THE MODERATING ROLE OF PERCEIVED UNIVERSITY ENTREPRENEURSHIP SUPPORT ON THE RELATIONSHIP BETWEEN ONLINE SELF-REGULATED LEARNING AND SAUDI STUDENTS' ENTREPRENEURIAL INTENTIONS

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ABSTRACT

This research based in Saudi Arabia seeks to confirm the relationship between OSRL (Online Self-Regulated Learning) and EI (Entrepreneurial Intention). Furthermore, investigates whether PUES (Perceived University Entrepreneurship Support) moderates the relationship between OSRL and EI. Therefore, a literature review was conducted to seek out the theoretical underpinnings of SRL (Self-Regulated Learning) and how EI is established based on TBP. For this purpose, an online survey with 5-point Likert scale questions was collected from 271 undergraduate students at Saudi universities. The OLS (ordinary least squares) regression-based path analysis was applied and found consistently within the existing literature. SRL was seen to have an impact on EI in each of its six aspects. However, moderation of PUES findings is mixed where substantial significance was found to be based on a university's support in the form of resource availability for performance-related activities rather than a conceptual theory.

Keywords: Online Self-Regulated Learning (OSRL), Perceived University Entrepreneurship Support (PUES), Entrepreneurial Intention (EI), Ordinary Least Squares (OLS), Regression-Based Path Analysis, Theoretical Planned Behaviour (TPB), Saudi Arabia.

INTRODUCTION

Education of the masses is one of the pivotal ways of individual, personal and societal growth. In our modern world that is advancing rapidly with the aid of fast-paced technology, education and understanding of our environment and the world is essential to make progress. Without concepts, our knowledge is limited. Hence the greatest institutions focus on building, thinking, studying, and reflecting the capacity of their students on great conceptual models which have been formed after analysis of educational psychology. One of the latest yet historic techniques that have emerged in helping to do so is SR which lies at the heart of our research. Entrepreneurship has been viewed as a critical contributor and an economic engine of every country. It helps in creating new jobs and increases innovation and competitiveness in the labour market (Barba-Sánchez et al., 2022).

Associated with educational aims, SRL is a form of learning that involves metacognition (thinking about one's thinking), strategic action (planning, monitoring, and evaluating personal progress against a standard), and the basic motivation and willingness to learn. Self-regulated learning associates successes or failures with individual factors within their

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control. This shows a higher understanding and belief in self-efficacy by controlling their learning environment and regulating individual actions toward personal learning goals. According to research conducted at the University of Hong Kong in 2020, Self-assessment is a fundamental skill in Self-regulated learning. It occurs in almost all of its stages in different patterns and shapes and is a crucial parameter to determine the self-learning pace of students (Yan, 2020).

The COVID-19 pandemic transformed the global shape in areas of business, education, healthcare, and technology. A paradigm shift took place on educational grounds with the movement toward e-learning. As the world began to protect itself behind screens during quarantine, most people began working and studying from home. This also applied to studying methodologies such as SRL becoming online. The impact of SRL through books and online itself has different outcomes and results in the thinking process of an entrepreneur, or any learner.

A recent study (Maheshwari et al., 2022) quotes "*The outbreak of COVID-19 has affected entrepreneurship, and hence future research may consider the impact of the pandemic, such as online education, macroeconomic factors, etc, on EI of university students*".

SRL's history traces back to the eighties (Pintrich et al., 1993; Zimmerman, 1986). Currently, according to Panadero (2017), six key models of SRL have been developed. He went to great depths in reviewing these different models of SRL from different perspectives such as: "*history and development, the model, empirical support, and instruments constructed*". It was particularly apparent when reviewing those models that they had changed over time. So those models are only a reflection of the theories the authors hold regarding SRL. One such example is the initial Triadic model presented by Zimmerman (1989). According to this 1989 model, three factors that influence a learner's ability to self-regulation are the self, environment, and behaviour, all three of which are interlinked. The self-factor is the individual's ability to set a goal and objective related to their learning task and their capacity of being able to monitor activities to meet their aims. The behavioural aspect involves judging self-reactions and making observations to see their progress towards learning. The last factor is the environment, be it the physical workplace, surrounding people, emotional support, or anything that may affect the learning outcome of an individual. This factor also includes a formative assessment from peers and co-workers, as well as surrounding assisting people e.g. teachers and mentors, which eventually leads to the student developing the necessary skills for Self-regulated learning (Nicol, 2009). Little research has been done to study learning analytics and their interference with the self-regulated learning capabilities of students. Moreover, these studies have been based on already existing data and facts, rather than conducting new research and deducing new data accordingly (Tormey et al., 2020). All these factors have a mutually exclusive relationship where one factor can alter the other. Portfolio assessment is yet another productivity-generating factor in SRL, whereby its feedback processes are seen to help students develop skills necessary for SRL (Lam, 2014)

Some ten years later, Zimmerman introduced the cyclical model presented of learning which was significantly different from his previous triadic model (1989) Figure 1 known as the Cyclical model Figure 2 (Zimmerman, 2000).

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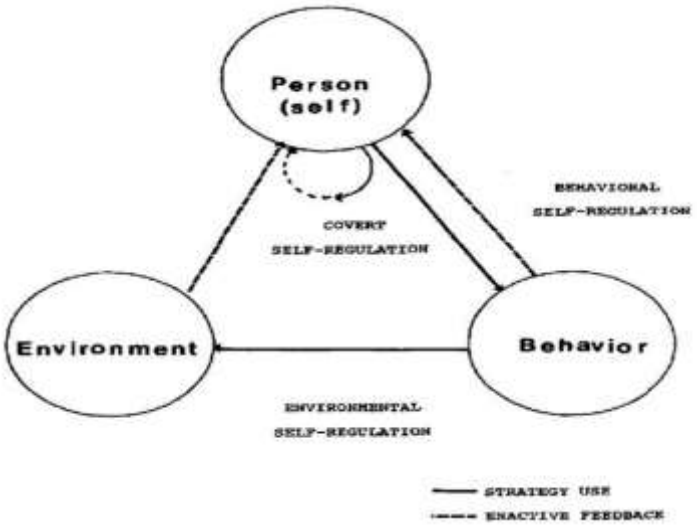

