATA

4.1. Measures

To evaluate the above hypotheses, scales from prior studies were adopted to measure the constructs, using a five-point Likert scale (1 = strongly disagree and 5 = strongly agree). IESE is assessed using seven items adapted from Wang et al. (2019). To measure the IC, four items were adapted from (Fang et al., 2022; Panayides, 2006; Zhao et al., 2021). The SMU is measured based on nine items from (McCann and Barlow, 2015; Michaelidou et al., 2011; Parveen et al., 2016). Finally, SUSP is measured as a higher-order construct (HOC) with three lower-order constructs (LOC), such as EP - 4 items, SP- 3 items, and EVP- 4 items. It is designed as a formative second-order construct, and the items were adopted from (Alipour et al., 2019; Laosirihongthong et al., 2013; Paulraj, 2011).

4.2. Sampling and Data Collection

The population of this study was micro-entrepreneurs in the food, fashion, and handicraft sectors in Kerala, India. Due to the lack of a sampling frame, a purposive sampling technique was used to identify the ME based on two criteria: (I) the use of at least one social media platform for business (WhatsApp, Facebook, and Instagram) and (II) having less than ten employees (UNDESA 2020; Osakwe & Ikhide, 2022; Srimulyani & Hermanto, 2021). The survey was conducted using a Google form from July 2024 to November 2024.

Regarding the sample size, a minimum of 300 samples is considered adequate for PLS-SEM (Henson and Roberts, 2006). Additionally, item: response criteria asserts that the response should lie between 1:10 and 1:14 (Deb and Lomo-David, 2014). In the present study, the number of items pertains to 31; hence,

the sample size should be between 124 and 310. Based on the above, the study has examined 325 micro-entrepreneurs. Data collection was conducted using a structured questionnaire. Also, the scales are adopted from the previous studies; they are presumed to have content validity (Ince et al., 2023). Before the final questionnaire was administered, a pilot study with 75 respondents was conducted, and reliability and validity were assessed.

4.3. Respondent's Profile

The respondent's profile (Table 1) reveals that most of the ME were female, aged between 25 and 35, consistent with the study of Abed (2020). Regarding educational qualification, 92% have bachelor's or master's degrees, which is similar to the findings of (Almeida, 2024). Regarding the industry, 71% are engaged in the fashion sector, possessing between 1 and 5 years of experience; this is similar to the findings of Qalati et al. (2022). Finally, regarding social media platform usage, 65% of MEs use Instagram for their business purposes.

5. RESULTS

5.1. Measurement Model

To verify the absence of common method bias (CMB), the partial least square structural equation model (PLS-SEM) was used to ascertain whether all the inner variance inflation factor (VIF) values are lower than 3.3 at the factor level (Kock, 2015). The results indicate that all values are lower than the threshold limit of 3.3, which indicates the absence of CMB.

The PLS-SEM, regression-based method was employed to test the hypothesis to maximize the explained variance in the dependent variable. In addition, this study seeks to examine the relationship between IESE and SUSP, specifically through the serial mediation effect of SMU and IC, which supports the use of PLS. Moreover, PLS is capable of analyzing both reflective and formative constructs while concurrently assessing the measurement and structural models (Hair et al., 2015), further justifying the application of PLS-SEM.

5.2. Evaluation Reflective Measurement Model

The reflective measurement model was evaluated by determining the construct's reliability and validity (Hair et al., 2015). The

