
A Social Cognitive Career Theory Perspective on the Impact of Digital Entrepreneurship Education on Digital Entrepreneurship Intention Among University Students

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Abstract

As universities integrate digital entrepreneurship education into their curricula, there is an assumption that equipping students with digital entrepreneurial skills will naturally increase their intention to pursue digital ventures. However, this process is influenced by multiple factors beyond education alone, prompting the need to understand how digital entrepreneurship education influences students' digital entrepreneurial intention. This concept paper explores the suitability of Social Cognitive Career Theory as a framework to explain how digital entrepreneurship education enhances students' self-efficacy and perceived feasibility of digital entrepreneurship. It also examines the extent to which students' intentions are influenced by expectations of financial success and career opportunities, and the impact of environmental factors such as digital infrastructure, mentorship, institutional policies, and funding. Through a critical review of existing literature, this paper highlights how digital entrepreneurship education interacts with personal factors such as self-efficacy, prior digital experience and financial stability and contextual supports such as access to entrepreneurial networks and institutional resources to influence entrepreneurial outcome. The Social Cognitive Career Theory provides a comprehensive lens to analyze the dynamics of these factors in the students' digital entrepreneurial decision-making process. This paper concludes by offering recommendations to policymakers and educators in designing more inclusive and effective digital entrepreneurship education initiatives. Addressing structural inequalities and providing targeted support ensures that digital entrepreneurship education provide equal opportunities to all studies, regardless of background.

Keywords: *Digital entrepreneurship education; Digital entrepreneurial intention; Higher education; Self-efficacy; Social Cognitive Career Theory*

I. INTRODUCTION

The world is in the throes of digital transformation, accelerated by the disruptive technologies of the Fourth Industrial Revolution (IR4.0). Building on the premise that digital transformation could 'unlock a 100 trillion dollars for business and society', mentioned during the 2015 launching of the 'Digital Transformation Initiative' by the World Economic Forum [1], the transition into IR4.0 driven by a digital technology-based economy, has become imperative. Henceforth, the rapid digital transformation of the global economy has also positioned Digital Entrepreneurship (DE) as a key driver of innovation and economic growth [2]. DE

leverages digital technologies to create and manage businesses, allowing entrepreneurs to operate beyond traditional geographic and financial constraints [3,4].

A. Background

The emergence of DE has undeniably become a game-changer in contemporary business landscape. In recent years, the growth of new businesses among the younger generation is a clear indication of the crucial role of DE in creating opportunities for entrepreneurs. The Asia-Pacific Small Business Survey 2023-24 by CPA Australia, highlights that young entrepreneurs are driving innovation and technology adoption, with 61 per cent of business

owners in Malaysia under the age of 40, and 49 per cent of the entrepreneurs agreeing that investment in technology has led to increased profitability [5].

Recognizing DE's potential to provide employment to graduates and sustain its significant contribution to economy, higher education institutions have integrated Digital Entrepreneurship Education (DEE) into their curricula to equip students with the necessary entrepreneurial, technological and business skills to succeed in the digital economy [6,7]. DEE becomes a necessity to develop entrepreneurs with future-oriented entrepreneurial attitude and behaviour, blend with familiarity and expertise in the use of information and communication technologies [8].

B. Problem Statement

Notably, DEE intends to foster digital entrepreneurial intention (DEI) by equipping students with the competencies necessary to thrive in the digital entrepreneurial landscape. Despite these efforts, the translation of DEE into actual DEI among university students is still inconsistent and inadequately understood. DEE might be widely acknowledged as a catalyst for fostering entrepreneurial mindsets [9-11], but there is still a lack of clarity regarding the underlying factors that influence this relationship. Specifically, existing studies often neglect to examine the cognitive and psychological mechanism such as self-efficacy, motivation and outcome expectations, as well as structural aspects such access to digital infrastructure, feasibility of digital ventures and financial resources [12-14]. This gap is particularly important in the Malaysian context, where the government is actively pushing for youth entrepreneurship amidst a vibrant IR4.0 scenario [15]. The absence of a clear framework to understand how DEE influence DEI might challenge universities in designing effective interventions that foster genuine entrepreneurial readiness among students. Therefore, it is imperative to explore and conceptualize these underlying factors by using robust theoretical lens such as Social Cognitive Career Theory (SCCT), to provide a comprehensive understanding of the pathways linking DEE to DEI in Malaysian universities.

