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of University Students:
The Mediating
Role of Entrepreneurial
Self-efficacy**

RESEARCH PAPER

Relationship between Positive Psychological Capital and Entrepreneurial Intentions of University Students: The Mediating Role of Entrepreneurial Self-efficacy

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ABSTRACT

PURPOSE: This study examines the effect of university students' positive psychological capital (PsyCap) on entrepreneurial intentions (EI) and tests the mediating role of entrepreneurial self-efficacy (ESE) on this relationship.

DESIGN/METHODOLOGY/APPROACH: The quantitative study design was based on cross-sectional data collected from 564 university students studying in the Turkish part of Cyprus, using a random sampling technique through a questionnaire. Analyses were performed using the Statistical Package for the Social Sciences (SPSS) version 24 and Moment Structure of Analysis (AMOS) version 18.0 programs.

FINDINGS: The results showed that PsyCap affects EI, and ESE had a mediating role in this relationship.

PRACTICAL IMPLICATIONS: This study helps policy-makers formulate policies to support university students' EIs to reduce the burden of unemployment. It enhances the understanding of developing ESE and PsyCap, which are important cognitive elements of EIs of university students, in the entrepreneurship process, and to the entrepreneurship literature.

ORIGINALITY: This study presents the first empirical findings on the relationship between PsyCap, ESE, and EI, using evidence from university students.

KEYWORDS: *Entrepreneurial intentions; Positive psychological capital; Entrepreneurial self-efficacy*

INTRODUCTION

Considered the most critical element of economic growth, entrepreneurs contribute significantly to a country's economic growth and social life. Entrepreneurship strategically provides new products and processes as well as innovative business opportunities, especially for young people. However, the rising global unemployment rate prompts local governments to forestall support for entrepreneurship among university students (Al-Mamary *et al.*, 2020). The success of American university students' entrepreneurship and Silicon Valley exemplifies the importance of increasing university students' entrepreneurship worldwide (Zhao *et al.*, 2020). Based on Ajzen's (1991) Theory of Planned Behaviour (TPB), the entrepreneurship process begins with entrepreneurial intention (EI), which is the essential antecedent of entrepreneurial behaviour (Baluku *et al.*, 2019). EI reflects an individual's degree of willingness and readiness to sustain entrepreneurship and engage in entrepreneurial activities. Considering the key role of entrepreneurship, understanding and developing EIs in university students is crucial (Tomy and Pardede, 2020). EI is about the conscious state of mind and this leads to the development and implementation of new concepts and business ideas (Maslakçı *et al.*, 2021). Learning about the factors affecting students' EIs enlightens us on how to encourage entrepreneurship in universities (Tomy and Pardede, 2020).

University students' EIs are affected by psychological factors (Maslakçı *et al.*, 2021). Psychological capital (PsyCap) (Luthans and Youssef-Morgan, 2007), an important variable in increasing the entrepreneurs' performance, supports the cognitive and emotional participation of university students and contributes to the development of EIs (Contreras *et al.*, 2017; Maslakçı *et al.*, 2021). Meta-analytical findings show that the sub-dimensions of PsyCap, self-efficacy, optimism, hope, and resilience (Luthans and Youssef-Morgan, 2007) are highly correlated with entrepreneurship (Frese and Gielnik, 2014; Zhao *et al.*, 2020). As an integrated structure, PsyCap positively affects EI as a whole (Contreras *et al.*, 2017). One factor affecting students'

EIs is entrepreneurial self-efficacy (ESE) (Rodríguez Gutiérrez *et al.*, 2019; Elnadi and Gheith, 2021). Zhao *et al.* (2005) showed that the effects of university students' knowledge gained from relationship-related courses, previous entrepreneurship experience, and risk competency on EIs are completely realised through ESE. ESE is “the belief of the individual in his/her skills and abilities related to entrepreneurial activities” (Zhao *et al.*, 2005). Renko *et al.* (2012) showed that ESE had a strong relationship with outcome expectations in studies and analysed entrepreneurship intention as a dependent variable within expectation theory.

