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EDITED BY
Douglas F. Kauffman,
Consultant, Greater Boston, MA, United States

REVIEWED BY
Aylin Sepici,
Gazi University, Türkiye
Kizito Ndihokubwayo,
Parabolum Publishing, United States

*CORRESPONDENCE
Sylvester Cortes
✉ sylvester.cortes@ctu.edu.ph

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Do social cognitive factors influence final-year undergraduate students' intentions to pursue advanced degrees? An examination of the moderating effect of sex

Chembelyn Bayon, Maximino Abejo III, Marvin Guinocor, Martha Joyce Garciano, Jonita Literatus, Shaleen Jean Reveche, Arnel Nudalo, Maria Cristina Gonzaga, Israeli Caminos, Roger Caminos, Vincent Borres and Sylvester Cortes*

Cebu Technological University, Cebu City, Philippines

This study explores the factors influencing final-year undergraduate students' intentions to pursue advanced degrees through the lens of social cognitive theory (SCT). In addition, it investigates the moderating effect of sex on the causal pathways in the proposed model. Using a quantitative cross-sectional survey design, 578 final-year undergraduate students from various degree programs participated in an online survey. The results revealed that outcome expectations and social support are significant predictors of intention, while intention itself predicts the implementation of intentions to pursue an advanced degree. However, self-efficacy was not found to influence intention, and sex did not moderate the hypothesized paths in the model. These findings suggest that SCT provides a useful and robust framework for understanding the factors shaping undergraduate students' intentions to pursue advanced degrees, as evidenced by the high explanatory power of the structural model. The study also offers practical and theoretical implications, along with suggestions for future research.

KEYWORDS

career development, management education, postgraduate education, social cognitive theory, student choice

1 Introduction

The efforts of the universities to recruit undergraduate students to pursue advanced degrees are closely tied to the role of graduate education in fostering knowledge creation and dissemination through research and publication. Investment in research has the potential to transform the economic landscape and drive scientific and technological innovations, which, in turn, contribute to socioeconomic development (Amani et al., 2022).

Moreover, academic systems often designate research universities as key players in the global knowledge economy. These institutions fulfill a complex set of functions, including the production of high-quality, impactful research and the training of students to engage

in research, which places a strong emphasis on postgraduate education. As a result, research universities actively strive to attract and recruit students to enroll in advanced degree programs (Altbach, 2013).

However, this focus on research is not limited to research universities alone. Even postgraduate students from academic institutions with non-research university status are required to conduct research. In other words, the creation and dissemination of knowledge are collective responsibilities shared by all higher education institutions, making it essential for them to seek enrollment in postgraduate programs to sustain and fulfill these critical functions.

Several efforts have been made to attract undergraduate students to pursue advanced degrees. For example, Eagan et al. (2013) reported the significant investment of the National Institutes of Health and National Science Foundation in the United States in undergraduate research programs.

These investments aim to retain students in undergraduate STEM fields and support their aspirations for admission into STEM graduate programs. Furthermore, these investments in undergraduate research programs are aimed at sustaining, if not further improving, the country's scientific capacity for research and development rather than diversifying the pool of scientific researchers. Another strategy to increase the likelihood of student enrollment into degree programs is to offer merit-based scholarships to academically talented individuals (Porter et al., 2014).

In the Philippines, the Department of Science and Technology (DOST), the Commission on Higher Education, and various foreign exchange scholarship programs from the United States, Europe, Japan, and other developed countries are at the frontiers of offering these scholarship opportunities. Anyone intending to an pursue advanced degree can choose from a range of scholarship programs that align with their undergraduate studies and desired graduate programs. For example, those with a bachelor's degree in science education may apply for a Capacity Building Program in Science and Mathematics Education offered by DOST.

This program provides scholarships for graduate education with the goal of improving the quality of and accelerating the development of a critical mass of experts in science and mathematics education (Department of Science and Technology, 2023). Additionally, universities actively promote the benefits of pursuing an advanced degree as part of their recruitment strategy. It is widely recognized that educational attainment plays a crucial role in determining one's social position, salary, and benefits, owing to the personal and professional development it offers. The higher the educational attainment, the greater the likelihood of securing these advantages (Incikabi et al., 2013).

Despite the benefits of advanced degrees, recruiting postgraduate students continues to be a common challenge for universities worldwide. For example, Baum and Steele (2017) reported that only 12% of adults ages 25 years and older in the United States held advanced degrees (i.e., master's, doctoral, or professional degrees) in 2015. This percentage is disproportionately small relative to the total population.

Similarly, David et al. (2020) studied gender-based enrollment in graduate teacher education programs in the Philippines between 2016 and 2017, revealing that only 102,795 students were enrolled at the master's level and 13,079 students at the doctorate level, with the majority of them being women.

Globally, universities face significant challenges in attracting, recruiting, and retaining students in advanced degree programs. Administrators, program coordinators, deans, department heads, academics, and marketers play a critical role in identifying what experiences motivate or discourage students from considering advanced degrees (Jepsen and Neumann, 2010; Jepsen and Varhegyi, 2011; Shellhouse et al., 2020). The decision to pursue an advanced degree can be made at various points—before, during, or after completing an undergraduate degree. However, there is still a poor understanding of the factors that influence students' intentions to pursue advanced studies as they form this intention (Jepsen and Neumann, 2010; Plunkett et al., 2010; Jepsen and Varhegyi, 2011).