C. Aims and Objectives

This paper aims to examine the relevance of SCCT in explaining how DEE influences DEI among university students in Malaysia, by conceptualizing the key cognitive and psychological factors as well as structural factors that link DEE to DEI, and proposing a theoretical model to illustrate these pathways. The specific objectives of the paper are:

- (a) to explore the relevance and applicability of SCCT in understanding the relationship between DEE and DEI among university students;
- (b) to identify and conceptualize the cognitive, psychological and structural factor that link DEE to DEI; and
- (c) to develop a theoretical model grounded in SCCT that explains the pathways through which DEE fosters DEI, specifically in the context of Malaysian universities.

II. LITERATURE REVIEW

This section explores and explain about DEE and DEI as well as the relevance of SCCT as the underlying theory to link DEE with DEI. Based on review of past studies, the research gaps are identified, resulting in the recommendations of factors that are aligned with SCCT to explain the pathways from DEE to DEI with a comprehensive conceptual framework.

A. Digital Entrepreneurship Education

The increasing digitization of the global economy has led to the rise of DE in practice and the crucial need for DEE in higher education institutions. DE reflects an emergent phenomenon where entrepreneurs harness digital resources and platforms such as the internet, social media, mobile devices and e-commerce to identify and capitalize on entrepreneurial opportunities [16]. The development of digital tools must evolve alongside entrepreneurial education, whereby technology needs to be integrated into entrepreneurial teaching methods and materials.

DEE is defined in [10] as the process of conveying essential knowledge and skills to individuals to successfully start and manage a digital business. Thus, DEE requires the integration of traditional entrepreneurship principles with digital innovations such as e-commerce, fintech, artificial intelligence, and platform-based business models. DEE is delivered through diverse methodologies using various digital platforms [11]. Past research [17,18] mentioned that DEE provides the knowledge and skills required to perform DE. Hence, in the context of higher education, DEE is highly relevant in both contemporary academic and professional domains [11]. Universities have incorporated entrepreneurial simulations, startup incubators, and digital venture-building programs to equip students with hands-on experience in launching digital businesses after they graduate or even while still studying [19-21].

B. Digital Entrepreneurial Intention

In order to gain a comprehensive understanding of entrepreneurial behaviour among individuals, it is crucial to examine their entrepreneurial intention [10, 22]. However, the concept of DEI is not easily defined. Generally, DEI is defined as the tendency or drive of an individual to engage in entrepreneurial activities, specifically in digital space [23]. This definition was agreed by [24], adding that digital business may encompass technology-related resources such as the Internet, the World Wide Web, mobile technologies, to name a few. Nevertheless, this definition was disagreed by [25] who claimed that the resources reflect an Internet entrepreneurship process, or referring to a more specific form of e-commerce but does not entail digital entrepreneurship. The definition of DEI was clarified by [26] and [27] who related DEI to the mental state of the individual during the establishment of a digital business through creation of digital values. In the context of university students, DEI is defined as the cognitive predisposition of a student to actively pursue or opt a career in digital entrepreneurship [28].

The necessity of understanding and determining DEI lies in its role as a powerful predictor of entrepreneurial behaviour, serving as a prerequisite before any entrepreneurial endeavours are realized [29-31]. This implies that DEI is the first step in the entrepreneurial process, without which, any entrepreneurial moves are not made possible [32]. In past studies, DEE has been linked to DEI and considered as a significant contributor towards anchoring one's preference for a digital entrepreneurial career [9,10,12,23]. However, the link between DEE and DEI is not straightforward as other factors interplayed across their pathways [10,12,13,33]. Personality [34,35], psychological [10, 33], environment [36] and structural [37,38] factors are some of the key variables that might contribute to explain the link between DEE and DEI.

C. Social Cognitive Career Theory

SCCT is a relatively new theory developed by Lent and his associates in 1994 which has its foundational ideas from Bandura's Social Cognitive Theory [39]. Bandura's theory is based on cognitive and motivational processes which have been used across many fields of studies. Meanwhile, SCCT extended Bandura's theory and as shown in Figure 1, this theory incorporates various concepts such as interests, abilities, values, and environmental factors which have potential effects on career development [40]. SCCT provides a useful framework for understanding how individuals, environmental and

cognitive factors shape career intention, including DE. Based on the theory, there are three key mechanisms that influence DEI.

Firstly, entrepreneurial self-efficacy (ESE) whereby DEE offered to university students can improve their self-efficacy by providing business experience [22]. However, prior exposure to technology plays a crucial role too. Students with backgrounds in digital content creation, coding, or marketing develop higher self-efficacy compared to those with limited digital experience [41,42].

Secondly, contextual supports and barriers are reflected by the availability of institutional resources, such as startup incubators, funding programs, and industry partnerships, which can significantly impact on how students transition from learning to action [38, 43]. Universities and policymakers must address structural challenges to ensure that DEE benefits all students.