PsyCap and ESE are essential antecedents of EI. However, studies have not tested a hypothetical model that integrates these two antecedents with Theory of Planned Behaviour (TPB) (Ajzen, 1991) and the entrepreneurial event model (Shapiro and Sokol, 1982). Therefore, to understand the factors affecting EI, antecedents, such as ESE and PsyCap that affect the EI of young students in higher education institutions within the conceptual model, must be considered. Additionally, many scholars emphasise understanding the factors that affect students' EIs and the intentions of university students to contribute to economic and social development (Rodríguez Gutiérrez *et al.*, 2019; Elnadi and Gheith, 2021, Maslakçı *et al.*, 2021). Therefore, this study aims to fill the gap in the literature by examining the mediating effect of ESE among university students and the direct effect of PsyCap and ESE on EI.

In this context, this research aims to answer the following questions:

- Q1. Does PsyCap, one factor influencing EI, have a significant effect on EI among university students?
- Q2. What is the effect of ESE, one factor that explains EI?

To answer these questions, this study proposes a model based on TPB and uses data obtained through the convenience sampling method. The findings of this research can help academic authorities formulate policies regarding entrepreneurial education programmes and contribute to understanding how the EI of university students can be affected.

The remainder of this paper proceeds as follows. The next section outlines the theoretical background, hypotheses of the research, and the proposed hypothetical model. The subsequent section focuses on the methodological aspects of the study. Finally, the discussion and results are presented based on the research findings.

BACKGROUND AND HYPOTHESES

Literature Review

EI refers to a person's intention to start a new business venture and consciously plan for future endeavours. Previous research emphasised intention as an important indicator of an entrepreneur (Krueger *et al.*, 2000). EI is a main factor that contributes effectively to the formation, development, and growth of entrepreneurship (Al-Mamary *et al.*, 2020), and is determined by self-efficacy, which is influenced by entrepreneurship support and awareness (Al-Mamary *et al.*, 2020). Entrepreneurial

thinking is strongly related to self-efficacy, and self-efficacy skills are acquired through training, by providing a stimulating environment (Tomy and Pardede, 2020). University education is an environmental force that enables students to acquire the commercial and technical skills necessary to nurture self-efficacy to initiate actions towards a new venture (Tomy and Pardede, 2020). Developing and understanding the EI of university students is critical for encouraging entrepreneurship, and researchers have developed intention-based models to better understand the antecedents that affect EI (Krueger *et al.*, 2000). The two most salient models to explain and predict initial behaviour in the literature are Ajzen's (1991) TPB and Shapero and Sokol's (1982) model of the Entrepreneurial Event (EE). Conceptualising EI as an antecedent of behaviour, TPB (Ajzen, 1991) provides a general and consistent framework for understanding and predicting EI by focusing on personal and social factors (Krueger *et al.*, 2000). Based on the TPB model, EI is determined by personal attitudes, perceived social support, and self-efficacy antecedents (Ajzen, 1991). The EE model states that perceived desirability, perceived feasibility, and propensity to act upon opportunities determine EI. The TPB and EE models demonstrate that intention is the best predictor of planned behaviour, including entrepreneurship. Both models have elements that are conceptually related to self-efficacy (Tomy and Pardede, 2020).

Self-efficacy is based on Social Cognitive Theory that explains the role of an individual's beliefs in the ability to shape their environment and the consequences of their personal actions (Bandura, 1986). ESE describes a person's belief in the ability to successfully perform entrepreneurial roles and activities (Santos and Liguori, 2019). The literature states that self-efficacy is a psychological resource that determines EI (Mitchell *et al.*, 2002) and is a sub-dimension of PsyCap (Luthans and Youssef-Morgan, 2007). Self-efficacy, a more sustainable and measurable variable of PsyCap (Bandura and Locke, 2003), has a potentially improvable feature (Luthans *et al.*, 2007). Contreras *et al.* (2017) found that PsyCap and its sub-dimensions affect business students' EIs. The structure of PsyCap, consisting of self-efficacy, hope, optimism, and psychological resilience sub-dimensions, is a critical resource for EIs and entrepreneurial success (Baluku *et al.*, 2019). Extant research in the entrepreneurship field shows that PsyCap is a determinant of entrepreneurs' performance and well-being, especially in dynamic and uncertain situations (Baron *et al.*, 2016; Baluku *et al.*, 2019).

