

The Role of Self-Efficacy and Entrepreneurial Self-Efficacy on the Entrepreneurial Intentions of Graduate Students: A Study among Omani Graduates

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ABSTRACT

Objective: The objective of this research is to study the entrepreneurial intention of Omani graduate students by introducing self-efficacy as a mediating variable in Social Cognitive Career Theory (SCCT).

Research Design & Methods: Two hundred and sixty-three Omani graduate students were surveyed using a self-administered questionnaire. An entrepreneurial intention model was developed and tested using AMOS.

Findings: The results revealed that the effect of self-efficacy on the entrepreneurial intention of graduate students was fully mediated by entrepreneurial self-efficacy. At the same time, the direct effect of self-efficacy on entrepreneurial intention was not established.

Implications & Recommendations: The research informs policymakers and academicians in Oman to develop sustainable entrepreneurship courses to nurture entrepreneurship based on the measures of self-efficacy and entrepreneurial self-efficacy.

Contribution & Value Added: This research contributes to the Social Cognitive Career Theory by including entrepreneurial self-efficacy as a mediating variable, thus providing a new scope with the study of entrepreneurial intention among Omani graduate students.

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INTRODUCTION

Entrepreneurship helps in the socio-economic development of countries (BarNir, Watson, & Hutchins, 2011; Hafer, 2013; Thurik & Wennekers, 2004), and entrepreneurial attitude stimulates the GDP of a country (Doran, McCarthy, & Marie O'Connor, 2018). Entrepreneurship is a viable alternative for employment generation (Van Gelderen, Brand, van Praag, Bodewes, Poutsma, & Van Gils, 2008) while neglecting entrepreneurship as a strategic component for growth from a five-year development plan of a country would eventually lead to unemployment issues (Kayed & Kabir, 2011). Developing young graduates as entrepreneurs augments employment measures adopted by a country through the creation of self-employment opportunities. Students from developing economies are more likely to pursue entrepreneurship as their career in comparison to students from developed economies (Plewa & Struwig, 2011). However, motivating graduate students to pursue entrepreneurship as their career is the most challenging task for both governments and universities. Many studies have identified self-efficacy as a major determinant of entrepreneurship and entrepreneurial intention. Self-efficacy means one's own belief to complete tasks successfully. General self-efficacy is useful when an individual faces challenging situations, and when one wants to establish a firm (Locke & Baum, 2007). Practitioners and academicians coordinate efforts to develop entrepreneurial culture by focusing on graduate entrepreneurship and entrepreneurial intention (Krueger, Reilly, & Carsrud, 2000; Nabi & Holden, 2008). Strong entrepreneurial intention (EI) is likely to eventually result in attempts to start a new venture. The Social Cognitive Career Theory is a widely accepted framework to study entrepreneurial intention (EI), which is a underresearched in the Gulf region.

The objective of this research is to study Omani graduates' entrepreneurial intention by introducing entrepreneurial self-efficacy as a mediating variable in the Social Cognitive Career Theory (SCCT) framework developed by Lent, Brown, and Hackett (2002). The study was conducted by surveying 263 graduate students with a self-reporting instrument. The article follows in four major sections. The first section focuses on the review of literature with hypotheses and model development. The second section discusses the materials and methods used in this study. The third section focuses on the model testing, and the fourth section discusses the results, followed by a conclusion and future research directions.

LITERATURE REVIEW

This research focuses on individual cognition related factors of the Social Cognitive Career Theory (SCCT), that is, the self-efficacy, outcome expectations, and personal goals based on the work of Lent, Brown, and Hackett (2002). The SCCT framework focuses on career interests and their relation to career choices. Self-efficacy (SE), outcome expectations, and personal goals control one's own career (Lent, Brown, & Hackett, 2000). "Self-efficacy is one's own beliefs on the capabilities to complete a task successfully" (Boyd & Vozikis, 1994). SCCT asserts that SE influences personal goals, which determines the individual's action based on the expected outcomes. Outcome expectation is the "belief about the consequences of performing a behaviour" (Lent *et al.*, 2002, p.262). The level of SE influences the outcome ex-