The majority of the studies on the antecedents of postgraduate students' intentions are conducted *post-hoc*, meaning they are examined after the students have already enrolled (e.g., Habahbeh, 2014; Fung et al., 2017; Amani et al., 2022). The scarcity of research in the Philippines addressing the factors influencing prospective students' enrollment in advanced degree programs motivated the development of this study.

In this context, the present study aimed to explore the factors influencing final-year undergraduate students' intentions to pursue advanced degrees through the lens of Bandura's (1986) Social cognitive theory. In addition, this study examined the moderating effect of sex on the causal paths in the proposed model, considering the dominant participation of women in graduate education. The findings may provide a unique set of predictors for advanced studies' intentions among men and women, which could be valuable in designing targeted and contextualized recruiting strategies.

2 Literature review and hypothesis development

2.1 Social cognitive theory

Social cognitive theory (SCT) builds on the foundational principles of social learning theory but places greater emphasis on cognition as a predictor of individual behavior (Bandura, 1986). It posits that socio-structural factors influence behavior through psychological mechanisms within the self-system (Bandura, 2001). In essence, SCT highlights the role of self-referent thinking in shaping human motivation and actions.

The primary factors driving behavior, according to SCT, include self-efficacy, outcome expectations, and environmental supports and resources (Bandura, 1986; Bandura, 1997). Over time, SCT has been widely adopted across various disciplines for academic research, such as education, information systems, career decision-making, organizational studies, and media and communication studies, as reviewed by Middleton et al. (2018). In the present study, we examined the socio-cognitive determinants influencing final-year undergraduate students' pursuit of advanced degrees, focusing on self-efficacy, outcome expectations, and social support.

2.2 The outcome expectation as an antecedent of students' intentions

Outcome expectation is a core construct of SCT (Bandura, 2001), typically defined as the perception of the possible consequences of one's action (Hankonen et al., 2013; Fasbender, 2020; Lippke, 2020). Bandura (1986) further clarifies that outcome expectations are estimates of the likelihood that a specific action will lead to a desired

outcome. In addition, it is worth noting that it is not the act itself but the anticipated consequences of the act that shape outcome expectations (Bandura, 1986). People form these outcome expectations by observing the conditional relationship between environmental events and the outcomes produced by certain actions. This process allows individuals to transcend their immediate environment and regulate their present actions to achieve future goals (Bandura, 2001).

When determining one's intention to engage in a specific behavior, human action results from the interaction between anticipated outcomes, social norms, expectations, and other factors that may facilitate or hinder behavior (Ajzen, 2002; Ajzen, 2011). In this regard, outcome expectation plays a critical role in the decision to pursue an advanced degree, as supported by several studies (e.g., Carter et al., 2016; Lent et al., 2017). Based on this, the following hypothesis is proposed:

> *H1*: Outcome expectations positively and significantly influence students' intentions to pursue advanced degrees.

2.3 Self-efficacy as an antecedent of students' intentions

As introduced by Bandura (1986, 1997), self-efficacy refers to an individual's belief in their ability to successfully accomplish a task within a specific context (Filippou, 2019). In academia, this concept is termed academic self-efficacy, which denotes a student's self-assessment of their ability to excel in academic endeavors (Chemers et al., 2001). It is important to differentiate self-efficacy from outcome expectations and behavior outcome expectations. In addition, Maddux and Kleiman (2016), p.89 highly emphasized that "self-efficacy is not perceived skill, but rather perceptions of what can be done with one's skill".

Earlier studies have shown that self-efficacy is a predictor of academic and career-related decisions (Sadri and Robertson, 1993). This is recently supported by Muñoz (2021) and Borrego et al. (2018), demonstrating that students with high self-efficacy are more likely to participate in and engage with professional activities. These students exhibit positive thoughts, feelings, and actions, which ultimately lead to successful outcomes, such as achieving personal and professional goals. In line with this, the following hypothesis is proposed.

> *H2*: Self-efficacy positively and significantly influences students' intentions to pursue advanced degrees.

2.4 Social support as an antecedent of students' intentions

Social support is a multi-dimensional concept (Weston et al., 2021). For one, it refers to psychological resources received by a person from his/her social network necessary to cope with challenges (Taylor et al., 2015). It also pertains to emotional and instrumental support (Trepte and Scharkow, 2016). The former involves providing warmth, nourishment, reassurance, and guidance when making difficult decisions, while the latter refers to providing tangible services such as financial assistance or specific aids or goods. Subsequently, social support can be viewed as informational support, which means receiving feedback, referrals, or guidance about information in instances requiring decision-making (Kaya et al., 2012). Finally, it can be in the form of constructive feedback and affirmation necessary for self-evaluation purposes, a concept referred to as appraisal support (Tan et al., 2017). This social support stems from family members, significant others, peers, relatives, neighbors, and, in general, their community. A number of studies identified this core construct of SCT as an equally important predictor to increase students' intentions or persistence to pursue academic goals, such as undertaking an advanced degree (Dupont et al., 2015; Cai and Lian, 2022). Cai and Lian (2022) explained that students receiving social support from their network lead to goal setting and goal pursuit. In this case, pursuing an advanced degree is equivalent to pursuing and setting a professional or academic goal. Hence, the hypothesis below is proposed.

> *H3*: Social support positively and significantly influences students' intentions to pursue advanced degrees.