Thirdly, outcome expectations refer to the students' perception of digital entrepreneurship as a viable career path depends on anticipated financial success and job security [44-46]. However, research shows that students from marginalized backgrounds face greater uncertainty about digital business outcomes, which may reduce their entrepreneurial intention [47].

Hence, SCCT offers a strong explanation on how DEE fosters DEI through self-efficacy and outcome expectations. However, studies highlight that not all students experience these benefits equally. Limited digital access, lack of mentorship, and socio-economic barriers contribute to disparities in engagement with digital entrepreneurship.

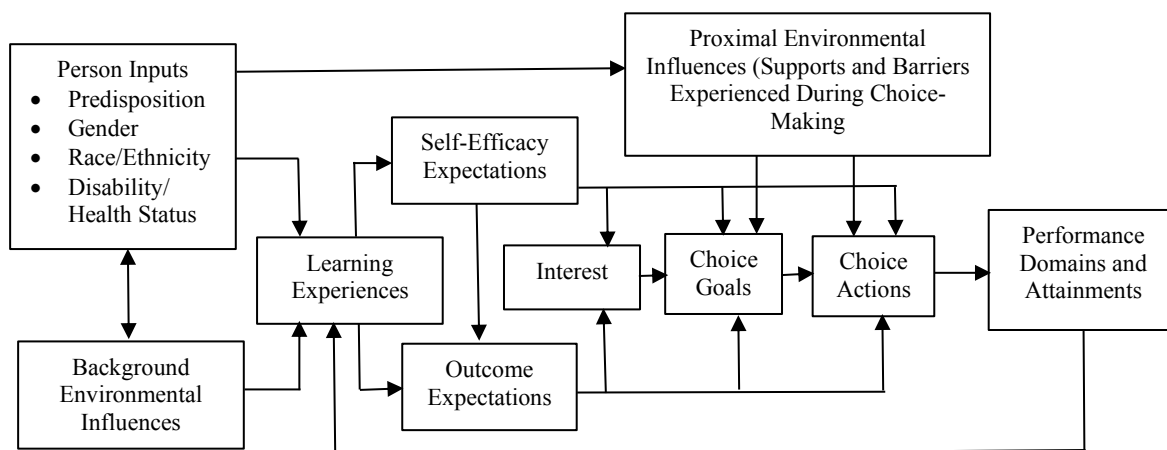


Figure 1 An Illustration of SCCT [40]

D. Research Gap

The review of literature in this paper identified a few research gaps that merit attention and should be considered in future research. Firstly, it is undisputable that DEE has the potential to increase DEI but existing studies often overlook the internal psychological mechanisms involved. For instance, self-efficacy may have garnered much attention in past studies but its role combined with motivation and outcome expectations are still not sufficiently explored. There are still conflicting ideas and limited empirical evidences on how these variables work to ensure DEE leads to higher DEI, particularly in the Malaysian context.

Secondly, although studies on DEE focus on curriculum design and skills acquisition, but there are areas pertaining to structural and contextual barriers still underexplored. This includes factors like access to digital infrastructure, mentorship and guidance availability, and institutional policies and funding accessibility. These factors, though considered as key variables in SCCT, are lacking empirical evidences, especially in developing country contexts.

Thirdly, the assumption that DEE is universally effective and accessible is challenged. More studies are needed to understand how proximal environmental influences such as support structures and barriers during choice-making influence equitable access to DE opportunities. There is still a dearth of information on DEI among

marginalized groups due to the role of gender, ethnicity and socioeconomic status as barriers to DE opportunities.

SCCT presents as a robust framework to explain career-related decisions, and clearly positions DEE as an important element of DEI but, there are also studies using other theories such as the Theory of Planned Behavior, Entrepreneurial Event Model, and Technology Acceptance Model. There is a lacking in empirical studies applying SCCT, specifically DEI in the context of higher education.

Further to that, there has been a rising number of studies on DEE and DEI globally but there is limited research focusing on Malaysia's university students. With the dynamic changes in the IR4.0 setting, challenges and opportunities arising from the policy landscape, digital ecosystem and educational practices in Malaysia have not been fully understood. This calls for more research to design and develop localised models and frameworks of utilizing DEE to foster DEI among university students, based on the unique socio-cultural and economic dynamics in Malaysia.

Another apparent gap identified in this study is the limitation of data on longitudinal effects of DEE on students' actual entrepreneurial behaviour. Despite the increased initiatives of integrating DEE into university curricula, empirical validation of DEE is still inconclusive. Moreover, there is a need to conduct more quantitative and

qualitative research to identify which elements of DEE such as simulations, mentorship, funding opportunities and incubation programs, are most effective in promoting DEI among university students.