expectations and their success and failures; people are discouraged by failures when they experience easy success. However, effort and perseverance can overcome obstacles and lead to a stable sense of SE (Wood & Bandura, 1989). Perseverance means achieving goals in challenging times. Thus, an individual with high SE will persevere in challenging times (Bandura, 2002). Self-efficacy and outcome expectations influence the career choice, goals, and ambitions. Hence, a goal is the conviction to perform an activity that affects an outcome (Bandura, 1986, quoted in Boyd & Vozikis, 1994). That is, individuals with a high level of SE and the wish to achieve their expected outcomes will help them in achieving their goals. Lent, Brown, and Hackett (1994) claim that one's choice of career depends on the person's SE and outcome expectations. Therefore, I propose the following hypotheses:

H1: Self-efficacy positively influences one's outcome expectations.

H2: Self-efficacy positively influences one's conviction to perform an activity.

Achieving desired goals creates a positive change, and it positively influences entrepreneurial commitment (Jansen, 2004), entrepreneurial intention (do Paço, Ferreira, Raposo, Rodrigues, & Dinis, 2011), the need for achievement, and persistence (Wu, Matthews, & Dagher, 2007). Wu and Li (2011) focus on different constructs – namely perceived benefits and sacrifices – to study entrepreneurial intention, which is synonymous with expected outcomes. They find that the perceived benefits of entrepreneurship explain the formation of entrepreneurial intention. Outcome expectations and entrepreneurial intention vary according to an individual's psychological and socio-economic conditions. What further determines entrepreneurial intention is financial security (Van Gelderen *et al.*, 2008), the need for achievement (Dinis, do Paço, Ferreira, Raposo, & Gouveia Rodrigues, 2013), and perceived sacrifices (Wu & Li, 2011).

Various research perspectives argue that SCCT is a valid framework to study the relationship between SE and entrepreneurial intention (Austin & Nauta, 2016; Liguori, Bendickson, & McDowell, 2018). Intentions influence the choice of actions and predict future behaviours. Many researches on entrepreneurial intention use Ajzen's (1991) and Ajzen's and Fishbein's (2000) theory of planned behaviour (Aloulou, 2015; Krueger *et al.*, 2000; Van Gelderen *et al.*, 2008; Zhang, Wang, & Owen, 2014). Another group reveals a relationship between SE and entrepreneurial intention (Bayrón, 2013; Bar Nir *et al.*, 2011; Kristiansen & Indarti, 2004; Segal, Borgia, & Schoenfeld, 2002). I derive the following hypotheses from extant literature:

H3: One's perception of consequences for performing a behaviour influences the conviction to perform an activity.

H4: Self-efficacy positively influences entrepreneurial intention.

H5: One's conviction to perform an activity influences entrepreneurial intention.

The Mediating Role of Entrepreneurial Self-Efficacy

SE influences a person's behaviour to start a business and the level of "task persistence" in challenging times (Bandura, 1986, quoted in Boyd & Vozikis, 1994). Individuals with higher SE in their early stages of career will possess high entrepreneurial intentions and will be involved in entrepreneurial tasks (Boyd & Vozikis, 1994). SE can be general or domain-specific. General SE is an individual's ability to perform a broad range of tasks (Luszczynska, Scholz, & Schwarzer, 2005), whereas domain-specific SE is

a person's ability to effectively perform various entrepreneurial tasks (Chen, Greene, & Crick, 1998). Research proves that SE influences a person's career choice (Lent *et al.*, 1994) and determines entrepreneurial intentions and behaviour (Fietze & Boyd, 2017; Laguna, 2013; Naktiyok, Karabey, & Gulluce, 2010; Newman, Obschonka, Schwarz, Cohen, & Nielsen, 2019; Pihie & Bagheri 2013; Ren, Ping, & Li, 2018; Sequeira, Mueller, & Mcgee, 2007; Sušanj, Jackopec, & Miljković, 2015; Wilson, Kickul, & Marlino, 2007; Zhao, Seibert, & Hills, 2005). While many researchers find direct influence of entrepreneurial self-efficacy (ESE) on entrepreneurial intentions (EI) the role of ESE as a mediating variable between SE and EI of graduate students is less researched in Oman. McGee *et al.* (2009) assert that scholarship should include ESE in the EI model. ESE is one's ability to start and successfully manage a venture with required entrepreneurial skills in marketing, human resources, and finance (Chen *et al.*, 1998). Hence, I propose the following hypotheses:

- H6:** Entrepreneurial self-efficacy positively influences entrepreneurial intention.
- H7:** Entrepreneurial self-efficacy mediates the relationship between self-efficacy and entrepreneurial intention.

MATERIAL AND METHODS

This study is descriptive and quantitative in nature. The sample included graduate students enrolled in a business program at a private college in Muscat. A non-probability method of sampling was used. Using judgemental sampling, three hundred questionnaires were distributed to the final year undergraduate students, out of which 274 students responded. Among the received responses, 263 responses were usable. The final sample constituted 137 male and 126 female students. The data was collected through self-administered questionnaire. The questionnaire consisted of eight items measuring general SE adapted from Chen, Gully, and Eden (2001), and six statements measuring entrepreneurial intention adapted from Liñán and Chen (2009). One global statement measured ESE and entrepreneurial goals, and four independent items measured outcome expectations were adapted from Segal *et al.* (2002). Outcome expectations were measured by assessing respondents' perception of the ability of self-employment in "making money," "providing financial security," "achieving independence," and "satisfying the need for achievement." The questionnaire was pilot tested on 25 students for reliability. Based on the measure of reliability, the eight-items scale measuring general SE was reduced to six items and the six-items scale measuring entrepreneurial intention was reduced to three items. The final reliability measures of the 15-item scale (excluding demographic variables) was 0.958. Table 1 details the reliability measures. Data was analysed with AMOS 23 and SPSS.

Table 1. Reliability measures

Mean	Minimum	Maximum	Variance	N of Items	Cronbach's Alpha
3.712	2.970	4.916	0.244	15	0.958

Source: own calculation in SPSS.

RESULTS AND DISCUSSION

The hypotheses were tested by applying multiple regression in SPSS. The aggregated scores of general SE items and EI items were used to run the regression.

Outcome expectations were assessed based on four individual measures that focused on earning money, financial security, independence, and the achievement of needs. The following statements were used to measure outcome expectations: “What do you think is the probability of making money by being self-employed?”; “What do you think is the probability of having financial security by being self-employed?”; “What do you think is the probability of being independent if you are self-employed?”; “What do you think is the probability of satisfying your need for achievement if you are self-employed?” Aggregated scores of SE statements were considered when running the regression path. Table 2 shows the standardised regression weights with R- Squared measures for OE and GSE.

Table 2. Standardised regression weights

Variables with path			Estimate	S.E.	C.R.	p
Making Money (MM)	<---	General Self-Efficacy (GSE)	0.908	0.041	35.127	***
Financial security (FS)	<---		0.713	0.058	16.473	***
Independence (IND)	<---		0.639	0.016	13.431	***
Need for Achievement (NACH)	<---		0.947	0.028	47.913	***

Significant codes: *** 0.001. R-squared = 0.72.

Source: own calculation in SPSS.

Referring to the statistics in Table 2, we may infer that general self-efficacy (GSE) influences the outcome expectation variables (MM, FS, IND, NACH) with a good R-squared value of more than 70%, except for the variable independence, which is less than 70%.

Entrepreneurship goal was measured through a global statement that elicited response from students by asking “How likely are you to become an entrepreneur?” Table 3 shows standardised regression weights with R- Squared measure for EG and GSE.

Table 3. Standardised regression weights

Variables with path			Estimate	S.E.	C.R.	p
Entrepreneurship Goals (EG)	<---	General Self-Efficacy (GSE)	0.99	0.044	33.248	***

Significant codes: *** 0.001. R-squared = 0.72.

Source: own calculation in SPSS.

Referring to the statistics in Table 3, we may infer that GSE determines student entrepreneurship goals with 72% of explained variance.