2.5 Intention as an antecedent of implementation intention to pursue an advanced degree

Intention refers to a state in which an individual is inclined to act, guiding them toward action action (Raz, 2017). Ajzen (1991) further explained that intention reflects the motivational factors influencing behavior, serving as an indicator of how much effort a person is willing to exert to perform a particular action. Typically, a stronger intention correlates with a higher likelihood of performance. However, intention alone does not guarantee action, as individuals may encounter self-regulatory obstacles during the process (Gollwitzer and Sheeran, 2006). In other words, intention must be coupled with commitment (Cohen and Levesque, 1990).

To enhance the predictive power of intention, it should be made more concrete. Adding specific plans to the goal, such as when, how, and where the behavior will take place–is referred to as "implementation intention" (Gollwitzer, 1999). In the context of pursuing an advanced degree, the influence of intention on implementation intention has not been studied extensively, although theorized by Gibbons (Gibbons, 2020). For example, Carter et al. (2016) used SCT constructs to explain final-year pharmacy students' intentions to pursue higher degrees in pharmacy practice research but did not extend their model to include implementation intention. Therefore, this study proposes the following hypothesis:

> *H4*: The intention has a positive and significant influence on students' implementation intention to pursue an advanced degree.

2.6 Moderating effects of sex on the relationship between SCT constructs toward intention

The moderating effect of sex on the relationship between social cognitive constructs and behavior has been explored by several scholars in different contexts, such as predicting physical activity (Liu

et al., 2021) and the developmental trajectory of self-efficacy among STEM students (Stewart et al., 2020).

However, studies on the moderating effects of sex within Social Cognitive Theory (SCT) often yield contrasting results depending on the specific behavior being examined and the context in which it is applied. These discrepancies may stem from gender differences in self-efficacy, outcome expectation, and social support. For example, research has shown that men generally report higher self-efficacy in mathematics, computers, and social sciences, whereas women tend to have higher self-efficacy in language arts, with no significant difference in science-related self-efficacy (Huang, 2013). Additionally, women have been found to receive more social support than men (Siddiqui et al., 2019; Tifferet, 2020). These differences may be shaped by socialization experiences, societal roles, and cultural norms and values associated with sex (Tifferet, 2020).

Similarly, gender differences in outcome expectations are not well established as studies provide conflicting results. On one hand, it is affected by gender stereotypes (Serra et al., 2019), but another study revealed otherwise (Inda et al., 2013). The lack of coherence on whether gender differences in SCT constructs favor a certain sex category makes it interesting to test its moderating effect on the influence of outcome expectation, self-efficacy, and social support toward students' intentions to pursue advanced degrees. Given this understanding, the following hypotheses will be tested.

> *H5*: Sex moderates the effect of outcome expectations on students' intentions to pursue advanced degrees.
>
> *H6*: Sex moderates the effect of self-efficacy on students' intentions to pursue advanced degrees.
>
> *H7*: Sex moderates the effect of social support on students' intentions to pursue advanced degrees.
>
> *H8*: Sex moderates the effect of students' intentions on their implementation intention to pursue advanced degrees.

3 Methodology

3.1 Data and sample

This study was conducted to examine social cognitive factors influencing final-year undergraduate students to pursue advanced degrees. To carry out this aim, a quantitative, non-experimental design was employed. In particular, a cross-sectional survey was conducted on final-year undergraduate students studying in Philippine higher education institutions. The survey employed the convenience sampling technique because it is a practical and cost-effective data collection method from a wide cross-section of participants.

However, filter questions were included in the survey form to determine participant eligibility. The inclusion criteria required (a) participants' consent for their responses to be used for research and publication purposes, and (b) being in the final year of their degree program. Table 1 shows the distribution of participants when grouped according to age, sex, and degree program enrolled.

3.2 Research instrument

The instrument used had three parts. The first part presents the informed consent form reflecting the research background and purpose, potential risks and discomforts, confidentiality, and benefits. This was subject to participants' perusal and approval. The second part obtained students' profiles in terms of sex, age, and degree program enrollment. The third and final part surveyed students' perceived level of social support, self-efficacy, outcome expectation, intention, and implementation intention to pursue an advanced degree. These constructs are operationalized by conducting a literature review to generate the items. Table 2 shows the five constructs of the instrument and the items assigned to them, along with the references as to which these items are sourced. The constructs have an uneven number of items assigned, which ranges from three (i.e., intention) to six (i.e., social support). All items were measured on a five-point Likert scale, with 1 assigned as strongly disagree and 5 assigned as strongly agree.

3.3 Data gathering procedure

The researchers administered a web-based survey through Google Forms. The link associated with the survey form was shared through email and other communication platforms from June to October 2023, the same period when the Google Form accepted survey responses.

The researchers followed all ethical procedures set by the University Research Ethics Committee before, during, and after the survey. Initially, the researchers asked for consent and informed the prospective students of the details of the study before they participated in the survey. As proof of their consent, they were asked to sign

TABLE 1 Distribution of final-year students when grouped according to age, sex, and degree program enrolled ($n = 578$).

Profile	Category	*N*	%
Age (Years)	18–23	523	90.48
	24–29	38	6.57
	30–35	8	1.38
	36 and above	9	1.56
Sex	Male	242	41.9
	Female	336	58.1
Degree program	Accountancy	3	0.50
	Aviation technology	89	15.40
	Biology	9	1.60
	Business administration	26	4.50
	Elementary education	12	2.10
	Engineering	8	1.40
	Fisheries	11	1.90
	Hospitality management	65	11.20
	Industrial technology	237	41.00
	Psychology	41	7.10
	Secondary education	71	12.30
	Tourism management	6	1.00

TABLE 2 Constructs of the scale with the items assigned and their corresponding references.