FIGURE 1
TRIADIC MODEL (Zimmerman, 1989)

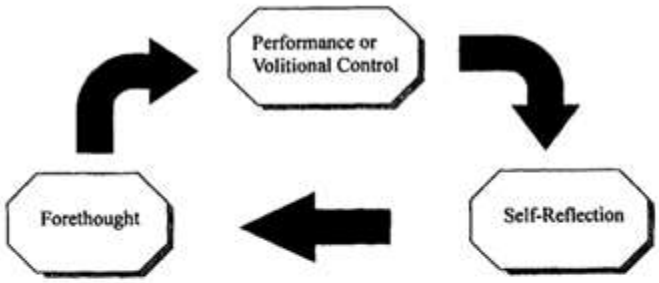

TABLE 1 Phase Structure and Subprocesses of Self-Regulation

Cyclical self-regulatory phases		
Forethought	**Performance/volitional control**	**Self-reflection**
Task analysis	Self-control	Self-judgment
Goal setting	Self-instruction	Self-evaluation
Strategic planning	Imagery	Causal attribution
Self-motivation beliefs	Attention focusing	Self-reaction
Self-efficacy	Task strategies	Self-satisfaction/affect
Outcome expectations	Self-observation	Adaptive-defensive
Intrinsic interest/value	Self-recording	
Goal orientation	Self-experimentation	

FIGURE 2
CYCLICAL MODEL (Zimmerman, 2000)

Describing the cyclical model consists of three components, forethought, performance, and self-reflection. In the forethought phase, students are meant to analyse the task, set goals, and plan how to reach them. In the performance phase, students execute the task, while monitoring how they are simultaneously progressing, with several self-control strategies to keep themselves cognitively engaged and motivated to finish the task. Finally, in the self-reflection phase, students assess how they have performed the task, making attributions about their success or failure. These attributions generate self-reactions that can positively or negatively influence their learning process.

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For this research, the basis of the cyclical model is assumed as the theoretical viewpoint of the SRL process as described by Zimmerman (2000). The primary notion is that the SRL process consists of three phases (Forethought, Performance, and Self-reflection). During each of those stages, several key activities take place which are inherently characteristic of the phase. Therefore, the assumption is that provided the learner performs the tasks of each phase SRL will be attained. Zimmerman (2000) his model consists of both Task analysis and Self-motivation (aka self-efficacy in the lit.) However, according to Boekaerts (1996), these two tasks fall within the categories of cognitive and motivational self-regulation respectively. This research attempts to evaluate and establish the link between the cognitive tasks a learner should do and the intentions they develop for entrepreneurial endeavours Figure 3 (Boekaerts, 1996).

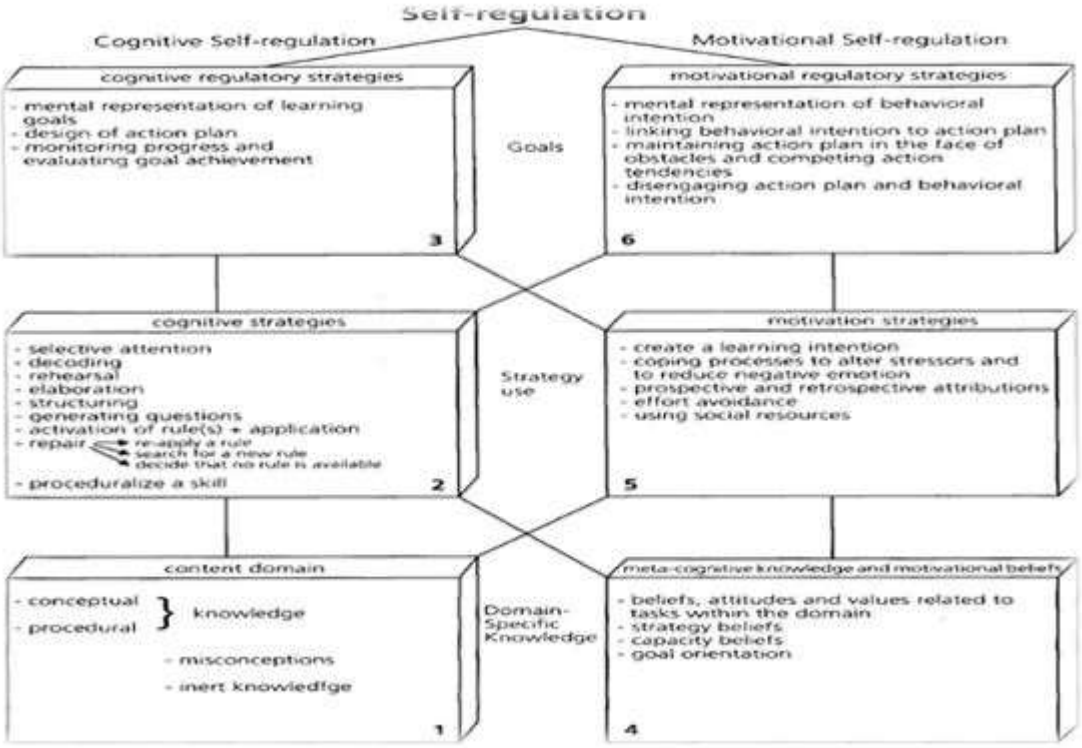

FIGURE 3
SELF REGULATION

LITERATURE REVIEW

As previously established, Zimmerman (2000) identified task analysis as a key task during the phase of forethought within the SRL process. Barnard-Brak et al. (2010) took this a step further in their research to establish learner profiles in which they associated goal setting and environment structuring (choosing where to study) with the phase of forethought. They also found a strong relationship between those activities and that phase, through empirical research. In particular, through the setting of learning goals, the cognitive aspect of forethought is enabled. However, simultaneously the motivational facet needs to take place for the student to attain self-efficacy. Boekaerts (1996) identified behavioural intention and its linking to an action plan key

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to motivational regulation. So, goal setting in and of it is insufficient without behavioural intention.