Table 4 shows the standardised regression weights with R-squared measures for OE and EG.

The statistics from Table 4 reveal that all four variables account for 86% of the total explained variance. Two variables, namely “financial security” and “independence” have a negative influence on entrepreneurship goals. Hence the above two variables fail to positively influence entrepreneurship goals.

Table 4. Standardised regression weights

Variables with path		Estimate	S.E.	C.R.	p	
Entrepreneurship Goals (EG)	<---	Making Money (MM)	0.835	0.020	36.431	***
	<---	Financial security (FS)	-0.082	0.024	-3.558	ns
	<---	Independence (IND)	-0.067	0.097	-2.904	ns
	<---	Need for Achievement (NACH)	0.393	0.022	17.141	***

Significant codes: *** 0.001; * 0.05 'ns' not significant. R-squared = 0.862.

Source: own calculation in SPSS.

EI was measured by eliciting responses from the students through such statements as, "I am ready to do anything to be an entrepreneur," "I will make every effort to start and run my own firm," "I think seriously of starting a firm." The aggregated scores of the three items were used as a single measure. Table 5 shows the standardised regression weights with R-squared measure for EI and GSE.

Table 5. Standardised regression weights

Variables with path		Estimate	S.E.	C.R.	p	
Entrepreneurial intention (EI)	<---	General Self-Efficacy (GSE)	0.895	0.037	32.445	***

Significant codes: *** 0.001. R-squared = 0.80.

Source: own calculation in SPSS.

The statistics from Table 5 reveal that SE influences EI of the students. GSE explains entrepreneurial intention of the students to the extent of 80%.

Table 6 shows the standardised regression weights with the R-Squared measure for EI and EG.

Table 6. Standardised regression weights

Variables with path		Estimate	S.E.	C.R.	p	
Entrepreneurial intention (EI)	<---	Entrepreneurship Goals (EG)	0.933	0.019	41.843	***

Significant codes: *** 0.001. R-squared = 0.87.

Source: own calculation in SPSS.

The statistics from Table 6 reveal that the students' entrepreneurship goals positively influence their EI. The goals explain their EI to an extent of 87%.

The students' ESE was measured by eliciting response from them about the global statement, "How confident are you that you have all the necessary knowledge, skills, and abilities to perform the tasks and activities necessary to become an entrepreneur?" Table 7 shows the standardised regression weights with the R-Squared measure for EI and ESE.

The statistics from Table 7 reveal that the students' ESE positively influences the entrepreneurial intention of the students with an explained variance of 81%.

To test the hypothesis 7 (H7), the study measured the direct and indirect effect of SE on EI with bootstrapping. Path analysis with bootstrapping was performed with the variables of

SE, EI, and ESE. The Tables 8 and 9 show standardised regression weights with the R-squared measure, along with the direct and indirect effect of SE on EI of the graduate students.

Table 7. Standardised regression weights

Variables with path		Estimate	S.E.	C.R.	p	
Entrepreneurial intention (EI)	<---	Entrepreneurial Self-Efficacy (ESE)	0.901	0.021	33.588	***

Significant codes: *** 0.001. R-squared = 0.87.

Source: own calculation in SPSS.

Table 8. Standardised regression weights

Variables with path		Estimate	S.E.	C.R.	p	
Entrepreneurial Self-Efficacy (ESE)	<---	General Self- Efficacy (GS)	0.889	0.050	31.479	***
Entrepreneurial intention (EI)	<---	Entrepreneurial Self-Efficacy (ESE)	0.502	0.040	9.716	***
	<---	General Self- Efficacy (GS)	0.448	0.070	8.663	***

Significant codes: *** 0.001. ESE R-squared = 0.79; EI R-squared = 0.79.

Source: own calculation in SPSS.

Table 9. Direct and indirect effects

Hypothesis	Direct effect	Indirect effect	Result
GS→ESE→EI	0.607* (GS→EI)	0.605* (GS→ESE→EI)	Partial mediation

Significant code: * 0.05.

Source: own calculation in SPSS.

The result reveals that SE has a significant direct effect on EI and significant indirect effect on EI through ESE.

