

International Doctoral Colloquium 2026

Conceptual Review of a Predictive Model of Intention to Choose an Information and Communication Technology Study Program through the Integration of Social Cognitive Theory and the Theory of Planned Behavior: A Study of Senior High School and Vocational High School

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Abstract. The decision of high school and vocational school students to choose an information and communication technology (ICT) study program is influenced by psychological, social, and cognitive factors. Integrating Social Cognitive Theory with the Theory of Planned Behavior provides more comprehensive framework for explaining how self efficacy, career expectations, attitudes, subjective norms, and perceived behavioral control shape students' intentions to enroll in information and communication technology programs. This review aims to analyze the literature by presenting a conceptual forecasting model and combines Social Cognitive Theory and the Theory of Planned Behavior to elucidate the purpose of senior high school and vocational high school students to select an ICT study program. The researcher utilizes a qualitative methodology specifically conducting a literature study. The approach of a literature review often restricts its focus to library resources including books, academic journal articles, and research reports. Relevant literature was systematically identified through academic databases and selected based on its theoretical and contextual relevance to the main constructs namely self efficacy, career expectations, attitude, subjective norm, perceived behavioural control, and intention. Selected studies analysed using qualitative descriptive techniques and conceptual synthesis to explain the relationships between these variables and to construct an integrated conceptual framework.

Keywords: Predictive, Intention, Self efficiency, Career, Expectation

I. Introduction

Expansion of digital technology has transformed economic structures, employment patterns, and the competency requirements of the labor market. Technological advances in artificial intelligence, data analytics, cloud computing, and digital platforms have generated increasing demand for graduates with strong digital capabilities. Information and Communication Technology (ICT) study programs have become strategically important because they contribute to the preparation of future digital talent (Aum & Shin, 2025; Petrová, 2022). Educational choice is a complex process involving cognitive evaluation, social influence, personal belief, and perceived opportunity and for senior high school and vocational high school students, this process is particularly important because they are in a transition stage in which future academic and career decisions begin to take shape (Juhaidi et al., 2025; Rosman et al., 2022). Intention has been widely recognized as a proximal predictor of actual behavior and higher education also enrollment intention refers to the willingness or readiness of prospective students to continue their studies in a particular program (Kotler & Keller, 2016). Concept of the theory closely related to behavioral intention in consumer and decision making research where intention reflects an individual's commitment to perform a future action. Previous studies on study program choice have often emphasized external determinants such as institutional reputation, cost, promotion, and career prospects however the psychological mechanisms underlying students' intention formation remain insufficiently integrated. Social Cognitive Theory (SCT) and the Theory of Planned Behavior (TPB) offer two relevant yet complementary perspectives. SCT explains how beliefs and expectations are shaped through personal and environmental interaction whereas TPB explains how attitude, subjective norm, and perceived behavioral control determine intention (Bosnjak et al., 2020; Schunk & DiBenedetto, 2021). This paper

therefore seeks to develop a conceptual predictive model of students' intention to choose an ICT study program by integrating SCT and TPB. The paper focuses on senior high school and vocational high school students because they represent a critical group in the formation of future academic pathways and potential participation in the digital talent pipeline.

II. Literature Review

Enrollment intention refers to a prospective student's readiness or willingness to pursue further study in a particular academic institution or study program. This concept is often treated as a specific form of behavioral intention because it precedes the actual act of applying, registering, or enrolling in a program in higher education research and similar to purchase intention in marketing, enrollment intention reflects an evaluative and motivational process through which individuals consider the perceived value, attractiveness, and expected outcomes of a future choice (Somantri *et al.*, 2025; Cortes *et al.*, 2023; Henderson *et al.*, 2024). ICT study programs show enrollment intention is particularly relevant because students must evaluate not only their interest in technology related fields but also their confidence in succeeding in such programs and the perceived benefits associated with future ICT careers therefore, a robust conceptual explanation of enrollment intention should incorporate cognitive, social, and behavioral dimensions (Sumo *et al.*, 2023).