Theoretical Framework and Hypotheses Derivation

Researchers suggest that the differences in university students' EIs could be explained by their psychological characteristics and that the psychological resources that can increase students' EIs should receive attention (Mitchell *et al.*, 2002). PsyCap, a psychological resource, has been used by individuals from the beginning of the entrepreneurship process (Baluku *et al.*, 2019), and is accepted as a positive mindset and defined as a state of mind composed of positive psychological forces (Luthans and Youssef-Morgan, 2017). This positive state of mind is necessary for an entrepreneurial outlook that allows individuals to learn from experience and adapt to business environment dynamics for success. PsyCap aspects, such as optimism, self-efficacy, hope, and resilience, are essential for

entrepreneurial tasks, including the identification of innovation and opportunities (Luthans and Youssef-Morgan, 2017). PsyCap is an entrepreneurial cognitive investment that will always aid in achieving desired results (Baluku *et al.*, 2016; Baron *et al.*, 2016). Few studies have focused on the relationship between PsyCap and EI (Contreras *et al.*, 2017), but have shown that individuals who pursue entrepreneurship have a prominent level of PsyCap (Baluku *et al.*, 2016). Maslakçı *et al.* (2021) showed that PsyCap is a significant antecedent of EI. Therefore, we assume that:

Hypothesis 1: PsyCap of university students positively affects their EIs.

ESE is a necessary antecedent of entrepreneurial action (Zhao *et al.*, 2020). According to Social Cognitive Theory (Bandura, 1986), self-efficacy represents a central mechanism of personal agency and affects the level of effort and persistence in a particular task and the choice of activity and behavioural environment (Zhao *et al.*, 2020). High self-efficacy expectations regarding performance in this behavioural environment cause individuals to approach that environment, and vice versa. Individuals with higher ESE rely on their ability to be successful, and these individuals are expected to achieve more positive results. The literature shows a significant positive relationship between university students' EI and ESE (Elnadi and Gheith, 2021). Thus, we assume that:

Hypothesis 2: ESE of university students positively affects their EIs.

Based on Bandura's (1986) Social Cognitive Theory, ESE affects the value of entrepreneurial outcome expectations (Santos and Liguori, 2019). Individuals with higher levels of ESE develop a more positive expectation about the outcome of their entrepreneurial endeavours. Entrepreneurs' outcome expectations are also related to EI (Liguori *et al.*, 2018). When university students have a more positive expectation of their future entrepreneurship pursuits, they are more likely to nurture strong intentions to start businesses, such as the launch of successful products or services, and become richer (Santos and Liguori, 2019). ESE is an effective mediator variable for the EI of university students (Zhao *et al.*, 2005). Positive mind and body states help students to learn and can improve ESE (Chang *et al.*, 2020). Studies show that ESE and positive thinking have a direct positive effect on EI (BarNir *et al.*, 2011) and lead to genuine entrepreneurial behaviour (Chang *et al.*, 2020).

Reflecting on the positive well-being of individuals, PsyCap also affects entrepreneurship (Zhao *et al.*, 2020). Meta-analytical findings in the literature show that PsyCap is highly associated with self-efficacy and EI (Frese and Gielnik, 2014) and that PsyCap, as an integrated structure, positively affects EI as a whole, independent of its sub-dimensions (Contreras *et al.*, 2017). Zhao *et al.* (2020) showed that PsyCap determines its effect on EI, not directly, but with other mediator variables. Probability Theory also suggests that the relationship between two variables depends on the level of the third variable (Lawrence and Lorsch, 1967). Consequently, the links between PsyCap and EI are manageable with ESE, and we propose the following hypothesis to test this mediating effect.

Hypothesis 3: ESE mediates the relationship between PsyCap and EI.

Based on the above framework, this study suggests the research model shown in Figure 1.