Based on empirical studies (Table 2 – Table 9) we conclude that hypotheses (H1-H7) are confirmed.

Model Development

A model was developed with all the variables (hypotheses) and tested for its path relationship in a single run. Figure 1 shows the model with the path co-efficient.

Figure 1 reveals that the outcome expectation measures “financial security” and “independence” did not significantly influence EG of the students. However, the outcome expectation “probability of making money” significantly influenced the EG of the students. We may also observe that the effect of individual SE on EG and EI was significantly reduced. The prominent change may be observed in the mediating effects of ESE, in which partial mediation changed to full mediation. Full mediation implies that the role of SE in determining EI of the students is significant when it is mediated through ESE of the students. The direct relationship between the individual SE and EI is insignificant. Table 10 shows the mediating effect achieved in the model.

Based on the results of the model (Figure 1), a revised model was developed (see Figure 2). The revised model eliminated 1) the financial security and independence path on

entrepreneurship goals; 2) the path established between self-efficacy and entrepreneurial intention; and 3) the path established between self-efficacy and entrepreneurship goals. Figure 2 shows the revised path model with the standardised regression weights.

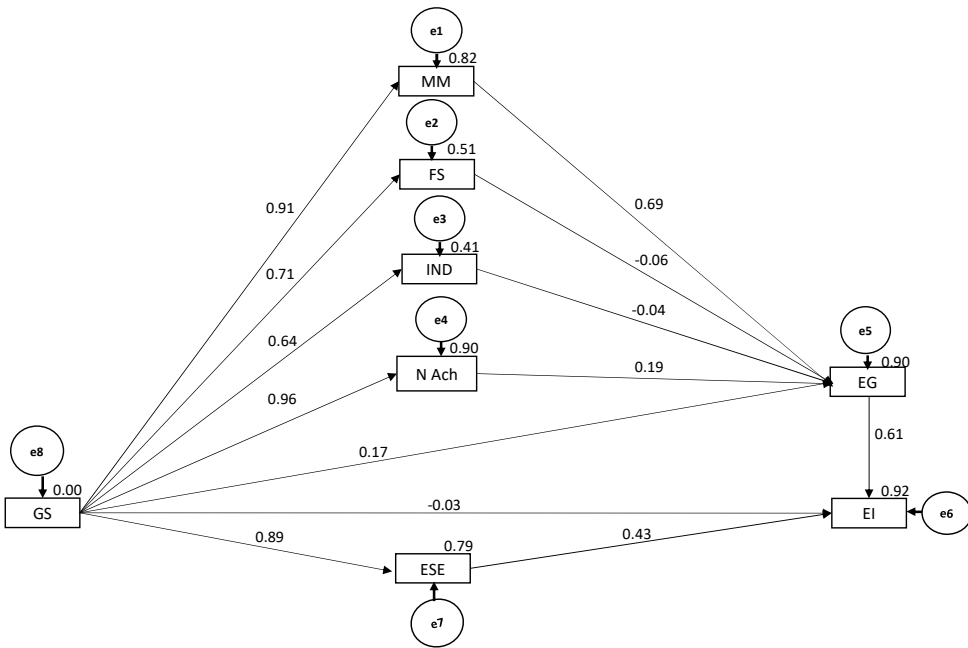


Figure 1. Path diagram of the model with standardised regression weights

Source: own calculation in AMOS.

Table 10. Direct and Indirect effects

Hypothesis	Direct effect	Indirect effect	Result
GS→ESE→EI	0.889*** (GS→EI)	0.934*** (GS→ESE→EI)	Full mediation

Significant code: *** 0.001.

Source: own calculation in SPSS.

The revised path model shows a good R-squared measure and significant path-coefficient. An improvisation of the revised path model was attempted by changing the path relationship, but a valid model could not be developed. Hence, the revised model (Figure 2) is the final outcome of this research.