Figure 1: Conceptual framework

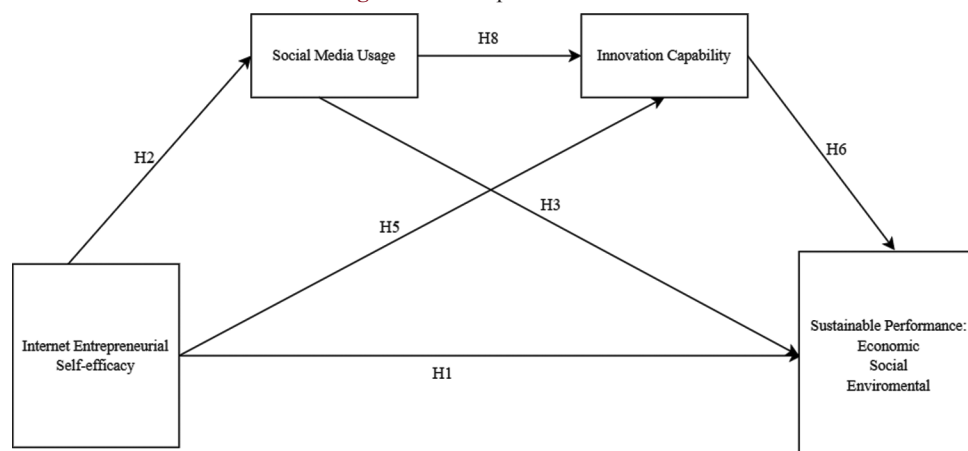


Table 1: Demographic details

Demographic Variable	Frequency	Percentage
Gender		
Male	117	36
Female	208	64
Others	0	
Age		
<25	44	14
25-35	215	65
36-45	50	15
>45	18	6
Education Level		
Intermediate and below	16	5
Graduate	151	46
Post Graduate	149	46
Others	9	3
Product category		
Fashion	229	71
Food	62	19
Handcrafts	34	10
Firm Age		
<1	78	24
1-5 years	182	56
>5	65	20
Years using the social media platform		
<1	82	25
1-5 years	203	62
>5	40	13
Social Media Platform		
Instagram	212	65
WhatsApp	62	19
Facebook	43	13
YouTube	8	3

Table 2: Assessment of measurement model

Construct	Loading	CA	CR	AVE
Internet entrepreneurial self-efficacy				
IESE1	0.616	0.864	0.889	0.541
IESE2	0.670			
IESE3	0.703			
IESE4	0.844			
IESE5	0.816			
IESE6	0.733			
IESE7	0.720			
Social media usage				
SMU1	0.842	0.919	0.935	0.638
SMU2	0.812			
SMU3	0.814			
SMU4	0.786			
SMU5	0.743			
SMU6	0.714			
SMU7	0.791			
SMU8	0.737			
SMU9	0.812			
Innovation capability				
IC1	0.895	0.733	0.885	0.661
IC2	0.857			
IC3	0.854			
IC4	0.616			
Sustainable performance (HOC)				
Economic performance				
EP1	0.856	0.838	0.919	0.739
EP2	0.873			
EP3	0.871			
EP4	0.837			
Social performance				
SP1	0.840	0.797	0.885	0.72
SP2	0.832			
SP3	0.872			
Environmental performance				
EVP1	0.669	0.743	0.832	0.555
EVP2	0.825			
EVP3	0.712			
EVP4	0.765			

results indicated (Table 2) that all the loadings are above the threshold limit of 0.6 (Hair et al., 2015) while composite reliability (CR) and Cronbach alpha (CA) exceeded the cut-off limit of 0.7 (Hair et al., 2015), hence confirming construct reliability. The construct validity was assessed using convergent and discriminant validity. Convergent validity is the extent to which a measure correlates positively with the alternative measures of the same construct. The findings show (Table 2) that all the Average Variance Extracted (AVE) values are above the threshold limit of 0.5 (Hair et al., 2015), thus confirming convergent validity (Figure 2).

The discriminant validity is the degree to which a construct is genuinely distinct from other constructs based on empirical evidence (Hair et al., 2015). In this study, the Heterotrait-Monotrait (HTMT) criterion was used to assess discriminant validity. The findings revealed that HTMT values (Table 3) are below the threshold limit of 0.85 (Hair et al., 2015; Henseler et al., 2015), confirming that discriminant validity is achieved.

5.3. Evaluation of Formative Measurement Model (Second Order)

Sustainable performance is viewed as a higher-order formative construct (HOC), comprising the lower-order constructs (LOC) of economic, social, and environmental performance (Elkington, 1994). Hair et al. (2015) stated that the HOC construct (SUSP) can be validated by examining three parameters: multicollinearity, construct validity, and indicator reliability. Multicollinearity arises

Table 3: Assessment of discriminant validity using HTMT

Construct	EP	EVP	IC	IESE	SMU	SP
EP						
EVP	0.527					
IC	0.596	0.556				
IESE	0.493	0.446	0.509			
SMU	0.589	0.391	0.531	0.476		
SP	0.746	0.635	0.554	0.458	0.562	

when one or more predictors in the model are correlated with the response variable. It is measured using the variance inflation factor (VIF), and the results indicate that (Table 4) the VIF values are less than the threshold limit of 3.3 (Hair et al., 2015; Latif et al., 2020). Construct validity was examined using redundancy analysis, where the second-order SUSP was correlated with their single global indicator. The findings suggest that path coefficients are significant, confirming convergent validity (Hair et al., 2015). Additionally, the bootstrapping procedure for 5000 subsamples was used to analyze indicator validity (Hair et al., 2015). Indicator validity is assessed using the outer loading of the LOC. The results showed that outer loadings of EP, SP, and EVP are 0.91, 0.823, and 0.72, respectively, are higher than the threshold limit of 0.5