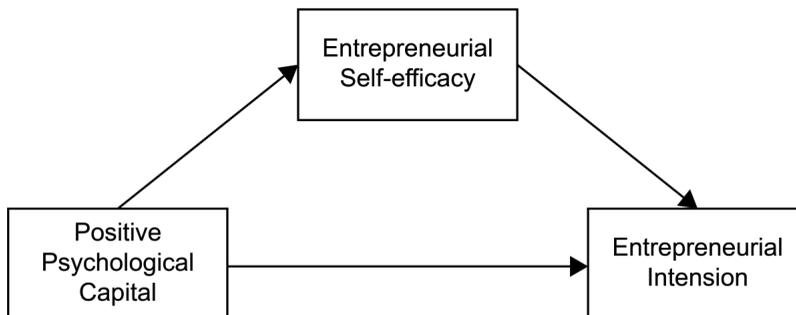


Figure 1: Research Model

Source: Constructed by authors

METHODOLOGY

Research Design

This study used a cross-sectional and quantitative design. A total of 93,000 students (Maslakçı *et al.*, 2021) studying at 18 universities in the northern part of Cyprus constitute the universe for the study. A face-to-face questionnaire was administered to 600 students selected using the convenience sampling method. The face-to-face interaction of participants and researchers and regular communication with participants during the questionnaire ensured a high rate of return (94%), with 564 valid surveys obtained. Of the total students selected as analysis units, 297 (52.7%) were male and 267 (47.3%) were female. Among them, 177 students (31.4%) were in the 18-20 age range, 268 (47.5%) in the 21-23 age range, 70 (12.4%) in the 24-26 age range, and 49 (8.7%) were aged 27 and older. The annual family income of 221 (39.2%) students was below US\$5,000, for 314 (55.7%) students it was between US\$5,001 and US\$10,000, and for 29 students it was US\$10,001 or more.

Measurement of Variables

After a detailed literature review, previously developed and frequently used scales were given preference in this study. Except for the expressions aimed at determining the demographic characteristics, the study used 6-point Likert-type scales (1 = strongly disagree; 6 = completely agree).

To determine the positive PsyCap levels of university students, the study used a 24-item scale developed by Luthans *et al.* (2007). Sample items of the scale included, “I feel confident helping to set targets/goals in my work area” and “If something can go wrong for me work-wise, it will (R)”.

To measure the EI of university students, the study used a 6-item scale developed by Liñán and Chen (2009). Sample items of the scale included, “I am ready to do anything to be an entrepreneur” and “I am determined to create a firm in the future”.

To determine the ESE of university students, the study used a 4-item scale developed by Liu *et al.* (2019). Sample items of the scale included, “I can choose suitable employees for my business” and “I can apply innovative ideas to inspire entrepreneurial partners”.

Common Method Bias

The common method bias problem is frequently encountered in self-reported cross-sectional studies. Harman’s single factor test was used to examine whether current bias occurred (Imran and Atiya, 2020). There were a total of 34 items on the scales used in the study. The factor analysis, performed by limiting all items with a single factor, showed that the total variance was 35.787% (Table 1). This was lower than the 50% recommended in the literature, therefore, no common method bias was present.

Table 1: One-factor Model (CMV)

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	12.167	35.787	35.787	12.167	35.787	35.787
2	3.041	8.945	44.732			
3	1.676	4.930	49.662			
32	0.198	0.581	98.977			
33	0.195	0.573	99.550			
34	0.153	0.450	100.000			

Extraction Method: Principal Component Analysis

Source: Constructed by authors

Validity and Reliability

The content validity index (CVI) was calculated to evaluate the validity of the scales included in the study, and convergent validity was checked. CVI values were 0.90 for positive PsyCap, 0.85 for ESE, and 0.84 for EI. These values are above 0.7, as suggested by Nunnally (1978). Convergent validity was evaluated by examining the average variance extracted (AVE) and factor loadings. Table 2 shows that the factor loadings and AVE values of the scales were 0.5 and greater. Therefore, the scales have content and convergent validity (Hair *et al.*, 2010). Cronbach’s alpha and composite reliability (CR) values were measured to determine the internal consistency of the scales. As seen in Table 2, Cronbach’s alpha and CR values varied between 0.858 and 0.912. The values are greater than the lower threshold of 0.7, therefore, the variables in the model are reliable (Hair *et al.*, 2010; Sürücü and Maslakçı, 2020).