This research studied the entrepreneurial intention of graduate students in Oman by focusing on the roles of SE and ESE in the SCCT framework. The results of the revised model (see Figure 2) differ from the work of Lent *et al.* (2002). When SE was tested independently (excluding other variables) for its relationship with EI, the results established a positive relationship, which is similar to the findings in other research studies (Laguna, 2013; Pihie & Bagheri, 2013; Sušan *et al.*, 2015; Wilson *et al.*, 2007; Zhao *et al.*, 2005). The students with high SE showed higher interest in achieving EG, which implies their motivation to start own business. The research established a positive relationship between the students' SE

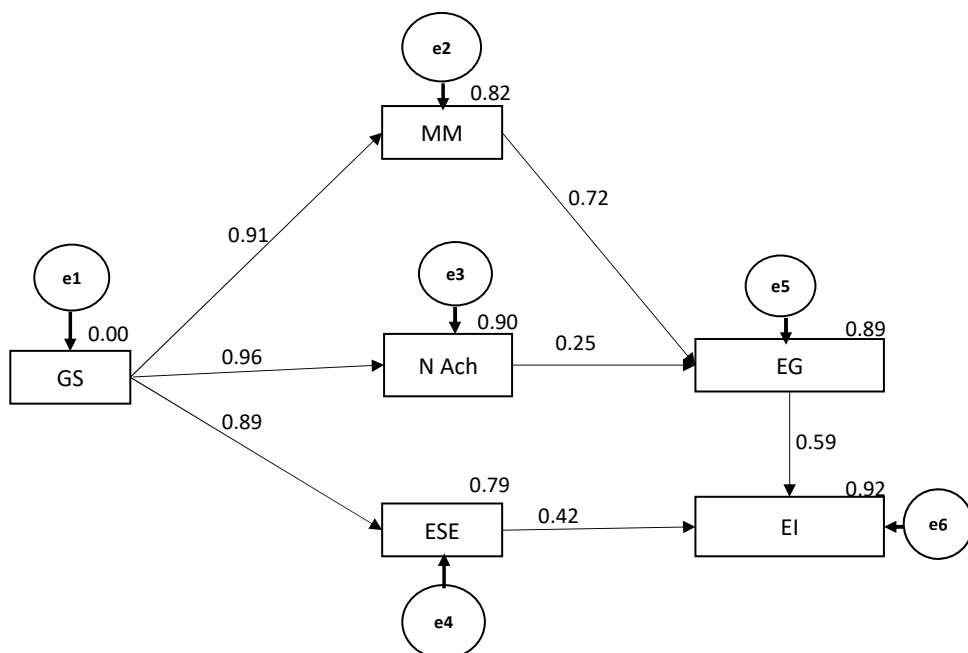


Figure 2. The revised path diagram of the model

Source: own calculation in AMOS.

and all the variables of outcome expectations. The above finding confirms the role of SE in determining the outcome expectations of the students. Interestingly, not all variables of outcome expectations determined the students' EG. The study revealed that students who expected to make more money through their own ventures had stronger EG, which in turn positively determined the EI of the students. The students prefer to be financially secured by being employed in a firm, thus being risk-averse.

Omani students do not choose entrepreneurship as their career due to the fear of failure (Belwal, Al Balushi, & Belwal, 2015). Both the government of Oman and Omani educational institutions should play a significant role in nurturing graduate students' attitude in assuming entrepreneurial risks. This can be done at universities and colleges by emphasizing entrepreneurship courses through building an entrepreneurship curriculum based on the industry-academic partnership to nurture students' business acumen. Oman lacks systematic policies that govern the relationship between colleges and industries (Issa, 2016). Hence there is an imperative to develop strategic policies that develop entrepreneurship education. The study's results are similar to the findings of Chen *et al.* (1998) that graduate students' entrepreneurial SE determines their EI. Graduate students' SE influences their EI both directly and indirectly through their ESE. A significant partial mediation was obtained. However, the above discussion becomes worthwhile when each of the above hypotheses is treated independently, excluding other variables. When all the hypotheses were considered in a single run (Figure 1), the outcomes varied. The explanatory power of SE for EI and EG was not significant, which implies that SE predicts EI better when it is treated alone as the choice of determinant. SE failed to establish relationship with EI in a multivariate ap-

