

The Relationship Between Emotional Intelligence and Expatriate Performance in International Construction Projects

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Purpose: In the field of construction, it has been shown that individuals with higher emotional intelligence may perform better on the job. However, it is still a question worth exploring about how emotional intelligence affects expatriate performance in international construction projects. Therefore, this study aimed to verify the relationship between expatriates' emotional intelligence and expatriate performance and explore the mediating role of self-efficacy and psychological resilience.

Methods: A cross-sectional study was conducted in June 2021. A non-probability sampling method was used to obtain data. A total of 315 Chinese construction expatriates in 67 countries and regions around the world were evaluated using four scales: the Wong and Law Emotional Intelligence Scale, the General Self-Efficacy Scale, the Connor-Davidson Resilience scale, and the Kraimer's expatriate's performance scale. The hypothesis model was tested using Partial Least Squares Structural Equation Modeling (PLS-SEM).

Results: The results of the data analysis indicated that self-efficacy ($\beta_{\text{Indirect effect}} = 0.175, p < 0.05$) and psychological resilience ($\beta_{\text{Indirect effect}} = 0.112, p < 0.05$) served as fully mediating variables ($\beta_{\text{Direct effect}} = 0.177, p = 0.101$), suggesting a way to explain how emotional intelligence affect the performance of contractor expatriates. The findings also suggest that self-efficacy and psychological resilience also play continuous and multiple mediating roles ($\beta_{\text{Indirect effect}} = 0.143, p < 0.05$) between emotional intelligence and expatriate performance.

Conclusion: This study attempted to investigate the mechanism of emotional intelligence's influence on expatriate performance from the perspective of individual psychological resources. The results of the study suggest that the emotional intelligence of expatriates may bring about an increase in performance levels by improving self-efficacy and psychological resilience levels. This provides a practical way to improve the performance of expatriates and a new management perspective for human resource management in international construction projects.

Keywords: expatriate performance, emotional intelligence, psychological resilience, self-efficacy, sequential mediation model

Introduction

Human resources with international engineering experience have become one of the key sources of core competitiveness for enterprises in the construction industry.¹ As the competition in the international construction market becomes more intense, the complexity and challenges of construction projects are further amplified.² The emergence and evolution of the COVID-19 epidemic and the volatility of the world's political landscape have forced international projects to face a dynamic external environment full of unknowns.³ To survive in an environment of both opportunities and challenges, researchers are constantly exploring the key factors that drive projects to success. With the further development of project management research, human resource management has gradually become the focus of attention. Since construction projects are inherently one-off, complex, and unique, human behavior's rich experience and flexibility become the best guarantee against risks.⁴ Due to subcontracting and offshoring, flexible but complex project-based operations become the essential feature of international construction projects. As

a result, the criticality of people in international construction projects is further accentuated.^{5,6} Furthermore, numerous studies have confirmed that the performance of expatriate personnel is directly or indirectly related to the project's success, as the individual career goals of their employees are usually highly aligned with the realization of the project.⁷ The question is how to motivate expatriates of a construction project to achieve high job performance.

Over the years, researchers have actively explored how to improve expatriates' job performance. However, the research on construction management has traditionally focused on the technical and organizational settings,⁸ and little attention has been paid to the occupational health of expatriates, ignoring the importance of their mental health status for the sustainability of employees and projects. Expatriate employees' performance has been explored from the perspective of positive psychology in recent years. It has been found that positive psychological resources help them cope with stress effectively, adapt to the new environment, and achieve extraordinary performance.⁹⁻¹¹ Various theories and practices demonstrate that emotional intelligence increases job satisfaction, organizational commitment, and performance, whether in healthcare, schooling, sports, or construction.⁴ The construction industry requires those involved in construction to build rapport with different departments and people. Emotional intelligence has been found to be effective in facilitating key relationship management approaches to operations, such as in collaboration, alliances, or integrated project delivery.¹² Recent research has shown that emotional intelligence enhances project management and promotes the practical completion of construction projects.^{13,14}