Constructs	Item code and statement	No. of items	Reference/s
Outcome expectation	[OE1] Pursuing an advanced degree will help me achieve success in work. [OE2] Pursuing an advanced degree will help me get a good job. [OE3] Pursuing an advanced degree will allow me to enjoy a work-family balance. [OE4] Pursuing an advanced degree will lead me to develop professionally.	4	Soldner et al. (2012)
Self-efficacy	[SE1] I generally manage to solve difficult academic problems if I try hard enough. [SE2] I know I can stick to my aims and accomplish my goals in my field of study. [SE3] I will remain calm during my exam because I know I will have the knowledge to solve problems. [SE4] I know I can pass the exam if I put in enough work during the semester. [SE5] The airport has wide parking space available. The motto "if other people can, I can too" applies to me when it comes to my field of study.	5	Van Zyl et al. (2022)
Social support	[SS1] My peers and I engage in academic conversations relating to our tasks or something we learned in class. [SS2] My peers and I engage in sociocultural conversations. [SS3] At least one of my professors offers me advice concerning my academic endeavors. [SS4] At least one of the non-course-related professors allows me to discuss my career plans. [SS5] The university provides an academically-supportive residence hall climate. [SS6] The university provides a socially-supportive residence hall climate.	6	Blizzard (2020) and Soldner et al. (2012)
Intention	[Int1] I am very interested in pursuing an advanced degree. [Int2] My intention to pursue an advanced degree is strong. [Int3] I will make an effort to pursue an advanced degree.	3	Ingram et al. (2000), Chen (2007), and Ajzen (1991)
Implementation intention	[II1] I have a detailed plan of how, when, and what preparation is necessary for pursuing an advanced degree. [II2] I know exactly what circumstances might make modifications to the preparation plan necessary and how possible delays can be remedied. [II3] It is fair to say that my preparation activities to pursue the advanced degree will be at the start of my last semester in my last year as a college student. [II4] It is fair to say that my preparation activities to pursue the advanced degree will be right after my graduation from college.	4	Sommer and Haug (2012)

approval of their study participation. The section where they affixed their signature stated, "I have read this form and decided that I will be participating in the study as described above. Its general purposes, the particulars of involvement, possible risks, and benefits have been explained to my satisfaction. I understand that I can withdraw at any time. I have received a copy of this form." Eventually, the link to the Google Form was sent only to the consenting students. The data collected in the survey were treated with the utmost confidentiality and used exclusively for research and publication purposes.

3.4 Data analysis

Two statistical programs were used to analyze the data, namely Statistical Packages for Social Sciences (SPSS 26.0) and Amos 26.0. Descriptive statistics such as frequency and percentage distribution were used to express categorical data. Next, the measurement model assessment was examined using confirmatory factor analysis (CFA) to establish its convergent validity, internal consistency, and dimensionality. In addition, discriminant validity was assessed following the Fornell-Larcker criterion. Finally, structural equation modeling (SEM) was conducted to assess the structural model, while multi-group analysis was conducted to determine the moderating effect of sex on the proposed relationships in the structural model.

4 Results

4.1 Measurement model assessment

The CFA was conducted using the maximum likelihood method, which is chosen for its asymptomatic efficiency in studies with large sample sizes (Bollen, 1989; Tarima and Flournoy, 2019). Initially, the

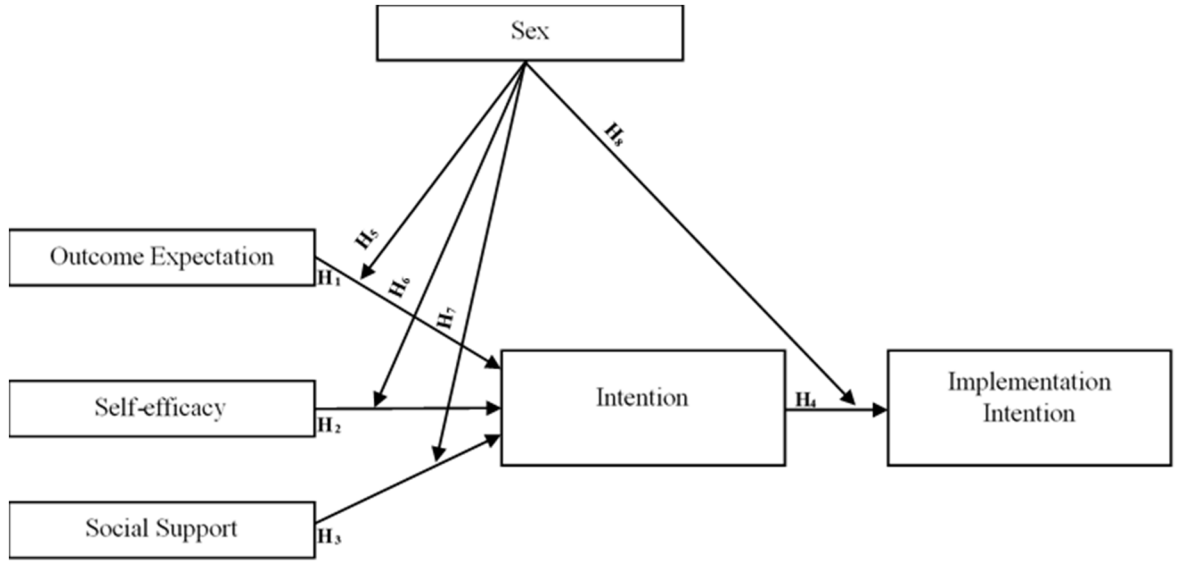

FIGURE 1
Proposed conceptual framework of the study.

t-values and standardized factor loading (SFL) for each item in the scale were evaluated to support the analysis of the model's overall data fit. The observed t-values ranged from 12.219 (SS4) to 41.611 (Intn2), and the SFLs ranged from 0.566 (SS4) to 0.938 (Intn2) (Figure 1).