Table 2: Validity and Reliability

Construct/Variables	Factor Loadings	Cronbach's Alpha (α)	Average Variance Extracted (AVE)	Composite Reliability (CR)
<i>Positive Psychological Capital</i>	0.508-0.854	0.914	0.588	0.899
<i>Entrepreneurial Self-Efficacy</i>	0.658-0.898	0.911	0.634	0.912
<i>Entrepreneurial Intentions</i>	0.747-0.809	0.858	0.603	0.858

Source: Constructed by authors

RESULTS

Descriptive Statistics

The mean and standard deviation values of the participants' responses to the observed variables were calculated. Descriptive statistics for the study variables are presented in Table 3. A minimum of 1.00 point indicates that the participant has no idea or intention of the variable, while a maximum of 6.00 points indicates that the participant's opinion or intention of the variable is high. The standard deviation shows the distribution of responses to the variable, and small and close to average standard deviation shows that the statistical average has a good fit with the observed data. Hair *et al.* (2017) stated that if the standard deviation values are below 1, the participants are consistent in their opinions. Therefore, these findings showed that the participants were consistent with their ideas. Skewness and kurtosis values were estimated to determine the distribution of the data. The values were in the reference range (-1.5, +1.5) and revealed the normality of the data (Hair *et al.*, 2010).

Table 3: Descriptive Statistics

	Minimum	Maximum	Mean	Std. Dev	Skewness		Kurtosis	
					Statistic	Std. Error	Statistic	Std. Error
<i>Positive Psychological Capital</i>	1.42	6.00	4.225	0.787	-0.540	0.102	0.316	0.204
<i>Entrepreneurial Self-Efficacy</i>	1.00	6.00	4.289	0.853	-0.451	0.102	-0.323	0.204
<i>Entrepreneurial Intentions</i>	1.00	6.00	4.201	0.823	-0.434	0.102	-0.617	0.204

Source: Constructed by authors

Correlation Analysis

The results in Table 4 show that positive PsyCap is positively associated with ESE ($r = 0.590$, $p < 0.05$) and EIs ($r = 0.544$, $p < 0.05$). The results also show that ESE and EI are positively correlated ($r = 0.755$, $p < 0.05$).

Table 4: Correlation Analysis Results

Variables	1	2	3
<i>Positive Psychological Capital</i>	1.000		
<i>Entrepreneurial Self-Efficacy</i>	0.590**	1.000	
<i>Entrepreneurial Intentions</i>	0.544**	0.755**	1.000

**Correlation is significant at the 0.05 level (2-tailed)

Source: Constructed by authors

Test Results of Hypothesis

Process Macro, developed by Hayes (2017), was used to test the research hypotheses. Process Macro is a method frequently used in recent research on the mediation and moderation model. This method eliminates the potential shortcomings of the causal steps method proposed by Baron and Kenny (1986) (Hayes, 2017). Therefore, the Process Macro was preferred in the present analysis. Model 4 was selected to perform analysis with 5,000 bootstrap samples and 95% confidence intervals. The results are presented in Table 5.

Table 5: Results on Direct and Indirect Paths

Hypothesis	Paths	B	S.E.	t-value	p	LLCI	ULCI
H1	PsyCap → ESE	0.8643	0.4595	17.467	0.000	0.7671	0.9615
H2	PsyCap → EI	0.2384	0.0526	4.536	0.000	0.1352	0.3417
H3	ESE → EI	0.7143	0.0359	19.914	0.000	0.6439	0.7848
H4	<i>Indirect effect (PsyCap → ESE → EI)</i>	0.6174	0.0532	–	–	0.5185	0.7268

PsyCap: Positive Psychological Capital; ESE: Entrepreneurial Self-Efficacy; EI: Entrepreneurial Intentions

Source: Constructed by authors

The results in Table 4 show that positive PsyCap has a significant and positive effect on ESE ($\beta = 0.8643$, 95% CI = [0.7671, 0.9615], $t = 17.467$, $p < 0.05$) and EI ($\beta = 0.2384$, 95% CI = [0.1352, 0.3417], $t = 4.536$, $p < 0.05$). Furthermore, the effect of ESE on EI was significant and positive ($\beta = 0.7143$, 95% CI = [0.6439, 0.7848], $t = 19.914$, $p < 0.05$). Lower and upper confidence intervals (LLCI–ULCI) did not contain zero (0) in any case. Therefore, Hypotheses 1 and 2 were supported.