Figure 2: Reflective measurement model

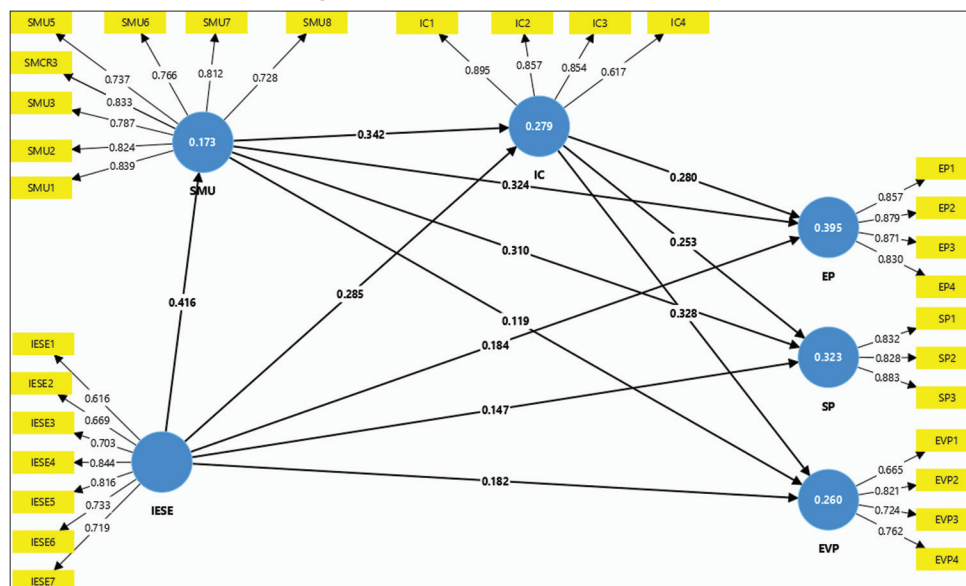


Table 4: Assessment of formative measurement model

Construct (HOC)	Indicators (LOC)	Outer weights	t-values	P-values	Outer Loading	VIF
SUSP	EP	0.583	7.161	<0.001	0.91	1.733
	SP	0.302	3.186	<0.001	0.825	1.854
	EVP	0.307	3.835	<0.001	0.719	1.388

Table 5: Structural model - direct associations

Hypothesis	Association	β	SE	t-values	R ²	Q ²	P-values	Decision
H ₂	IESE->SMU	0.43	0.052	8.237	0.185	0.173	<0.001	Supported
H ₅	IESE->IC	0.273	0.052	5.211	0.285	0.176	<0.001	Supported
H ₁	IESE->SUSP	0.205	0.055	3.76	0.472	0.221	<0.001	Supported
H ₈	SMU->IC	0.356	0.053	6.726			<0.001	Supported
H ₃	SMU->SUSP	0.315	0.058	5.462			<0.001	Supported
H ₆	IC->SUSP	0.339	0.057	5.915			<0.001	Supported

Table 6: Serial mediation results

Hypothesis	Association	β	SE	t-value	P-value	Decision
H ₄	IESE->SMU->SUSP	0.135	0.029	4.627	<0.001	Supported
H ₈	IESE->IC->SUSP	0.093	0.024	3.868	<0.001	Supported
H ₉	IESE->SMU->IC->SUSP	0.052	0.012	4.181	<0.001	Supported

(Hair et al., 2015). Hence, multicollinearity, construct validity, and indicator validity are confirmed, resulting in the validation of HOC, i.e., sustainable performance.