According to the recommendations by Hair et al. (2014) and Kline (2016), t-values should reach a cutoff value of ≥1.96, and SFLs should reach ≤0.7. However, five items under the social support construct had SFLs below 0.7. Despite this, none of these items were removed for two practical reasons. First, prior studies have retained items with SFLs as low as 0.37 (Goni et al., 2020) or 0.41 (Ozturk, 2011). In this study, as shown in Table 3 and Figure 2, SS4 had the lowest SFL at 0.566, which is still higher than the thresholds used in those studies. Second, the researchers emphasized the conceptual importance of these items, asserting that removing them would leave the remaining item (SS2) insufficient to fully represent the construct.

Finally, five goodness of fit indices (GFIs) were examined to evaluate the overall model fit in the CFA. These are shown in Table 4 alongside the proposed acceptable threshold values from several authors and the actual values derived from the analysis.

The threshold values for GFI were based on the studies conducted by Cortes et al. (2021), Toring et al. (2022a) and Toring et al. (2022b). Notably, all five fit indices indicate an acceptable model fit after correlating items with high covariance values.

The convergent validity and internal consistency of the scale were examined using SFLs and composite reliability (CR). Gefen et al. (2000) and Hair et al. (2014) suggested that the recommended minimum threshold for both SFL and CR is ≥0.7. However, as previously discussed and as shown in Table 3 and Figure 2, five items fall below this SFL threshold.

To address this, CR values, which range from 0.820 to 0.947, were used as alternative evidence of convergent validity, confirming that convergent validity has been achieved. These values also demonstrate the scale's internal consistency. Additionally, discriminant validity was assessed using the Fornell-Larcker criterion, which requires that the square root of the average variance extracted ($\sqrt{AVE}$) for a construct be higher than the construct's correlation with any other construct, ensuring its uniqueness. Table 5 shows the results of discriminant validity analysis, showing that $\sqrt{}$AVE for each of the five constructs consistently exceeds the corresponding correlation coefficients.

4.2 Structural model and hypotheses testing

SEM was conducted to assess the validity of the proposed structural model. Using the same values of GFIs for the CFA, the model demonstrated excellent goodness of fit with the following values: CFI = 0.965, TLI = 0.959, RMSEA = 0.057, SRMR = 0.0442, and CMIN/df = 2.869.

Subsequently, the proposed hypotheses were tested within the structural model. As shown in Table 6 and Figure 3, three hypotheses were supported. Specifically, outcome expectation (βH1 = 0.611, t = 8.225, p = 0.000 < 0.001) and social support (βH3 = 0.279, t = 3.581, p = 0.000 < 0.001) were found to be positive and significant predictors, collectively explaining 69% of the variation in students' intentions to pursue an advanced degree. However, self-efficacy (βH2 = −0.031, t = −0.466, p = 0.641 > 0.001) did not show a significant influence on intention. Finally, intention (βH4 = 0.808, t = 21.268, p = 0.000 < 0.001) was a significant positive predictor, explaining 65% of the variation in students' implementation intention to pursue an advanced degree.

A multi-group analysis was conducted to assess the moderating effect of sex on all relationships in the structural model. According to Hair et al. (2010), a moderating effect of a variable on a specific path in the model is established when either (a) one group's beta value is significant while the other group's beta is insignificant, or (b) both groups have significant beta values, but one group's beta is positive, and the other group's beta is negative (Hair et al., 2010). Table 7 shows the results of the moderating effect of sex in all hypothesized paths.

TABLE 3 Convergent and internal consistency results of the measurement model.

Constructs	Item	Standardized factor loading	Average variance extracted	Composite reliability
Outcome expectation	OE1	0.890	0.725	0.913
	OE2	0.898		
	OE3	0.762		
	OE4	0.850		
Self-efficacy	SE1	0.774	0.674	0.911
	SE2	0.874		
	SE3	0.785		
	SE4	0.882		
	SE5	0.782		
Social support	SS1	0.652	0.434	0.820
	SS2	0.704		
	SS3	0.646		
	SS4	0.566		
	SS5	0.675		
	SS6	0.698		
Intention	Intn1	0.907	0.855	0.947
	Intn2	0.938		
	Intn3	0.929		
Implementation intention	II1	0.858	0.672	0.891
	II2	0.862		
	II3	0.783		
	II4	0.772		

TABLE 4 Model data fit indices results.