To determine the mediating role of ESE on the relationship between positive PsyCap and EI, the lower and upper confidence intervals of the indirect effect were checked. The fact that the confidence intervals did not contain zero under any circumstances indicated that the indirect effect was significant ($\beta = 0.6174$, SE = 0.0532, 95% BCA CI = [0.5185, 0.7268]). Therefore, Hypothesis 3 was supported. To estimate the size of the intermediary effect, the variance accounted for (VAF)

value was estimated (VAF = 72.14%). Hair *et al.* (2017) stated that a VAF value between 20% and 80% shows partial mediation, and a VAF value above 80% shows full mediation. A VAF value of 72.14% indicated that ESE partially mediates the effect of positive PsyCap on EI.

DISCUSSION AND CONCLUSIONS

Entrepreneurship is essential for prosperity, income generation, and economic development (Soomro *et al.*, 2020). Unemployment rates (especially among young people), lack of professional growth, and development opportunities are common problems in today's economies. Entrepreneurship is an alternative, and promoting entrepreneurship for regional socio-economic development is a primary task for universities. Understanding the factors that affect university students' intentions about entrepreneurship leads to this economic growth. Considering the importance of entrepreneurship, this study examined the EI of university students.

Chevalier *et al.* (2021) demonstrated the lack of experimental evidence to determine the mediating variables to explain the relationship between university students' PsyCap and EI. Therefore, ESE and PsyCap, which are critical antecedents of EI, were included in the study. The findings showed that students' PsyCap had a positive and significant relationship on EI. This result is consistent with previous studies (Contreras *et al.*, 2017; Baluku *et al.*, 2019; Chevalier *et al.*, 2021; Maslakçı *et al.*, 2021). Positive PsyCap is an important variable and antecedent in increasing the management performance of entrepreneurs (Maslakçı *et al.*, 2021). When the entrepreneurship process is combined with the dynamic, competitive work environment and the risks undertaken (Baluku *et al.*, 2019; Chevalier *et al.*, 2021), entrepreneurs may experience great difficulties. These challenges affect various entrepreneurial outcomes, including the satisfaction and well-being of entrepreneurs, particularly undergraduate students, and could negatively affect EIs. Therefore, improving the PsyCap of university students will positively affect EI. Similarly, the positive effect of ESE on EI was confirmed. Based on Social Cognitive Theory, this study's results suggest that students with higher ESE have higher attitudes towards entrepreneurial actions and may have greater intentions to create new ventures. Similarly, previous findings indicated that ESE affects EI positively and significantly (Zhao *et al.*, 2005; Santos and Liguori, 2019).

This study determined the mediating role of ESE on the effect of PsyCap on EI and expands the entrepreneurship literature by including PsyCap in these variables. University students face many difficulties and stresses, such as preparing for work, confronting high unemployment rates, and facing low job security (Luthans *et al.*, 2007). PsyCap's high-level structure (Luthans *et al.*, 2007) helps students overcome these difficulties and positively affects EI development (Maslakçı *et al.*, 2021). The improvable and teachable characteristics of PsyCap (Luthans *et al.*, 2007) will positively contribute to university students' EI by improving their ESE. This finding helps to unravel the theoretical explanations underlying PsyCap and EI, and expands the understanding of the dynamic relationship between PsyCap and ESE on EI.

While previous research suggests that PsyCap and ESE are antecedents on university students EIs and that they play a particularly important role in entrepreneurial success (Baron *et al.*, 2016; Baluku *et al.*, 2019; Zhao *et al.*, 2020), little is known about the processes that strengthen this relationship. The findings of this study showed that the effect of university students' PsyCap on EIs was higher with the mediating role of ESE. Increasing the ESE of students with low PsyCap will increase EIs.

These findings can help policy-makers to improve university students' EIs by offering appropriate solutions to encourage students' positive attitudes towards entrepreneurship and increase students' ESE.

Moreover, while previous studies addressed one of the antecedents of EI, ESE, and PsyCap variables, the current study revealed that positive psychological sources positively affect EI and the mediating effect of ESE on this relationship. Therefore, our findings expand the entrepreneurship literature and propose a theoretical model that will expand this research field.

This study has some limitations. The study uses only a quantitative approach to investigate EI and does not address qualitative approaches, which may have limited the depth of analysis of the phenomenon. Although this study uses a theoretical framework consistent with previous research, it does not include cultural influences, government policies, economic and environmental conditions, and demographic dimensions, which may affect EI. Therefore, future studies should include these variables to reveal additional factors affecting students' EI.

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