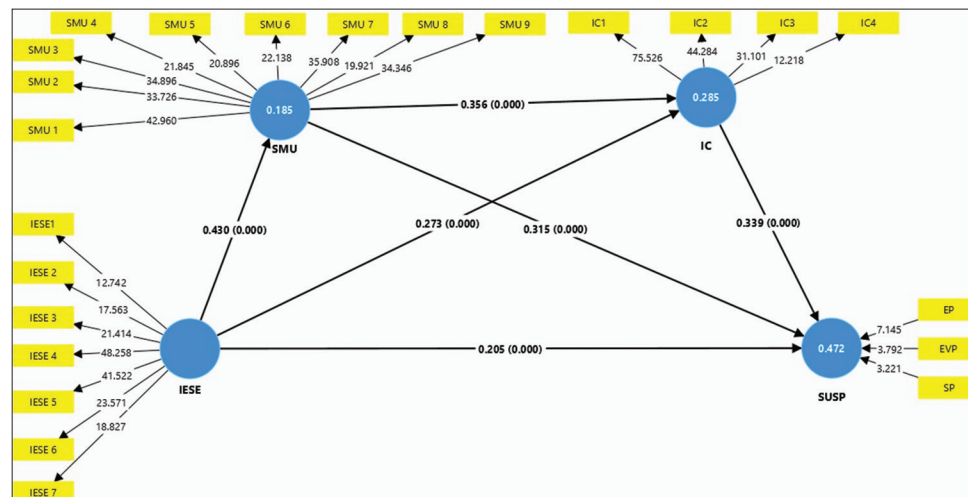
5.4. Assessment of Structural Model

Structural model assessment is based on path coefficient (β), coefficient of determination (R^2), and predictive relevance (Q^2) (Hair et al., 2015). The bootstrapping method, with a re-sampling of 5000, was executed to assess the significance of the path coefficient (Hair et al., 2015). The findings (Table 5) indicate that IESE has a strong positive correlation with SMU ($\beta = 0.43$, $t = 8.236$, $P < 0.001$), IC ($\beta = 0.427$, $t = 8.944$, $P < 0.001$), and SUSP ($\beta = 0.205$, $t = 3.76$, $P < 0.001$), hence empirically supporting H₂, H₅, and H₁. Moreover, SMU has a substantial and positive association with IC ($\beta = 0.356$, $t = 0.053$, $P < 0.001$) and SUSP ($\beta = 0.315$, $t = 5.506$, $P < 0.001$), confirming H₈ and H₃. Furthermore, a positive

and significant correlation exists between IC and SUSP ($\beta = 0.431$, $t = 5.989$, $P < 0.001$), supporting H₆.

The explanatory power of the model was assessed using R^2 values. According to Cohen (1988), the R^2 values of 0.26, 0.13, and 0.3 indicate substantial, moderate, and weak influence, respectively. The results from the PLS algorithm reveal that IESE has a moderate influence on SMU (18.5%) and a substantial influence on IC (28.5%) (Table 5). In addition, the combined influence of IESE, SMU, and IC accounts for a significant amount of variation in SUSP (47.2%). Hence, these variables demonstrate considerable explanatory power. Finally, the blindfolding approach was employed to assess the predictive relevance. The results indicate that Q^2 values exceed zero (Hair et al., 2015). Therefore, the predictive power of the model is confirmed.

Figure 3: Structural model



5.5. Assessment of Serial Mediation

The serial mediation role of SMU and IC on the relationship between IESE and SUSP, was assessed on the basis of specific indirect effect (Table 6). For this, the researcher employed the bootstrapping method, generating 5000 subsamples to calculate the path coefficient, standard error, t-statistics, and P-values (Hair et al., 2015). The results indicate that (Table 6) the indirect effect of SMU between IESE and SUSP ($\beta=0.135$, $t=4.627$, $P<0.001$) is statistically significant, confirming H_7 . Similarly, the indirect effect of IC between IESE and SUSP ($\beta_2=0.093$, $t=3.868$, $P<0.001$) is also statistically significant, supporting H_8 . This suggests that SMU and IC partially mediate the relationship between IESE and SUSP. Finally, the indirect effect of SMU and IC between IESE and SUSP ($\beta=0.052$, $t=4.181$, $P\leq 0.001$) is statistically significant (Table 6), hence validating the serial mediation role of SMU and IC in the link between IESE and SUSP and confirming H_9 (Figure 3).

6. CONCLUSION

The study explores the determinants influencing the SUSP of ME. The results yield that IESE, SMU, and IC significantly influence the SUSP of ME. Furthermore, SMU and IC serially mediate the relationship between IESE and SUSP. Moreover, the present study offers a comprehensive understanding of the antecedents influencing the SUSP of ME in developing economies.

The findings reveal that IESE positively and significantly influences the SUSP, SMU, and IC of micro-entrepreneurs. Thus, supporting H_1 , H_2 , and H_3 respectively. This implies that micro-entrepreneurs perceive IESE as an important attribute that enhances their social media usage, innovation, and firm performance. This aligns with SCT and is consistent with the findings of (Agnes et al., 2017; Albashrawi et al., 2020; Chen and Zhou, 2017; Klongthong et al., 2020; Norena-Chavez and Guevara, 2020; Salimon et al., 2023a; Sharma et al., 2016; Wei et al., 2020; Yeh et al., 2021b) arguing that IESE is an essential cognitive element in achieving micro-entrepreneurial sustainability in developing countries.