Model fit indices	Proposed threshold value	Source	Resulting values before modification	Resulting values after modification
CFI	>0.80	Garson (2006)	0.928	0.967
TLI	>0.85	Sharma et al. (2005)	0.916	0.961
RMSEA	<0.08	Kenny et al. (2014)	0.081	0.055
SRMR	≤0.08	Hu and Betler (1999)	0.545	0.0345
Chi-square/df Ratio	<3.00	Hair et al. (2009)	4.814	2.752

For H5 (Intention ← Outcome Expectation), the beta values for both men ($\beta = 0.690$, $t = 6.810$, $p = 0.000 < 0.001$) and women ($\beta = 0.508$, $t = 4.409$, $p = 0.000 < 0.001$) are significant. Similarly, for H7 (Intention ← Social Support), the beta values for both men ($\beta = 0.223$, $t = 2.691$, $p = 0.007 < 0.05$) and women ($\beta = 0.351$, $t = 1.994$, $p = 0.046 < 0.05$) are significant. In the case of H8 (Implementation Intention ← Intention) the beta values for men ($\beta = 0.876$, $t = 16.109$, $p = 0.000 < 0.001$) and women ($\beta = 0.778$, $t = 15.173$, $p = 0.000 < 0.001$) are also significant.

However, for H6 (Intention ← Self-efficacy), the beta values for both men ($\beta = -0.068$, $t = -0.806$, $p = 0.420 > 0.05$) and women ($\beta = 0.005$, $t = 0.043$, $p = 0.966 > 0.05$) are insignificant. However, based on the guidelines by Hair et al. (2010), these results indicate that sex does not have a moderating effect on any of the relationships within the structural model.

5 Discussion

Anchored in social cognitive theory, this study aimed to explore the social cognitive factors that influence undergraduate students' intentions to pursue advanced degrees. Key findings indicate that outcome expectations and social support are significant predictors of students' intentions to pursue advanced degrees, and these intentions further predict their implementation intentions. However, self-efficacy

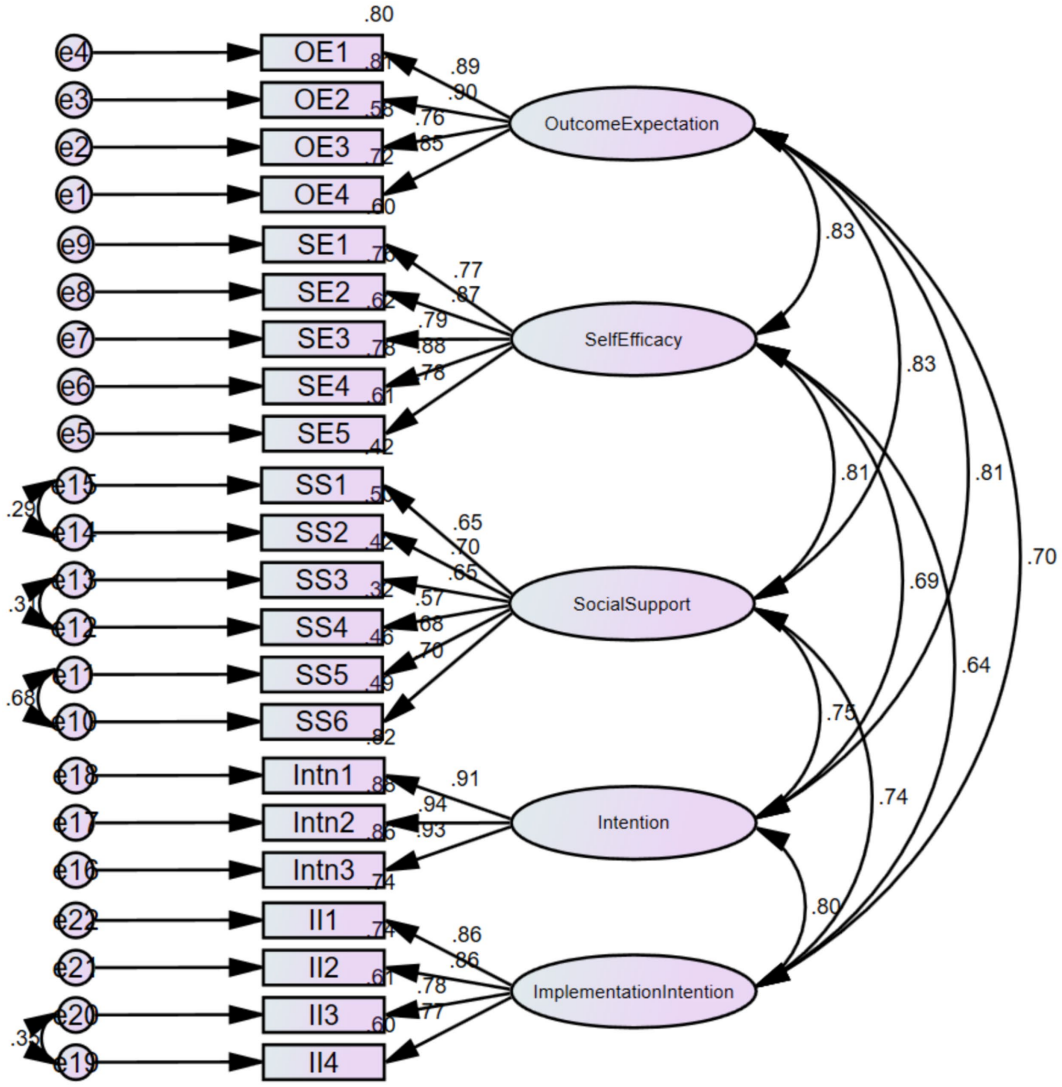

FIGURE 2
Confirmatory factor analysis model depicting the relationships among latent variables and observed indicators of the measurement model.