There has been much discussion about how emotional intelligence affects expatriate performance in the construction industry. Several studies have demonstrated that emotional intelligence can influence employee performance through various mediating variables, including team climate, family support, organizational support, transformational leadership behavior, organizational commitment, willingness to leave, cross-cultural adjustment, and expatriate adjustment.^{15,16} However, they are all external resources or behavioral outcomes for the individual. The role of intrinsic psychological resources in mediating emotional intelligence and job performance has been well documented in specific occupational fields of study, such as education and nursing. However, the importance of cognitive attitudes and intra-individual psychological resources in expatriate construction project populations has not been widely discussed.¹⁷ Therefore, this paper focuses more on international construction expatriates to verify the impact of emotional intelligence on expatriate performance. Based on this, through the conservation of resources theory, social cognitive theory and self-determination theory, this study aims to elucidate the potential, influential mechanisms of these two constructs. Specifically, we propose and validate self-efficacy and psychological resilience as mediating mechanisms to explain the relationship between emotional intelligence and expatriate performance. At the same time, we further consider the positive predictive effect of self-efficacy on psychological resilience, thus proposing a sequential mediating model from emotional intelligence to expatriate performance.

This research aims to contribute in the following ways. In terms of theoretical contributions, we aim to extend past research on the antecedents and formation of expatriate performance by exploring the mechanisms through which emotional intelligence influences such performance and the potential mediating role of self-efficacy and psychological resilience within it. This is an important contribution to the corpus of knowledge about the beneficial effects of emotional intelligence in construction projects. And it provides evidence on the adaptability of the conservation of resources theory and self-determination theory in the international construction industry. From a practice perspective, practitioners can benefit from this research to understand the potential impact of emotional intelligence on expatriate performance and how it can drive expatriates to perform better in more challenging work environments.

Hence, this paper employs a quantitative-based empirical approach by administering questionnaires to construction expatriates and applying partial least squares (PLS-SEM) to evaluate the hypothesized model. After giving a theoretical background, the research hypothesis, methods, and design are presented. Then comes the analysis and discussion of the data, presenting the practical implications and also pointing out the limitations and future directions for improvement. Finally, the conclusions of this paper are presented.

Theoretical Background and Hypotheses

Emotional Intelligence and Expatriate Performance

The concept of "emotional intelligence" can be traced back to two journal articles published in 1990.¹⁸ Emotional intelligence was first defined as "a component of social intelligence that involves the ability to monitor one's own and

other's feelings and emotions, distinguish between them, and use this information to guide one's thinking and emotional action".^{18,19} Subsequently, On this basis, Wang and Law's research further revealed the four key characteristics of emotional intelligence, which are the evaluation and expression of self-emotions, the evaluation and identification of others' emotions, the regulation of one's own emotions, and the use of emotions to promote performance.²⁰ Since interpersonal and fundamentally relevant human capacities are what is indicated by the term "emotional intelligence", this ability should be able to anticipate a range of social and personal consequences. Similarly, emotional intelligence can be improved through training and intervention programs.^{21,22}

Most researchers widely recognize that emotional intelligence is an essential factor influencing an individual's life, work, and learning. Among the findings of existing literature, emotional intelligence is positively associated with subjective well-being,^{23,24} job satisfaction,²⁵ job performance,^{26,27} interpersonal relationships with lovers,²⁸ social support,²⁹ psychological and physical health,³⁰⁻³³ and self-efficacy.³⁴ In contrast, it was negatively associated with loneliness and depression.³⁵ In the specific field of construction, the findings of several researchers have also shown that high levels of individual emotional intelligence are strongly associated with job performance.^{26,34,36}

Expatriate performance is the expression of job performance of construction workers in a specific context. Due to the uniqueness and complexity of the project itself and the unique external environment of overseas work, the connotation of job performance widens with the change in job content. Due to the high costs and higher expectations behind adopting the project management strategy of expatriation, expatriates are always expected to perform well by meeting or exceeding project's basic requirements and objectives.³⁷ Thus, according to Kraimer's³⁸ findings, task and contextual factors contribute to expatriate performance. The technical and management facets of the job are referred to as the task element. The contextual element refers to issues unrelated to the job, such as good relationships built with locals.³⁸