When it comes to behavioural theory, two theories attempt to explain the process of intention. According to Schlaegel & Koenig (2014), there are 98 studies on TPB and EEM which evaluate the intention of which the former is more significant (Krueger et al., 2000; Liñán & Chen, 2009). According to Lortie & Castogiovanni (2015), 42 articles show a relationship between Entrepreneurship and TPB, And 21 claim TBP to be a useful means of identifying entrepreneurial intention. TPB originally coined by Ajzen (1991) defined intention to conclude, subjective norm, and PBC which form the basis of defining intention.

A recent study by Lihua (2022) shows how EI and TPB have a significant correlation and influence on one another. This study highlights the flaws in modern educational research regarding TPB and states "*Currently, there are two bottleneck problems in the research of college students' entrepreneurial intention and entrepreneurial behaviour: lack of comprehensive and systematic theoretical framework and empirical analysis to reveal the role path that affects entrepreneurial intention and most studies ignore the gap between entrepreneurial intention and behaviour*"

Another factor that we have taken as a hypothesis in our study and is thought to positively influence EI is goal setting. Trus Erikson (2002) states the positive impact of goal setting in his research by stating how it's linked to ideas about personal capabilities and that business institutions must influence individuals' self-belief, which is a requirement for achieving congruent entrepreneurial goals. Similarly, the other hypothesis, environmental structure, has been shown to have a similar impact on EI. Students cognitively set their goals and define their environmental structure. According to dual processing theory by Boekaerts (1996) simultaneously, motivationally, the intention is established through a synthesising process of the TPB factors which will guide the goals and environmental structure that students define for themselves. Other studies that support the theory regarding the role environmental structuring plays in enhancing thought processes and investment opportunities include Fini et al. (2012). In our research, we seek to further scrutinise and understand whether there is an actual link between those cognitive "*factors goal setting and environmental setting*" and entrepreneurial intention, motivationally within the phase of forethought of the cyclical model of SRL by Zimmerman (1989).

> ***H_1:*** *Online Self-Regulated Learning has a significant positive direct effect on students' entrepreneurial intentions.*
>
> ***H_{1a}:*** *Goal Setting has a significant positive direct effect on students' entrepreneurial intentions.*
>
> ***H_{1b}:*** *Environment Structuring has a significant positive direct effect on students' entrepreneurial intentions.*

The second phase in the cyclical model of SRL by Zimmerman (2000) is referred to as 'Performance or Volitational control'. Although, Zimmerman (2000) prescribed self-control and self-observation during this phase. Barnard-Brak et al. (2010) in line with Boekaerts (1996) SRL model pointed out that strategic processes take place during this stage with activities like: "*Task strategies, Time management, and Help-seeking*". While these are cognitive strategies, again in parallel motivational strategies take place (Boekaerts, 1996). Of particular interest to this

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research is the creation of learning intent. As opposed to, in the forethought phase intent was established mentally, now actual intent is created.

As far as the literature is concerned, there is a clear link established between the strategic SRL tasks "*Task strategies, Time management, and Help-seeking*" (Barnard-Brak et al., 2010). Personal initiative (PI) has been the centre of the latest research and refers to the work behaviour of employees "*characterized by its self-starting nature, its proactive approach and by being persistent in overcoming difficulties that arise in the pursuit of a goal*" (Fay & Frese, 2001).

Whereas some research shows that people with a high PI are likely to invest less in entrepreneurship given they have high job satisfaction and working goals (Lee et al., 2011), other scholars show that such individuals might be keener to have a greater EI given they proactively find and recognize opportunities, (Prabhu et al., 2012) actively build a social network, (Thompson, 2005) and access resources necessary for entrepreneurship (Shane & Nicolaou, 2015). Some tasks such as meta-learning tasks enhance the student's ability to become more self-reflecting and hence make them independent learners. This is because they can reflect better on their study strategy, and as a result, become better learners for the rest of their lives (Colthorpe et al., 2018).

"*Time management*" is a key factor in promoting the success of any task if utilized efficiently. It is said that Entrepreneurs are marked as "now-oriented" people. (Bird, 1988). They live in the present, plan rarely for the future (Bowen and Jones, 1985), and reflect minimally on the past (Bird, 1988). Time management may not be perceived that vital but is a positive predictor of achievement. This is because students who are good time managers are seen to have more independence and autonomous motivation (Morjan et al., 2020).

Another element of SRL "*Help-seeking*" is the other variable that we analyze in our study. It is noted that especially in risky ventures, asking for help is another push to entrepreneurial intentions which gives individuals the confidence to invest and not subject themselves to excessive loss as shown by the latest study (Au et al., 2016). The greater the help sought, the more likely students and pre-established entrepreneurs would intend to start a new business with the confidence and motivation it gives them to their abilities, given the help serves as feedback to help regulate their tasks. Another study based on University students in China (Mei et al., 2022) highlights the issue of existing EI among students, but the inability of being able to convert it into practical entrepreneurial behaviour. Its results found and supported our hypotheses of how help-seeking in the form of family mediation positively moderates and reinforces the relationship between entrepreneurial intention and behaviour. In this study, we aim to analyse and further research all these variables in given the hypothesis where they are all assumed to share a positive correlation with EI.

H_1: *Online Self-Regulated Learning has a significant positive direct effect on students' entrepreneurial intentions.*

H_{1c}: *Task Strategies have a significant positive direct effect on students' entrepreneurial intentions.*

H_{1d}: *Time Management has a significant positive direct effect on students' entrepreneurial intentions.*

H1e: Help Seeking has a significant positive direct effect on students' entrepreneurial intentions.

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The final phase of Zimmerman (2000) cyclical model of SRL deals with the afterthought of the learning process. It's during this stage that students come to terms with what they have learned and look back on what they have achieved. This process is also known as checking the gap between what the learner intended to attain and what they attained (Carver, 2004; Carver & Scheier, 1982; Carver & Scheier, 1990; Koole et al., 2011; Mann et al., 2013). This is significant as a cognitive activity as a motivational/intentional task through which the learners realise their achievements or the lack thereof. Intentionally, however, they can reflect on what has been achieved and realign their intentions during the self-evaluation.