Social Cognitive Theory, developed by Bandura shows that human behavior is formed through reciprocal interaction among personal factors, environmental influences, and behavior (Zhai *et al.*, 2023). Principle of this theory referred to as triadic reciprocal causation, emphasizes that individuals are active agents who can regulate, interpret, and direct their own actions rather than merely responding passively to external stimuli and core construct of SCT is self efficacy which refers to an individual's belief in his or her capability to organize and perform actions required to achieve a particular outcome (Schunk & DiBenedetto, 2021). Self efficacy is highly relevant to academic and career decision making because it shapes choice behavior, effort, persistence, and resilience. Students with stronger self efficacy are generally more likely to consider demanding academic fields as attainable and worthwhile (Li *et al.*, 2023). SCT another related construct is career expectations or outcome expectations. Outcome expectations refer to individuals' beliefs about the likely consequences of performing a particular behavior or pursuing a specific path (Kleine *et al.*, 2021). ICT study programs context of career expectations may include anticipated job opportunities, income prospects, professional prestige, technological relevance, and career mobility. Positive career expectations may strengthen students' motivation to consider ICT as an attractive academic option and in addition learning experience plays a formative role in the development of self-efficacy (Che Musa *et al.*, 2016; Lemus *et al.*, 2024). Positive exposure to computers, digital tools, ICT related coursework, and supportive instructional environments may reinforce students' beliefs that they are capable of succeeding in ICT related learning tasks. SCT provides an important foundation for understanding how students' confidence and expectations are formed before intention emerges (Liong *et al.*, 2023; Sumo *et al.*, 2023).

The Theory of Planned Behavior proposes that intention is the most immediate determinant of behavior. According to this theory, intention is influenced by three central constructs: attitude toward the behavior, subjective norm, and perceived behavioral control (Ajzen, 1991). Attitude refers to an individual's positive or negative evaluation of performing a particular behavior. This theory shows attitude reflects the extent to which students perceive choosing an ICT study program as beneficial, interesting, desirable, and aligned with their future aspirations. Positive attitudes are expected to increase intention (Kotamena *et al.*, 2024; Liong *et al.*, 2023). Subjective norm refers to perceived social pressure from salient referent groups, such as parents, teachers, peers, and other significant individuals and in the educational context students may be more likely to choose an ICT study program when they perceive social approval and encouragement from these important others (Boucif *et al.*, 2025; Fielding *et al.*, 2005). Perceived behavioral control refers to the extent to which individuals believe that they have the capacity, opportunity, and resources to perform the behavior and in choosing an ICT study program, perceived behavioral control may involve students' perceptions of academic competence, access to information, financial readiness, and ability to cope with the demands of the program Perceived behavioral control is closely related to perceptions of personal capability and control making it highly relevant to educational choice (Bosnjak *et al.*, 2020). TPB focuses explicitly on intention formation so it provides a strong behavioral framework for explaining students' readiness to choose a specific study program (Bosnjak *et al.*, 2020).

Although SCT and TPB originate from different theoretical traditions, they offer complementary insights into students' study choice behavior. SCT explains how cognitive beliefs and outcome expectations are developed through learning experiences and environmental interaction whereas TPB explains how these beliefs are translated into behavioral intention through attitude, subjective norm, and perceived behavioral control. The integration of these theories is conceptually meaningful for several reasons. First, self-efficacy from SCT is conceptually related to perceived behavioral control in TPB because both constructs address individuals' belief in their ability to perform a behavior, although perceived behavioral control also includes a controllability dimension (Pajares, 2003; Schunk & DiBenedetto, 2020; Zhang *et al.*, 2015). Second, career expectations may contribute to the formation of attitude, because students who perceive ICT as offering desirable future outcomes are likely to evaluate ICT study programs more positively (Shulga *et al.*, 2023; Sondakh & Tulung, 2024). Third, learning experience may shape self-efficacy, which subsequently affects students' perceptions of control and their positive orientation toward ICT study programs (Almayez *et al.*, 2025; Artino, 2012; Tang *et al.*, 2022). The integration of SCT and TPB therefore provides a more comprehensive explanatory framework than the use of either theory alone. Through this integration, intention to choose an ICT study program can be understood as the result of both prior cognitive-social development and immediate behavioral evaluation.