Many researchers have presented their views on how emotional intelligence contributes to expatriates' rapid adaptation to complex overseas work environments and good performance. According to Thomas and Menge,³⁹ when confronted with challenging circumstances, project managers that possess high levels of emotional intelligence are better equipped to bounce back from stress and negative feelings. When opinions and conflicts arise, it is timelier to recognize that problem-solving is the fundamental goal, rather than dwelling on anger and curses. From another perspective, Clarke's (2010) research suggests that emotional intelligence is key to enhancing the performance of project managers. In his findings, he made particular note of the fact that those with low emotional intelligence are more prone to experience misunderstandings, conflict, and a hostile work environment, which will continue to negatively impact the project.⁴⁰ Conversely, project managers with high emotional intelligence are able to adapt their work style more flexibly in such situations, resulting in high performance. Researchers also have found that individuals with high emotional intelligence tend to maintain a positive and healthy emotional state and thus feel confident in completing specific tasks.⁴¹ Emotional intelligence also helps expatriates build good relationships and positive interactions with owners, teammates, and host nationals. This positive perception drives individuals to perform well in the task and situation-specific performance.^{34,36} Based on the above arguments, emotional intelligence appears to be playing an important role in determining expatriate performance.

Accordingly, we make the hypothesis regarding emotional intelligence:

H1: Emotional intelligence is positively related to expatriate performance.

Mediating Role of Self-Efficacy

The concept of self-efficacy was first proposed by Bandura,⁴² a famous American psychologist. In his social cognitive theory, the change in self-efficacy as a cognitive factor is seen as the psychodynamic reason for sustained self-regulation. With the development of self-efficacy theory, many people also believe there is general self-efficacy. A psychologist from Germany⁴³ argued that there is general self-efficacy. Self-efficacy is "the degree to which people are confident they can use the resources they have to accomplish a task. Therefore, self-efficacy is not a skill, nor a response to actual ability, but a self-perception of the individual's ability to perform a specific task."⁴³

Social cognitive theory provides an insightful perspective to reveal the relationship between individual affective experience and self-efficacy.⁴⁴ It suggests that emotional states constitute one of the four key sources of self-efficacy. Positive

emotional states help individuals build self-confidence and reinforce self-direction and self-motivation. The findings of Chang and Ferris (2012) further validate this view.⁴⁵ When people experience positive emotional states (such as happiness), they are more likely to expect success and to make sustained efforts toward it. Conversely, when people experience negative emotional states (such as anxiety, stress) associated with specific activities or domains, they are more likely to reduce self-efficacy and thus dilute goals and motivation. Joseph's³⁴ findings also support the positive predictive effect of positive emotions on self-efficacy.³⁴ Based on the above findings, we can assume that emotional intelligence is a key factor influencing self-efficacy.

As the signature variable of cognitive theory, self-efficacy is also considered to be a key mediating variable for the effects of personality, affective variables, and situational factors on individuals' decision making and execution, performance, and persistence in their careers.⁴⁶ In addition, individual's behavior can also be affected by their sense of self-efficacy in multiple ways.⁴⁷ For example, self-efficacy plays a key role in how people search for and acquire new skills. In addition, self-efficacy determines how people perceive themselves when they encounter difficulties, accomplish goals, how much effort they put in, and how well they focus.⁴⁸ The majority of individuals with a high sense of self-efficacy tend to have positive expectations for the future, have a greater sense of satisfaction with their lives, and feel better in control of their lives. Individuals with high self-efficacy are also more engaged in their work, positively impacting work performance and career success.^{49,50} What's more, from the self-determination theory perspective, high self-efficacy levels can provide individuals with internal motivation.^{51,52} Competence, one of the three basic psychological needs, has a similar meaning to self-efficacy. According to self-determination theory, internal motivation can only be generated when basic psychological needs are met.⁵³ Internal motivation has a more substantial predictive effect on an individual's successful behavior than external motivation.¹³ Driven by intrinsic motivation, individuals persist longer in all activities, perform better on tasks, and have a more remarkable ability to adapt to unfamiliar environments. Therefore, based on social cognitive and self-determination theories, it is reasonable to assume that self-efficacy may mediate the relationship between emotional intelligence and expatriate performance.