Another research (Auzoult et al., 2016) aimed to show that private self-consciousness (SC) and core self-evaluations (CSE) influence the formation of students *via* the perceived feasibility of entrepreneurship and their results confirmed to show that CSE has a positive impact on the feasibility and desirability which directly mediates their effect on intention. It also portrayed that private SC has a positive direct effect on intention. Self-evaluation is perhaps the most common mode of engaging students in feedback and evaluation processes, which in turn are seen to have a positive effect on intention, as students get a sense of self-actualization and dignity when counting their positive traits, and believe they, can achieve almost any entrepreneurial objective with persistent efforts (Deneen & Hoo, 2021).

Given the above evidence, while self-evaluation isn't directly linked to intention, it is known to be important because learners will re-evaluate what they have learned which marks a turning point on whether they either abandon their intentions, re-adjust their intentions based on new goals, or lastly, re-vow their intention in their pursuit. Therefore, Self-evaluation is a key turning point for students in the process of establishing firm entrepreneurial intention. For those able to maintain the motivation of entrepreneurial intent. Either they have identified new learning goals that are suiTable to their entrepreneurial ambitions or continue to work towards their existing goals to fulfil their entrepreneurial intent. For this research, we seek to establish its significance on EI.

H_1: *Online Self-Regulated Learning has a significant positive direct effect on students' entrepreneurial intentions.*

H_{1f}: *Self-evaluation has a significant positive direct effect on students' entrepreneurial intentions.*

Within the phase of self-evaluation, students reflect on their performance and what they have learned as previously discussed. As part of this evaluation process, students could ask themselves: "*to what extent are my achievements a consequence of university support*". So, it's during this stage that student perception is cemented in their minds. This brings us to the conclusion that students need concrete opportunities to practice self-evaluation and self-assessment skills in their early years of education so that when they reach higher levels of education, self-assessments and evaluations are regular tasks for them to build their self-esteem (Jay & Owen, 2016).

Assessment for learning strategies has a great deal of an impact on student self-regulation learning. These are in fact catalysts for self-regulated learning as they determine the mindset and perceptions of students about self-learning to a great extent, controlling their thinking, actions, and feelings on a cumulative level (Hawe & Dixon, 2017).

Perceived University support or as Kraaijenbrink et al. (2010) put it simply "*What do students think of university entrepreneurial support*" is to a certain degree the most important metric of university success. According to Abdelfatah & Radwan (2010), there are three factors

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specific to the individual that may influence their perception. These can be summarised into: "*Prior educational experience, characteristics of learners, how they view the learning environment*". These factors could significantly influence PUES. A study by Tiwari et al. (2019) based on Indian university students investigated perceived feasibility and desirability, perceived social pressure, entrepreneurial educational background, entrepreneurial self-efficacy, and previous work experience in entrepreneurial activities towards entrepreneurship intention and found Entrepreneurial self-efficacy to be the strongest predictor of EI followed by previous experience in entrepreneurial activities, both of which could be healthy factors to be promoted amongst higher education students to promote EI.

Some of the more recent research in this field that looks at the link between UES with EI found that students are not very satisfied with UES in China (Lu et al., 2021). However, not all studies identified a relationship between university support and EI (Osorio et al., 2017; Walter et al., 2013). On the other hand, several research papers did establish a connection (Kraaijenbrink et al., 2010; Lüthje & Franke, 2003; Schwarz et al., 2009) and self-efficacy has been identified as a mediating factor. (Islam, 2019). Furthermore, it seems that several studies have made geographical contributions to evaluating university support for entrepreneurship in countries such as Pakistan (Saeed et al., 2018), Malaysia, Singapore India Trivedi (2016), and Indonesia (Zamrudi & Yulianti, 2020).

Many research studies have been found to impact EI (Bae et al., 2014; Dyer, 1995; Fishbein & Ajzen, 2011; Gorman et al., 1997; Shirokova et al., 2016; Souitaris et al., 2007; Turker & Selcuk, 2009; Wilson et al., 2007; Zhao et al., 2005). Additionally, several empirical studies found UES to positively support EI. Lüthje & Franke (2003) found a conducive entrepreneurial environment to have a positive impact this was supported by Nguyen (2020) in a study on entrepreneurial intention. Although, when entrepreneurship education is delivered inadequately, the university environment can have adverse effects on entrepreneurial intention (Nasiru et al., 2015). Finally, Gurel et al. (2010) found no impact on EI Therefore, EUS and PUES are seen as critical in student development and EI.

Concerning the crucial elements that PUES consists of a difference in opinion still exists where different researchers have described it differently. For example, Lu et al. (2021) used the following five dimensions: "*entrepreneurial education, entrepreneurial climate, entrepreneurship management measures, entrepreneurial practical training conditions, and entrepreneurship services programs*" while, Morris et al. (2017) chose: "*University Curricular Programs, University Co-curricular Activities, University Financial Support*" and finally Saeed et al. (2018) opted for: "*Perceived educational support, Perceived concept development, and Perceived business development*". For this research, the latter variables have been selected to represent PUES. However, instead of evaluating the impact on ESE, we chose to evaluate its moderating role of the relationship between OSRL and EI. The Researchers will rely on the first dimension which is Perceived educational support only to focus on the educational aspect of students. Since we found this to be an open gap in the literature and an opportunity for contributing to the body of knowledge in this field which could have significant insights concerning how Universities seek to empower students for undertaking entrepreneurial ventures. It has been identified that perceived educational support brought forth two progressive states of mind in students (i) Greater autonomy in the students and (ii) construction of more appropriate concepts in them (Lafuente et al., 2014).