TABLE 5 Discriminant validity results of the measurement model.

Variable	OE	SE	SS	Intn	II
OE	1				
SE	0.768	1			
SS	0.686	0.675	1		
Intn	0.763	0.663	0.636	1	
II	0.640	0.577	0.628	0.719	1
AVE	0.725	0.674	0.434	0.855	0.672
$\sqrt{AVE}$	0.851	0.821	0.659	0.925	0.820

does not have a significant influence on intention, and sex does not moderate the causal paths within the proposed model. These findings aimed to address several research gaps, with the two predictors explaining 69% of the variance in students' intentions. Specifically, in the case of outcome expectation, when students hold favorable beliefs about the potential outcomes of pursuing an advanced degree, they are more likely to develop an interest in doing so.

Conversely, people with unfavorable beliefs or who anticipate unlikely outcomes are less likely to engage in a particular domain (Sheu et al., 2010). For example, Carter et al. (2016) studied final-year students' intentions to pursue a higher degree in pharmacy practice research (PPR). Using SEM to test a model based on SCT, they found that students' expectations that PPR would be enjoyable and align with their career goals were key factors influencing their intention to enroll in advanced degree programs. This significant role of outcome expectations in shaping intentions aligns with findings from previous studies research (e.g., Lent et al., 2017; Lent and Brown, 2019; Shellhouse et al., 2020).

Similarly, social support plays a key role in shaping students' intentions to pursue a graduate degree. As Cai and Lian (2022) explained, individuals who receive more social support tend to have greater personal growth initiative and enhanced academic self-efficacy, which, in turn, strengthens their sense of purpose. This

TABLE 6 Structural model estimates.

Hypothesized path		Standardized beta	*t*- value	*p*- value	Decision
H_1	Intention ← Outcome Expectation	0.611	8.225	***	Supported
H_2	Intention ← Self-efficacy	−0.031	−0.466	0.641	Rejected
H_3	Intention ← Social Support	0.279	3.581	***	Supported
H_4	Implementation Intention ← Intention	0.808	21.268	***	Supported

Statistical significance. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; n.s. non-significant.

TABLE 7 The moderating effect of sex on the relationship between the causal paths proposed in the structural model.

Hypothesized path		Male		Female		Decision
		Estimate	*p*- value	Estimate	*p*- value	
H_5	Intention ← Outcome Expectation	0.690	***	0.508	***	Rejected
H_6	Intention ← Self-efficacy	−0.068	0.420	0.005	0.966	Rejected
H_7	Intention ← Social Support	0.223	0.007	0.351	0.046	Rejected
H_8	Implementation Intention ← Intention	0.876	***	0.778	***	Rejected

Statistical significance. *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; n.s. non-significant.

increased support can also improve individuals' positive psychological states, such as positive affect, making them more likely to consider enrolling in advanced degree programs (Li et al., 2018).

For example, Greene et al. (2020) explored the factors motivating teachers to enroll in an online master's degree program in education. They found social support, from the application process to admission and course registration, played a significant role. Students emphasized the importance of collaboration, peer interaction, and program improvement, including opportunities for virtual collaboration. This evidence suggests that social support significantly influences students' intentions to pursue advanced degrees.

While this study identified outcome expectations and social support as significant predictors of students' intentions to pursue advanced degrees, the hypothesized relationship between self-efficacy and students' intentions failed to establish causation. This result contrasts with the usual trend, where self-efficacy is typically considered an influential antecedent of intention.

For example, Niazi et al. (2013) suggested that people with high self-efficacy set higher goals for themselves and are more likely to intend to perform challenging tasks. Similarly, Borrego et al. (2018) found that self-efficacy is one of the strongest predictors of students' intentions to pursue graduate studies in engineering. However, this is not always the case, as the study conducted by Carter et al. (2016) found that self-efficacy was not a predictor of intention in their study exploring students' intent to pursue higher degrees in pharmacy practice research (PPR). Therefore, the findings of this study align with those results, suggesting that the lack of a relationship between self-efficacy and intention could be a subject for further studies.

The final hypothesized path examines the relationship between intention and implementation intentions. Implementation intentions are concrete plans that connect favorable opportunities to specific cognitive or behavioral responses aimed at achieving a goal. While intentions indicate what a person desires to achieve, implementation intentions outline specific actions, including when, where, and how to achieve that goal. Thus, these two constructs differ in terms of both content and structure. Intention reflects the goal, while implementation intention focuses on the details of how the goal will be realized (Gollwitzer, 1999). Sommer and Haug (2012) and Sheeran et al. (2005) examined and confirmed the idea that goal intention is an antecedent of implementation intentions. Sheeran et al. (2005) explained that for implementation intentions to lead to action, they must be grounded in strong goal intentions. This reasoning helps explain the findings of the current study, in which intention accounted for 65% of the variance in implementation intention for pursuing an advanced degree.

6 Conclusion

The study highlights the relevance of Bandura's social cognitive theory (SCT) in understanding the factors that can influence final-year undergraduate students' intentions to pursue advanced degrees. Key findings indicate that outcome expectations and social support are significant and positive predictors of students' intentions, predicting their implementation intentions to pursue advanced degrees.

However, contrary to expectations, self-efficacy did not significantly influence intention, and sex did not moderate the causal paths within the proposed model. These findings emphasize the robustness of SCT as a guiding framework for explaining students' educational aspirations, as demonstrated by the model's high explanatory power.