In addition, self-efficacy, the signature variable of the social cognitive theory, is also considered a key mediator in social cognitive career theory, guiding the impact of personality, individual affect, and situational factors on job performance.⁵⁴ The hypothesis has been tested in several specific population groups, namely teachers, students, and nursing categories, but there is not much evidence in the construction field.⁵⁵⁻⁵⁸ Considering the above statements and the context of the study, the hypothesis is proposed:

H2: Self-efficacy mediates the relationship between emotional intelligence and expatriate performance

Mediating Role of Psychological Resilience

The study of psychological resilience originated in the United States in the 1970s when a group of children growing up in high-risk environments came to the attention of psychologists and psychiatrists.⁵⁹ This large variability in developmental outcomes within this group of children led to academic research on psychological resilience. According to Luthans, resilience is the ability to bounce back or rebound from adversity, conflict, failure, or even positive events, progress, and increased responsibility.⁶⁰ It has been demonstrated that achieving human accomplishments and a sense of well-being depends on an optimistic sense of personal efficacy that overcomes the countless obstacles to success.⁶¹ According to Bandura, success usually results from redoubled efforts after repeated failures.⁶²

In addition, the idea that protective factors are recognized by most scholars in the research on psychological resilience. Furthermore, findings on psychological resilience suggest that emotional intelligence is considered one of the important protective factors of psychological resilience.⁶³ The study by Tugade and Fredrickson uncovered how positive emotional experiences impact an individual's psychological resilience.⁶⁴ The findings suggest that resilient individuals use positive emotions to bounce back from stress and find meaning in positive coping when they encounter stress.

Resilience is considered an essential component of psychological capital.⁶⁵ According to previous studies, psychological capital is positively associated with desirable employee attitudes like job satisfaction and organizational commitment⁶⁵ and negatively associated with undesirable employee attitudes like employee cynicism, turnover intentions, and employee stress and anxiety.^{63,66,67} Thus, ideal employee attitudes are therefore crucial for both individual and organizational success. In the study of psychological capital outcome variables, performance has been one of the most popular research objects, which contains a variety

of performance types, including innovation, sales volume, referrals, product quality, quantity, and firm evaluations.^{68,69} Beyond this, researchers have further subdivided the samples with different characteristics to validate and explore psychological capital's role in performance generation.⁶³ In addition to employee attitudes, psychological resilience, a component structure of psychological capital, is significantly related to performance measured in multiple ways, but with slight variation in either self-reported, supervisor-assessed, or objective measures.⁷⁰ It can be concluded that individuals with high resilience are better able to handle the stress of a complex work environment, maintain a good psychological state, respond positively, and ultimately achieve satisfactory results.⁷¹ Given this defense, it is reasonable to propose the hypothesis:

H3: psychological resilience mediates the relationship between emotional intelligence and expatriate performance.

Sequential Mediating Effect of Self-Efficacy and Psychological Resilience

Existing research findings have shown a positive relationship between self-efficacy and motivational constructs that are conceptually related to psychological resilience, such as perseverance and constant effort toward a particular task or work.⁷² In addition, protective factors are recognized by most scholars in the research on psychological resilience. Self-efficacy has been studied and proven to be a protective resource.^{43,73}

Resource conservation theory explains the importance of self-efficacy as a personal resource for psychological resilience. According to Hobfoll's original definition, a resource is something that an individual perceives as valuable to him or can help him gain access to something valuable.⁷⁴ In accordance with conservation of resources theory, there is evidence that personal resources contribute to successful coping, behavioral adjustment, and growth.⁷⁵ Individual characteristic resources such as high intelligence, self-efficacy, and optimism refer to the various skills and traits that individuals have in themselves that help them resist stress. Evidence shows that resources such as self-efficacy, self-esteem, and social support develop and enhance resilience. Self-efficacy, as a motivational resource, determines how much effort the individual will use in pursuing goals and how long he or she can sustain in the face of obstacles and adversity.^{44,47,76} Thus, the higher the self-efficacy, the more likely managers will exhibit resilient behavior. Thus, we hypothesize that psychological resilience and its direct effect may partially explain the positive effect of self-efficacy on expatriate performance.

All of this above evidence suggests that self-efficacy and psychological resilience may play a sequential mediating role between emotional intelligence and expatriate performance. However, there has not been much research in the past that can confirm the relationship between them. As a result, we propose the hypothesis:

H4: Self-efficacy and psychological resilience play continuous and multiple mediating roles between emotional intelligence and expatriate performance.

Based on the above discussion and hypotheses, a model of the mechanism of action of emotional intelligence on outgoing performance is constructed, and the details are shown in Figure 1.