proach. However, the role of SE in determining EI can be ruled out completely, as it has a considerable indirect explanatory power. Given the above scenario, a revised model was developed (Figure 2) with ESE as the mediating variable. We should mention that many studies establish a direct relationship between ESE and EI (Bar Nir *et al.*, 2011; Krueger *et al.*, 2000; Pihie & Badheri, 2013; Wilson *et al.*, 2007; Zhao *et al.*, 2005), but do not establish a mediating relationship. This study differs from other studies, as it claims that SE explains EI in the presence of ESE. Besides ESE, EI are determined by the graduate students' EG, which in turn influenced the outcome expectation variables such as "making money" and "need achievement." Noteworthy, the "need achievement" had less explanatory power in the first model (Figure 1) but gained in the revised model (Figure 2).

CONCLUSIONS

Based on the results, we suggest that universities and colleges should focus on developing Omani graduate students' mastery experience as recommended by Wood and Bandura (1989). Overall, the current article established the roles of SE and ESE in determining EI. The results of the study suggest ESE as a critical mediating factor that determines EI of undergraduate students. ESE also mediates the influence of belief and motivation on EI. (Odoardi, Galletta, Battistelli, & Cangialosi, 2019). Educational institutions in Oman should develop courses that nurture ESE of the students. Entrepreneurship clubs will stimulate entrepreneurial learning (Pittaway, Rodriguez-Falcon, Aiyegbayo, & King2011), which helps developing students' SE. Exploring the exact requirements of an entrepreneurship course that develops the ESE of graduate students is beyond the scope of this study. However, we may recommend that institutions reinforce Omani students' confidence by training them in technical aspects, such as market research, product development, and commercialisation, which will help to increase their ESE. Moreover, the ESE of graduate students can be developed by training them with the transferrable skills in areas related to business, such as marketing, finance, procurement, and human resources management, which will develop domain-specific skills.

The role of the Ministry of Higher Education is also imperative in developing the SE and ESE of graduate students by building effective educational policies. Hence, nurturing ESE will lead to the development of entrepreneurship, which is much required in Oman, as the economy faces trying times due to the decline in the economic contribution from the hydrocarbon sector. The Ministry of Higher Education in Oman has mandated all the colleges to include entrepreneurship as a course in undergraduate programs, but this course is dealt as one of the subjects for graduation. In such circumstances, this research informs practitioners and researchers about the need to nourish domain-specific ESE skills to develop holistic academic programs, which can inculcate the spirit of entrepreneurialism and nurture EI among graduate students. After all, the government has a substantial role in nurturing the relationship between entrepreneurship and economic growth (Saber & Hamdan, 2019). Oman's government has invested in promoting Small and Medium Enterprises as the country's economic engine, as this would facilitate diversification, promote entrepreneurship, and increase employment opportunities. Government's initiatives can be supported by academicians imparting the skills through practical learning rather than focusing on theoretical courses, as asserted by Piperopoulos and Dimov (2015).

The associative relationship between SE and ESE in determining the EI should help educational policymakers, entrepreneurship educators, and universities to develop and implement multiple pedagogies so as to impart SE and ESE among graduate students.

The limitation of the study is the use of self-reported questionnaire to assess SE and ESE of students. As multiple studies suggest, ESE is a multi-dimensional construct, although there is no agreement among the researchers on the measurement construct, while ESE measuring instrument has ample room for refinement. There is also room to broaden the scope of samples by including undergraduate students from across the country. However, these limitations do not influence the study's outcome quality. As a future research direction, in light of the developed alternative model, using cognitive individual related factors of the SCCT, including ESE as a mediating variable, and incorporating the role of situational factors like environment, education, infrastructural support, resource capabilities, and socio-cultural factors, will definitely contribute to the existing body of knowledge in entrepreneurship research. Moreover, the role of psychological constructs should be thoroughly investigated for their greater understanding. Lastly, in the future, an expanded model of the above measures should be developed to empirically test and validate a comprehensive framework and research graduate student's EI; thus developing appropriate intervention strategies for both academic and practical purposes.

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