> ***H2:*** *Perceived educational support moderates the relationship between Online Self-Regulated Learning and students' entrepreneurial intentions.*

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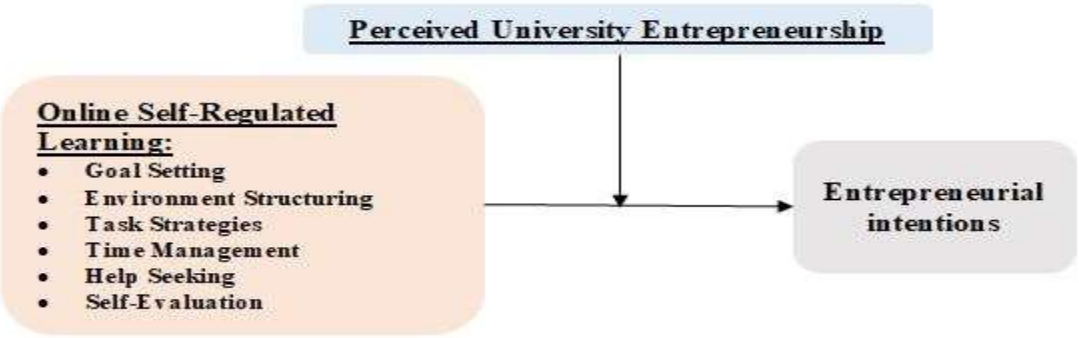

FIGURE 4
RESEARCH MODEL

METHODOLOGY

To test the research model Figure 4, an online survey was conducted among undergraduate students at two public universities, namely Taibah University, Jeddah University, and Umm Al-Qura University in Saudi Arabia during the period from February to May 2022. The survey was in the form of an online questionnaire, self-made and reviewed by peers was done and the questionnaire was distributed by teachers to students manually.

Participants

Participation in the study was voluntary. Consent was taken prior to each individual's participation with all the information of socio-demographic details being kept anonymous to maintain confidentiality. The inclusion criteria were for all students of Taibah University, Jeddah University, and Umm Al-Qura University. There were no specific exclusion criteria.

In total, 271 valid responses were received. Of these, 119 were male (43.9%) and 151 were female (55.7%). 97% of the participants are less than 25 years old. Most of the participants are third-year (64.6%) and fourth-year (30.3%) students.

Measurements

Measurement scales were adapted from the existing literature to ensure validity. The questionnaire was translated from English into Arabic using the forward-backwards translation method (Behling & Law, 2000). All of the constructs are measured with a 5-point Likert-type scale ranging from "*strongly disagree*" (1) to "*strongly agree*" (5).

Online self-regulated learning: According to our theoretical view that OSRL is a process that takes place through different phases or activities. We adapted (Barnard-Brak et al., 2010) scale which consisted of 24 items. Five items measure Goal setting, four items capture Environmental structuring, four items capture Task Strategies, three items capture Time Management, four items capture Help Seeking, and four items capture Self-evaluation.

Perceived university educational support: was measured with a 6-item scale developed by (Kraaijenbrink et al., 2010).

Students' entrepreneurial intentions: were measured with a 6-item scale used by (Bacq et al., 2017; Ceresia & Mendola, 2019; Hsu et al., 2019; Linan & Chen, 2009).

RESULTS

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Test of the Measurement Model

Before testing the proposed hypotheses, we evaluated convergent validity, discriminant validity, individual indicator reliability, and internal consistency reliability to determine the adequacy of our measurement model. Convergent validity was measured by the average variance extracted (AVE). As shown in Table 1, all AVEs exceed 0.5 indicating that each construct reflects the majority of its indicators' variance and exceeds the variance accounted for by that construct's measurement error (Fornell & Larcker, 1981; Hair et al., 2014), and suggesting adequate convergence validity.

Discriminant validity, the distinctiveness of the constructs, was assessed by the square root of a construct's AVE which should be greater than the correlations between the construct and other constructs in the mode. Table 1 shows the correlations among the constructs and the square root of the AVE on the diagonal in bold. All of the values in the diagonal are greater than the correlations, thereby verifying the discriminant validity (Fornell & Larcker, 1981; Hair et al., 2014).

We also verified the individual indicator reliability through the loadings of individual indicators on their assigned constructs. Factor loadings should be statistically significant, standardised loading estimates should be 0.5 or higher, and ideally 0.7 or higher. All the individual indicators loaded are in Table 1, above 0.5 on their respective constructs, verifying individual indicator reliability among the constructs (Hair et al., 2014).

Internal consistency reliability was assessed based on Cronbach's alpha (α) and the composite reliability (CR) of each construct. Both (α) and (CR) values, as shown in Table 1, surpassed the threshold of 0.7 (Hair et al., 2014), which suggests that the measurement model has sufficient internal consistency reliability. In general, all the constructs in our measurement model are valid and reliable.

In addition, the fit indices of the measurement model, $\chi 2$=841.231, df=564, $\chi 2$/df=1.492, p=0.981, the comparative fit index (CFI)=0.951, the tucker–lewis index (TLI)=0.945, the root-mean-square error of approximation (RMSEA)=0.043, standardized root mean square residual (SRMR)=0.047, all showed that the hypothesized eight-factor model provided a good fit to the data (Hair et al., 2014; Thakkar, 2020).

Common Method Bias

Because self-reported data were used in this study, Harman's single-factor test was performed to examine the possible issue of common method bias (CMB) (Podsakoff et al., 2003). Harman's single-factor test assumes that CMB is present in the data set when one factor accounts for more than 50% of the variance of the items in the factor analysis. Based on the unrotated principal component factor analysis, we found that eight factors accounted for 35.35 % of the variance, less than 50%. These results suggest that CMB is not of great concern and thus is unlikely to confound the interpretations of results.

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Table 1
INDIVIDUAL LOADINGS, CRONBACH'S ALPHA, CR AND AVE

Construct	Indicators	Individual loadings	α	CR	AVE
Goal Setting	GS1	0.813	0.893	0.895	0.631
	GS2	0.770			
	GS3	0.804			
	GS4	0.847			
	GS5	0.734			
Environment Structuring	ES1	0.813	0.874	0.874	0.635
	ES2	0.816			
	ES3	0.752			
	ES4	0.805			
Task Strategies	TS1	0.780	0.824	0.827	0.550
	TS2	0.717			
	TS3	0.863			
	TS4	0.578			
Time Management	TM1	0.691	0.813	0.814	0.595
	TM2	0.833			
	TM3	0.784			
Help Seeking	HS1	0.782	0.821	0.824	0.541
	HS2	0.770			
	HS3	0.760			
	HS4	0.620			
Self-evaluation	SE1	0.787	0.853	0.842	0.572
	SE2	0.807			
	SE3	0.683			
	SE4	0.743			
Entrepreneurship educational Support	EDU1	0.778	0.888	0.892	0.582
	EDU2	0.822			
	EDU3	0.845			
	EDU4	0.658			
	EDU5	0.715			
	EDU6	0.743			
students' entrepreneurial intentions	INT1	0.768	0.906	0.908	0.622
	INT2	0.773			
	INT3	0.829			
	INT4	0.827			
	INT5	0.711			
	INT6	0.816			

Descriptive statistics such as mean, standard deviation, correlations, and reliability coefficients of the focal variables used in the study are given in Table 2.