Additionally, the role of students' prior exposure to digital technologies such as coding, digital marketing, content creation, among others, have been associated with self-efficacy. Nevertheless, there is still a lacking in studies to assess this moderating effect on the relationship of DEE and DEI.

Lastly, the significance of outcome expectations in SCCT have also been quite neglected in past studies. These outcome expectations which identify financial success and career stability as the benefits of DE are understudied. Although there is a growing emphasis factors such as perceived risks of failure, uncertainty of income stability, job security, entrepreneurial anxiety, further research is needed to provide deeper insights, particularly, given the highly dynamic nature of the DE ecosystem.

III. CONCEPTUAL FRAMEWORK

The conceptual framework presented in Figure 2 is developed to address the critical gaps that were identified in existing literature on DEE and DEI. By using SCCT as the underlying theory, this framework integrates cognitive, psychological, structural and contextual variables to explain the pathways through which DEE influences DEI among university students. The framework emphasizes the roles of digital entrepreneurial self-efficacy, outcome expectations, structural supports and barriers, and individual prior digital experience, which have been relatively underexplored in previous studies.

The conceptual framework shows that DEE directly influences digital entrepreneurial self-efficacy and outcome expectations. Meanwhile, digital entrepreneurial self-efficacy and outcome expectations have direct influence on DEI. Besides that, digital entrepreneurial self-efficacy and outcome expectations also mediate the relationship of DEE and DEI. Prior digital experience moderates the relationships of DEE with digital entrepreneurial self-efficacy and outcome expectations. The contextual supports and barriers comprising of access to digital access, mentorship and university support are moderators to the relationship between digital entrepreneurial self-efficacy and DEI.

IV. IMPLICATIONS

This study challenges the assumption that DEE is universally accessible and effective. The review of literature highlights the need for a more holistic approach to understand the impact of DEE on DEI among university students. By applying SCCT, emphasizes the roles of psychological, structural, and institutional factors to influence students' ability to engage in digital entrepreneurship. More specifically, digital entrepreneurial self-efficacy, outcome expectations, structural supports and barriers, and individual prior experience were considered in explaining the impact of DEE on DEI.

This framework provides valuable insights for policymakers, educators, and university administrators to refine DEE programs, ensuring they are inclusive and equitable. By addressing supports and barriers related to digital access, mentorship, and university support, this paper advocates for structural reforms that make DEE a true enabler of digital entrepreneurship for all students, regardless of background.

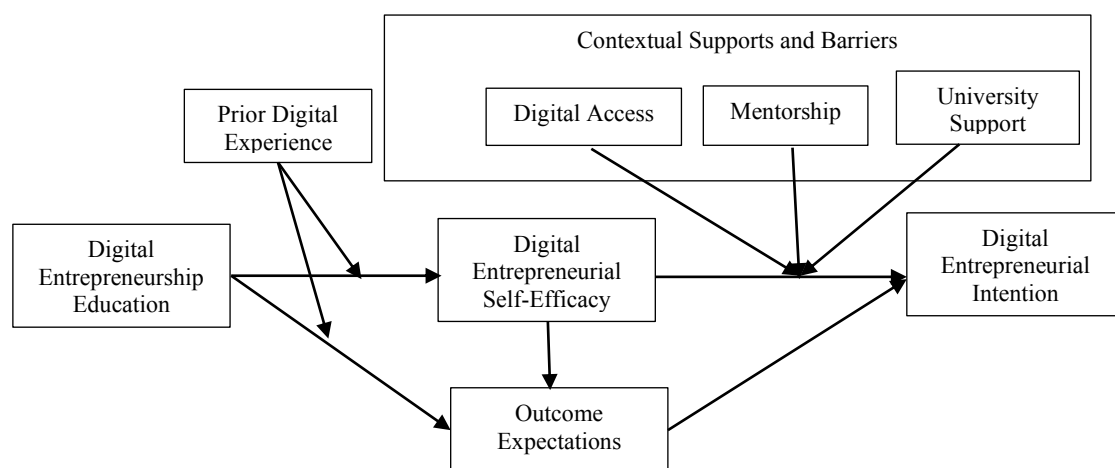


Figure 2 The Conceptual Framework

V. CONCLUSION

The critical role of DEE in fostering DEI among university students, particularly in the context of Malaysia's rapidly evolving digital economy has been highlighted in this paper. By leveraging SCCT, a conceptual framework has been proposed to integrate cognitive, psychological and structural factors to explain the impact of DEE on DEI. This comprehensive perspective offers a greater understanding on understanding DEE and its effectiveness in cultivating entrepreneurial mindsets and capabilities among diverse student population in Malaysia.

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