The study also provides both practical and theoretical insights, highlighting areas for future research to deepen the understanding of these dynamics and to improve strategies for encouraging undergraduate students to pursue advanced degrees.

7 Implications

The findings of this study have three key implications. First, from a practical perspective, this study highlights the importance of outcome expectations, self-efficacy, and social support in shaping

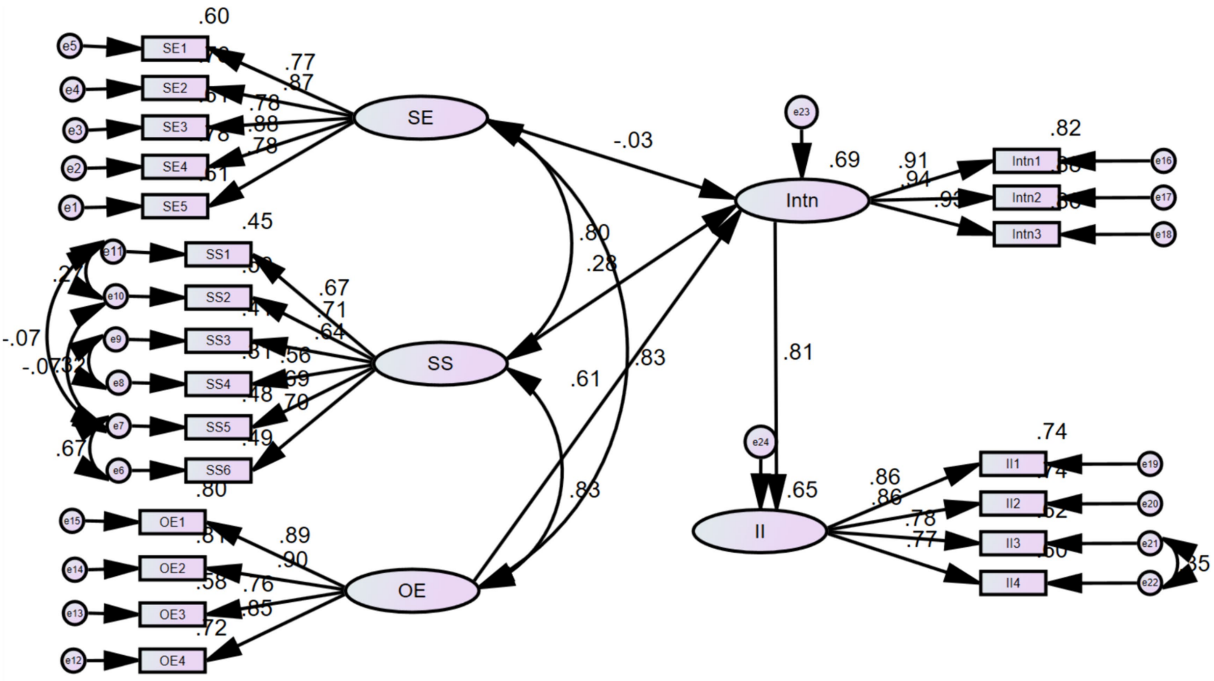

FIGURE 3
Structural equation modeling diagram illustrating the influence of social cognitive factors on intention and the influence of intention on implementation intention of final–year undergraduate students to pursue advanced degree.

undergraduate students' intentions to pursue advanced degrees. Understanding how these factors influence students' decisions is critical for higher education administrators and academics, particularly those working to attract students to graduate programs or to encourage current undergraduates to continue their studies. The results indicate that outcome expectations and social support play vital roles in shaping students' intentions, suggesting that academics should foster an environment that promotes professional growth, helping students develop positive perceptions of graduate studies and feel supported.

Second, while the study explored the potential moderating role of sex, no significant effect was found. This opens the door to exploring other possible moderating variables, such as age, socioeconomic status, marital status, field of specialization, religion, and proximity to educational institutions, which may provide further insight into what drives students' intentions to pursue advanced degrees. Finally, in terms of theoretical contributions, this study reinforces the value of Bandura's SCT in explaining the factors influencing undergraduate students' intentions to pursue advanced degrees, as evidenced by the high explanatory power of the model. This study also proves that sex is not a moderating variable in the relationship between SCT constructs and intention, highlighting the need for further exploration of other moderating factors.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Ethical approval was not required for the study involving human participants in accordance with the local legislation and institutional requirements. The participants provided written informed consent for participation in the study.

Author contributions

CB: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Validation, Visualization, Writing – original draft, Writing – review & editing, Supervision. MA: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Validation, Visualization, Writing – original draft, Writing – review & editing. MG: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Validation, Visualization, Writing – original draft, Writing – review & editing. MJG: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Validation, Visualization, Writing – original draft, Writing – review & editing. JL: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Validation, Visualization, Writing – original draft, Writing – review & editing. SR: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Validation, Visualization, Writing – original draft, Writing – review & editing. AN:

Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Validation, Visualization, Writing – original draft, Writing – review & editing. MCG: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Validation, Visualization, Writing – original draft, Writing – review & editing. IC: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Validation, Visualization, Writing – original draft, Writing – review & editing. RC: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Validation, Visualization, Writing – original draft, Writing – review & editing. VB: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Validation, Visualization, Writing – original draft, Writing – review & editing. SC: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, Resources, Software, Validation, Visualization, Writing – original draft, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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