Table 2
MEANS, STANDARD DEVIATIONS, AND CORRELATIONS AMONG THE STUDY VARIABLES

	Mean	SD	GS	ES	TS	TM	HS	SE	EDU	INT
Goal Setting	3.8156	0.60380	0.794							
Environment	4.0323	0.62649	0.774***	0.797						

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Structuring										
Task Strategies	2.3595	0.43710	0.601***	0.470***	0.742					
Time Management	3.6401	0.63453	0.598***	0.543***	0.509***	0.772				
Help Seeking	2.6825	0.47778	0.372***	0.278***	0.186*	0.231**	0.736			
Self-evaluation	3.9664	0.67452	0.670***	0.626***	0.480***	0.513***	0.251**	0.756		
Entre. Educational Support	3.8925	0.70935	0.578***	0.490***	0.433***	0.387***	0.328***	0.397***	0.763	
Entrepreneurial intentions	3.7434	0.75835	0.568***	0.561***	0.468***	0.429***	0.261***	0.417***	0.706***	0.789
Notes: Bold values in diagonal are square roots of AVE; *p<0.05; **p<0.01; ***p<0.001.										

Test of the Hypothesized Model

As support was found for the validity and reliability of the measurement instruments, the hypothesized model was then examined. We tested six models according to the independent variable, each model was tested in two steps, and first, we examined the direct relationship (H_1) using regression analysis. Then, the second step involves running OLS regression-based path analysis using PROCESS macro for SPSS (Hayes, 2013) to test the moderation hypothesis (H_2).

H_1 predicted that online self-regulated learning has a significant positive direct effect on students' entrepreneurial intentions. The results indicated full support for H1. The results of this hypothesis were displayed in step (1) of each model. Table 3, model (1), showed that Goal Setting (β=0.777, p<0.001, 95% CI [0.657, 0.900]) had a significant positive effect on students' entrepreneurial intentions. Thus, the empirical results supported H1a. Likewise, model (2) showed that Environment Structuring (β=0.743, p<0.001, 95% CI [0.640, 0.855]) had a significant positive effect on students' entrepreneurial intentions, providing support for H1b. As well, model (3) indicated that Task Strategies (β=0.897, p<0.001, 95% CI [0.704, 1.068]) significantly and positively effects students' entrepreneurial intentions which support H1c. Also, model (4) provides support for H1d as it showed that Time Management (β=0.580, p< 0.001, 95% CI [0.453, 0.701]) significantly and positively effects students' entrepreneurial intentions. Besides, model (5) indicated that Help-Seeking (β=0.471, p<0.001, 95% CI [0.279, 0.636]) had a significant positive effect on students' entrepreneurial intentions, supporting H1e. Finally, model (6) provides support for H1f as it showed that Self-evaluation (β =0.517, p<0.001, 95% CI [0.385, 0.637]) significantly and positively effects students' entrepreneurial intentions.

Therefore, hypothesis 1 was fully supported, emphasizing that all phases of online self-regulated learning have a significant positive direct effect on students' entrepreneurial intentions.

To test the moderation effect of perceived university educational entrepreneurship support on the relationship between online self-regulated learning (each dimension) and students' entrepreneurial intentions, we run step 2 in each model to test the interaction effect. Results, as presented in Table 3 step 2, indicated that perceived university educational support significantly and positively moderate the relationship between Goal Setting and (β=0.185, p<0.001, 95% IC [0.077, 0.294]), Environment Structuring (β=0.175, p<0.001, 95% IC [0.074, 0.276]), Task Strategies (β=0.208, p<0.05, 95% IC [0.026, 0.390]), Self-evaluation (β=0.156, p=

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0.001, 95% IC [0.047, 0.265]) and students' entrepreneurial intentions. While no evidence was found for the moderation effect of perceived university educational support on the relationship between Time Management (β=0.114, p>0.05, 95% IC [-0.001, 0.230]), Help Seeking (β=0.056, p > 0.05, 95% IC [-0.073, 0.185]) and students' entrepreneurial intentions.

The significant moderation effect of perceived university educational entrepreneurship support on the relationship between Goal Setting, Environment Structuring, Task Strategies, Self-evaluation, and students' entrepreneurial intentions is illustrated in Figure 5-8 respectively. The relationships become stronger when students perceive high university educational entrepreneurship support.