Additionally, SMU has a positive influence on the IC and SUSP, confirming H_3 and H_8 . This infers that micro-entrepreneurs who

utilize social media can generate innovative ideas, enhance creative performance, and improve the effectiveness of firm performance in online contexts. These findings align with RBT and are similar to the findings of (Al-Shami et al., 2021; Awwab and Fontana, 2022; Bruce et al., 2022; Chatterjee and Kumar Kar, 2020; Tajvidi and Karami, 2021) denoting that social media offers a platform for micro-enterprises to initiate innovative practices and superior firm performance in emerging economies.

Similarly, IC has a positive and significant influence on the SUSP, confirming H_6 . The findings indicate that micro-entrepreneurs perceive that the stronger the IC, the higher the organizational sustainability, emphasizing RBT. Moreover, these results are similar to the outcomes of (Fang et al., 2022; Heenkenda et al., 2022; Özmutaf et al., 2015) arguing that micro-entrepreneurs should endorse innovation in business operations, leading to achieving competitive advantage in emerging economies.

Further, the results revealed that SMU partially mediates the association between IESE and SUSP, supporting H_4 . This implies that micro-entrepreneurs with stronger IESE utilize social media for their business operations, enhancing the performance of their enterprise. This is consistent with prior findings of (Ali Qalati et al., 2020; Fan et al., 2021; Qalati et al., 2022), indicating that SMU mediates the link between entrepreneurial attributes and SME performance in developing economies.

Similarly, IC partially mediates the link between IESE and SUSP, confirming H_7 . This infers that micro-entrepreneurs presume IESE and IC as significant entrepreneurial capabilities to achieve the sustainable performance of their online venture. This aligns with RBT and is consistent with the findings of (AlKoliby et al., 2023; Hwang et al., 2020; Somwethee et al., 2023) stating that the IC mediates the relationship between ESE and organizational performance.

Finally, the findings revealed that the SMU and IC serially mediate the relationship between IESE and SUSP, confirming H_9 (IESE—SMU—IC—SUSP). This can be elucidated through RBT theory, which posits that a microentrepreneur's internal resources (IESE)

and capabilities (SMU and IC) are the fundamental determinants of their business success. Thus, the study concluded that MEs with IESE can effectively utilize social media to enhance their IC and ultimately attain their online venture sustainability in emerging countries.

6.1. Theoretical Implication

The findings contribute to the existing literature by offering a comprehensive theoretical framework integrating SCT, RBT, and TBL to explain the SUSP of online ME. This study also demonstrated that SMU and IC serially mediate the relationship between IESE and SUSP, effectively addressing the research gap. This suggests that organizational internal resources should be combined with capabilities to achieve the sustainability of micro-entrepreneurs in India. Moreover, IESE proved to be a significant antecedent in predicting technology usage, innovation potential, and performance of micro-entrepreneurs in emerging economies.

6.2. Practical Implication

This study has several noteworthy implications for managers and policymakers in various fields. Firstly, it suggests that owners/managers of micro-enterprises should pay more attention to IESE as a key factor that increases their effectiveness in using social media platforms and IC, which enhances the firm performance. Secondly, the findings provide evidence to owners by pointing out that effective use of social media increases their innovativeness and sustainable performance. Thirdly, the study suggests that IC should be considered as a critical element in attaining the superior performance of micro-enterprises. Therefore, the owners/managers of micro-enterprises could consider IESE, SMU, and IC to enhance their performance and stand out from the competition. Consequently, current findings will help policymakers to formulate policies and strategies to support micro-enterprises in emerging and developing countries. Thus, this study helps policymakers initiate developmental programs, including training, mentorship, financial aid, and other relevant factors related to the IESE to improve business performance and long-term viability.

6.3. Limitations and Future Research Directions

This study has multiple limitations that present opportunities for future investigations.

The study focused on micro-entrepreneurs in online platforms. Therefore, the results may only apply to some types of entrepreneurs, i.e., small, medium, and large. Further research should include these entrepreneurs to enhance understanding of the factors influencing the sustainable performance of entrepreneurs across different contexts.

Additionally, the study did not examine several factors that could influence the sustainable performance of micro-entrepreneurs, such as motivation factors, entrepreneurship education and training, and entrepreneurial orientation. Hence, further study should investigate these factors to provide a comprehensive understanding of the sustainable performance of micro-entrepreneurs.

This study used cross-sectional analysis to examine the hypothesis and validate the IESE- SMU- IC- SUSP relationship; hence, future

studies can employ a longitudinal approach as McGee and Peterson (2019) indicate that the effect of ESE on firm performance may be mitigated over time.

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