Research on educational choice and enrollment intention has generally examined psychological, social, and cognitive determinants in a fragmented manner. Studies grounded in SCT tend to emphasize self-efficacy, learning experience, and outcome expectations, while TPB based studies focus on attitude, subjective norm, and perceived behavioral control however, limited conceptual work has integrated both theories into a single predictive framework for explaining students' intention to choose an ICT study program (Bosnjak *et al.*, 2020). Previous studies have more often focused on university students, general career choice, or technology adoption behavior rather than on senior high school and vocational high school students who are at a crucial stage of deciding their future academic direction. This indicates both a theoretical gap and a contextual gap in the literature. Accordingly, a conceptual review that integrates SCT and TPB in the context of ICT study program choice among secondary school students is needed (Boucif *et al.*, 2025; Fielding *et al.*, 2005).

III. Methods

This study employs a conceptual literature review to formulate a predictive model of students' intention to choose an Information and Communication Technology (ICT) study program through the integration of Social Cognitive Theory and the Theory of Planned Behavior. The review relies on secondary sources, including peer-reviewed journal articles, academic books, conference proceedings, and other relevant scholarly works. Relevant literature was identified through academic databases and selected according to its theoretical and contextual relevance to the principal constructs of this study, namely learning experience, career expectations, self-efficacy, attitude, subjective norm, perceived behavioral control, and intention. The selected works were examined using descriptive qualitative analysis and conceptual synthesis in order to identify the relationships among these constructs and to formulate an integrated conceptual framework. This study does not test hypotheses empirically and aims of this study to synthesize prior literature in order to propose a theoretically grounded predictive model that can be examined in future empirical studies involving senior high school and vocational high school students.

Based on the reviewed literature, this paper proposes an integrated conceptual model in which learning experience and career expectations serve as antecedents of self-efficacy and self-efficacy is expected to influence attitude and perceived behavioral control toward choosing an ICT study program. Subjective norm is positioned as a social influence factor that directly shapes intention. Finally, attitude, subjective norm, and perceived behavioral control determine students' intention to choose an ICT study program so the following propositions in this study are:

1. Learning experience positively influences students' self-efficacy toward choosing an ICT study program.
2. Career expectations positively influence students' self-efficacy toward choosing an ICT study program.
3. Self-efficacy positively influences students' attitude toward choosing an ICT study program.
4. Self-efficacy positively influences students' perceived behavioral control regarding the choice of an ICT study program.

5. Attitude positively influences students' intention to choose an ICT study program.
6. Subjective norm positively influences students' intention to choose an ICT study program.
7. Perceived behavioral control positively influences students' intention to choose an ICT study program.

These propositions imply that students' intention is not shaped solely by immediate evaluation of ICT study programs but also by prior experiences, confidence, and expectations that develop over time.

IV. Discussion

The integration of SCT and TPB contributes to the study of educational choice in several ways. First, it expands the explanatory power of intention-based models by linking deeper cognitive processes with intention formation. SCT explains how beliefs such as self-efficacy and expected outcomes are developed through interaction with the learning environment while TPB explains how these beliefs are translated into behavioral intention. Their integration therefore addresses a conceptual limitation in studies that rely on only one of these frameworks. Second, the proposed model is particularly relevant for ICT study program choice because ICT is often perceived as both promising and demanding. Students may evaluate ICT positively because of its career relevance, but they may still hesitate if they lack confidence in their ability to succeed. In this case, self-efficacy and perceived behavioral control become crucial explanatory variables. At the same time, social encouragement from parents, teachers, and peers may reinforce or weaken students' intention through subjective norm. Third, the model has practical implications. Schools can strengthen students' ICT-related self-efficacy by providing meaningful digital learning experiences, ICT exposure, and career guidance. Higher education institutions may also improve students' attitudes by communicating the academic and professional value of ICT study programs. Families and teachers, as important referent groups, can further support students' intention formation by offering information, encouragement, and validation (Shneikat *et al.*, 2024; Thomas & Allen, 2024; Yasmin *et al.*, 2022).

V. Conclusion

This paper develops a conceptual predictive model of students' intention to choose an ICT study program through the integration of Social Cognitive Theory and the Theory of Planned Behavior. The review indicates that learning experience and career expectations contribute to self-efficacy, while self-efficacy influences attitude and perceived behavioral control; subjective norm also directly shapes intention. The integrated framework offers a more comprehensive explanation of ICT study program choice among senior high school and vocational high school students than the use of either theory alone. As a conceptual review, this paper provides a theoretical rather than empirical contribution. Future studies are encouraged to test the proposed model quantitatively in order to validate the relationships among the constructs and to enrich understanding of how students form intentions toward ICT study programs.

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