Table 3
RESULTS OF THE DIRECT AND MODERATION HYPOTHESES

		Students' entrepreneurial intentions			
		Step (1) The direct relationship		**Step (2) the moderation model**	
		β (SE)	**95% CI**	**β (SE)**	**95% CI**
Model (1)	Constant	0.778 (.232) ***	[0.299, 1.233]	2.535 (0.758) ***	[1.043, 4.029]
	Goal Setting (GS)	0.777 (.060) ***	[0.657, 0.900]	-0.392 (0.209)	[-0.805, 0.021]
	Educational Support (EDU)			-0.028 (0.211)	[-0.445, 0.388]
	GS × EDU			0.185 (0.055) ***	[0.077, 0.294]
	R^2	0.383		0.634	
				Effect (BootSE)	**95% CI**
	Conditional effects of the focal predictor at values of the moderator (s):	"*Low*" (−1 SD)		0.201 (0.065) **	[0.072, 0.329]
		"*Moderate*" (mean) IC		0.332 (0.061) ***	[0.212, 0.453]
		"*High*" (+1 SD) IC		0.464 (0.079) ***	[0.308, 0.621]
Model (2)	Constant	0.749 (.238) **	[0.298, 1.146]	2.324 (0.755) **	[0.837, 3.811]
	Environment Structuring (ES)	0.743 (.058) ***	[0.640, 0.855]	-0.317 (0.199)	[-0.709, 0.074]
	Educational Support (EDU)			-0.023 (0.203)	[-0.423, 0.377]
	ES × EDU			0.175 (0.051) ***	[0.074, 0.276]
	R^2	0.376		0.657	
				Effect (BootSE)	**95% CI**
	Conditional effects of the focal predictor at values of the moderator (s):	"*Low*" (−1 SD)		0.240 (0.059) ***	[0.123, 0.357]
		"*Moderate*" (mean) IC		0.364 (0.052) ***	[0.261, 0.466]
		"*High*" (+1 SD) IC		0.488 (0.067) ***	[0.356, 0.620]
Model (3)	Constant	1.628 (0.217) ***	[1.207, 2.086]	1.891 (0.789) *	[0.337, 3.444]

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	Task Strategies (TS)	0.897 (0.091) ***	[0.704, 1.068]	-0.461 (0.359)	[-1.169, 0.247]
	Educational Support (EDU)			0.256 (0.211)	[-0.160, 0.671]
	TS ×EDU			0.208 (0.092) *	[0.026, 0.390]
	R^2	0.267		0.621	
				Effect (Boot SE)	**95% CI**
	Conditional effects of the focal predictor at values of the moderator (s):	"*Low*" (−1 SD)		0.202 (0.094) *	[0.017, 0.388]
		"*Moderate*" (mean) IC		0.350 (0.075) ***	[0.202, 0.498]
		"*High*" (+1 SD) IC		0.498 (0.105) ***	[0.291, 0.705]
Model (4)	Constant	1.633 (0.235) ***	[1.177, 2.120]	1.561 (0.778) *	[0.030, 3.093]
	Time Management (TM)	0.580 (0.064) ***	[0.453, 0.701]	-0.208 (0.226)	[-0.652, 0.236]
	Educational Support (EDU)			0.334 (0.210)	[-0.079, 0.747]
	TM × EDU			0.114 (0.059)	[-0.001, 0.230]
	R^2	0.235		0.619	
Model (5)	Constant	2.480 (0.252) ***	[2.016, 3.001]	1.031 (0.635)	[-0.220, 2.282]
	Help Seeking (HS)	0.471 (0.092) ***	[0.279, 0.636]	-0.182 (.251)	[-0.676, 0.311]
	Educational Support (EDU)			0.670 (0.173) ***	[0.330, 1.010]
	HS × EDU			0.056 (.066)	[-0.073, 0.185]
	R^2	0.088		.587	
Model (6)	Constant	1.694 (0.245) ***	[1.196, 2.225]	2.393 (0.816) ***	[0.786, 4.000]
	Self-evaluation (SE)	0.517 (0.061) ***	[0.385, 0.637]	-0.416 (.213)	[-0.836, 0.004]
	Educational Support (EDU)			0.144 (.218)	[-0.286, 0.574]
	SE × EDU			0.156 (.055) ***	[0.047, 0.265]
	R^2	0.211		0.616	
	Conditional effects of the focal predictor at values of the moderator (s):	"*Low*" (−1 SD)			
		"*Moderate*" (mean) IC			
		"*High*" (+1 SD) IC			

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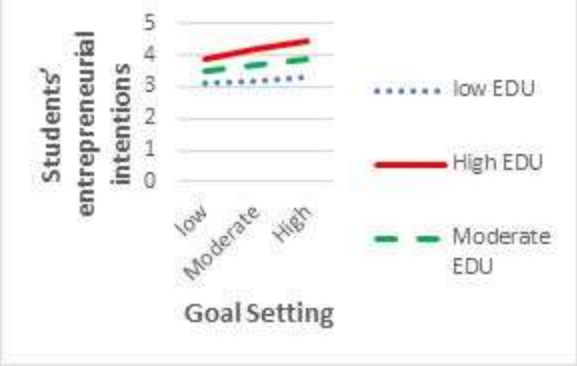

FIGURE 5
MODERATING EFFECT OF ENTREPRENEURSHIP EDUCATIONAL SUPPORT ON THE RELATIONSHIP BETWEEN GOAL SETTING AND STUDENTS' ENTREPRENEURIAL INTENTIONS

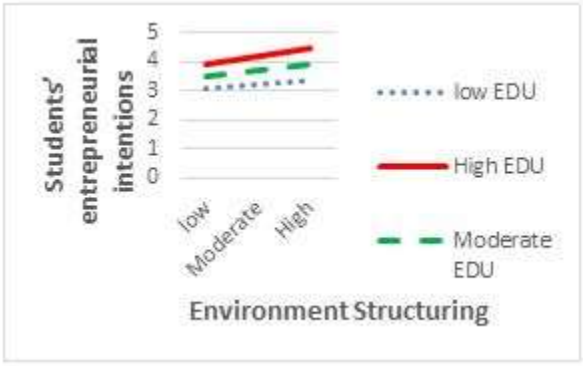

FIGURE 6
MODERATING EFFECT OF ENTREPRENEURSHIP EDUCATIONAL SUPPORT ON THE RELATIONSHIP BETWEEN ENVIRONMENT STRUCTURING AND STUDENTS' ENTREPRENEURIAL INTENTIONS

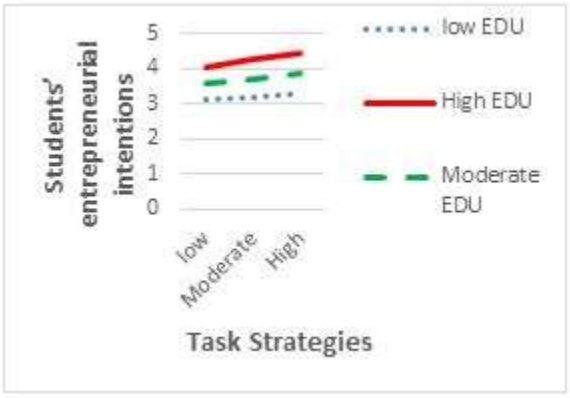

FIGURE 7
MODERATING EFFECT OF ENTREPRENEURSHIP EDUCATIONAL SUPPORT ON THE RELATIONSHIP BETWEEN TASK STRATEGIES AND STUDENTS' ENTREPRENEURIAL INTENTIONS

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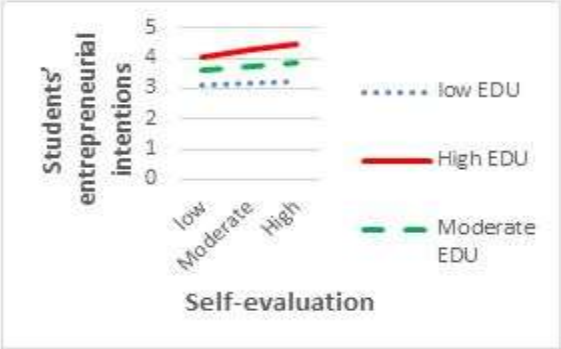

FIGURE 8
MODERATING EFFECT OF ENTREPRENEURSHIP EDUCATIONAL SUPPORT ON THE RELATIONSHIP BETWEEN SELF-EVALUATION AND STUDENTS' ENTREPRENEURIAL INTENTIONS.

DISCUSSION

The research sets out to test two main hypotheses. The first tests the effect of online self-regulated learning on students' entrepreneurial intentions. Within this research, it was found that there is a strong relationship between online self-regulated learning and students' entrepreneurial intentions. This supports the literature as Barnard-Brak et al. (2010) stated the connection between OSRL and EI. In this research, each of the individual aspects was tested concerning their significance to EI.

In the phase of forethought covered by hypotheses H1a and H1b, it was found that both goal-setting and environmental structuring activities have a significant impact on EI. Therefore, when students perform activities pertaining to the setting of goals and environmental structuring it can be said that a cognitive process takes place based on the theories of TPB and EEM explaining the intent and so it seems reasonable to assume that this would trigger EIs. This was in line with the findings in the literature Barnard-Brak et al. (2010).

In the second phase of performance control hypotheses H1c, H1d and H1e are evaluated covering the variables: task strategies, time management, and help-seeking. According to Barnard-Brak et al. (2010), those variables have a direct impact on EI. This study confirmed the literature findings and by definition the significance of SRL and EI. This is important for the research objective of this research paper since it seeks to evaluate the impact of OSRL and EI.

Self-evaluation is the variable used in hypothesis H1f to test its significance on EI. Reflection of the achievements has been extensively debated in the literature (Carver, 2004; Carver & Scheier, 1982; Carver & Scheier, 1990; Koole et al., 2011; Mann et al., 2013). As clarified in the literature review, the purpose is to understand to which degree of self-evaluation of students during their study period has an impact on EI. Both within this research and the literature, it was found that there is a strong connection between this activity in the final phase of the SRL model and EI.

The second aspect of this research was to test the extent to which students have perceived university support and how it moderates the relationship between OSRL and EI. Since no evidence was found of any previous research that evaluated hypothesis H2, it's impossible to compare our results to any existing findings, making this study the first of its kind to test this hypothesis. However, the expectation was that students perceive university support as influencing EI. The findings were nevertheless a mixed bag.

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As detailed in the results section, goal setting, environment structuring task strategies, and self-evaluation is positively moderated by perceived university support while time management help-seeking is not. Based on the data sample it wasn't possible to determine whether this is a conclusive finding, or it is only significant to the population used in the survey. However, it was noted that both activities: time management and help-seeking are part of the SRL model during which intent is created in the cognitive phase. Since this study found that two out of three variables in this phase are not moderated by perceived university support further analysis could be done in this particular phase.

CONCLUSION

The conclusion of this research can be summarised as research that validates the literature concerning SRL having an impact on EI intention. This is true for the six aspects identified within the SRL literature. Furthermore, these findings conceptualized the cyclical model revealing how intent is established in the TPB theory. This research then closes the gap between SRL intent and Entrepreneurial intent. Thus, through the six specified activities of SRL, a theoretical framework is presented that reflects how intention and EI are more specifically armed in the mind of the students.

The second part of this research found that to a certain degree PUES moderates the student OSRL on EI. However, the findings are inconclusive at best. Nonetheless, a conclusion can be drawn here regarding the performance phase of the cyclical model for this specific dataset. It was noticed that the analysis in particular, no moderation of PUES on the relationship between OSRL and EI for performance-related activities. It is suspected that, this is a university failing rather than a conceptual theoretical failing. Whereby the university just insufficiently supports those performance-related activities due to most likely adequate resources or lack of motivation on the part of the students. Since they seem to have PUES in the initial (forethought) and final (self-reflection) phases.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Our findings should be interpreted concerning some limitations. First, the study uses a cross-sectional design that reflects correlational rather than causal relationships. Future research could adopt stronger study designs to enable manipulating the study variables and confirm the causal inferences. Likewise, the data on the study variables were self-reported and collected at a single point in time. Although we made every attempt to avoid concerns of common method variance, its possibility cannot be altogether discounted.

Furthermore, the limited availability of data within a single context means that this research should be replicated to confirm the findings. Since it was found that not all variables positively correlated, further research can look into this and establish whether there is any significant reason for the lack of moderation found within the SRL phase of performance.

CONTRIBUTIONS TO KNOWLEDGE

This research has made several contributions to the literature first and foremost, it confirmed and further supported the existing findings, which state the significant impact of SRL and its six components of having a significant impact on EI. Secondly, previous studies haven't evaluated online SRL, therefore, as this research was done during the Covid-19 outbreak, we had

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a unique opportunity to contribute to the literature with data that was collected from students who were studying online during quarantine, another aspect probing into the modernization of education in the post-covid world. Finally, this research took an extra step to further investigate the extent to which students perceive they are supported by their university and how that moderates the relationship between SRL and EI. We also contextualised this research within the existing theory of SRL and synthesised the research findings with the existing theory.

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