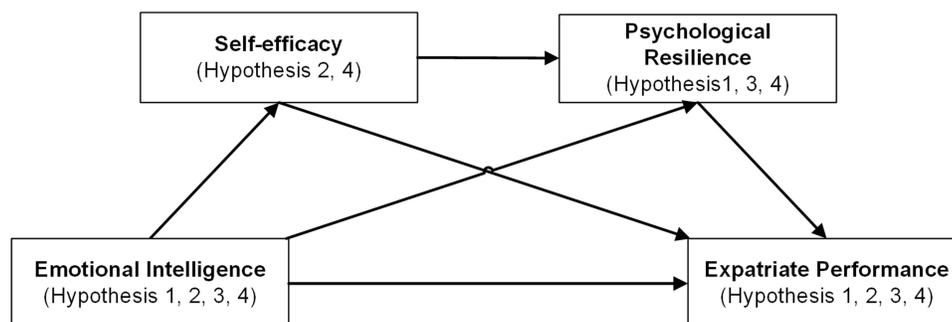


Figure 1 Hypothesized Model.

Methodology

Design and Sample

Expatriates in international construction projects are the target population of this study. Because this population is distributed around the world, obtaining a valid and reliable overall list or sampling frame is very difficult. When the population cannot be reasonably ascertained, non probability sampling is often the only option. Moreover, the expatriates themselves may carry high work pressure and have limited time off, and this study did not want to have more impact on the normal work life of the subjects, so an online questionnaire was used instead of a face-to-face format. Based on the above considerations, this cross-sectional study utilized a non-probabilistic “convenience” or “snowball” sample designed to elicit maximum participation by consenting expatriates. Before the official questionnaire was distributed, a preliminary study was conducted with several experts with a wealth of international engineering experience, which determined the questionnaire’s structure, expression, and clarity and improved its readability and clarity. The data collected through the questionnaire was designed to obtain desired information. A questionnaire containing all the measurement scales was distributed to the Chinese contractor expatriates currently in the state of expatriation or with expatriate experience. A Likert’s 5-point closed-ended questions was used to obtain data on the degree of respondents’ affirmation to investigate and reveal the impact of psychological factors on the job performance of expatriates. Based on the criteria for invalid questionnaires, 38 questionnaires were eliminated, leaving 315 valid questionnaires for further analysis. The expatriates who filled out the questionnaire were from 45 different international construction projects in 67 countries (regions). Out of 315 valid questionnaires, there were 254 males (80.6%) and 61 females (19.4%). Regarding the age distribution of personnel, those younger than 25 years old accounted for 19.4% of the total, those aged between 25–35 years old accounted for 47%, 36–45 years old and 46–55 years old accounted for 20.6% and 11.7% of the total, respectively. Such an age and gender structure are inseparable from the characteristics of the international construction industry. Among them, the shortest cumulative length of expatriation is less than 1 year and the longest reaches more than 10 years. The specific demographic data are shown in [Table 1](#).

Table 1 Participants’ Information

Demographic	Category	Amount	Percent (%)
Gender	Male	254	80.6
	Female	61	19.4
Age	Under 25	61	19.4
	25–35	148	47.0
	36–45	65	20.6
	46–55	37	11.7
	Over 55	4	1.3
Marital Status	Married	168	53.3
	Unmarried	147	46.7
Position	Project Manager/Associate Manager	219	69.5
	Chief Project Accountant/Chief Project Engineer/Chief Economic Manager	96	30.5
Years of expatriation experience	Less than 1 year	69	21.9
	1–3 years	99	31.4
	3–6 years	83	26.3
	6–10 years	39	12.4
	Over 10 years	25	7.9

Measure Instruments

Emotional Intelligence

Wong and Law Emotional Intelligence Scale (WLEIS)²⁰ is a 16-item self-report inventory used to measure individual emotional intelligence; it comprises four essential aspects: Self-Emotions Appraisal, Others-Emotions Appraisal, Use of Emotion, and Regulation of Emotion. To date, the reliability and effectiveness of WLEIS have been validated many times by scholars in different populations.⁷⁷⁻⁸¹

Expatriate Performance

There are many existing metrics on job performance. For example, performance can be reflected using objective job-related data⁸² or by having employees evaluate job performance by themselves,⁸³ or by directly adopting the results of some particular performance evaluation scale recognized by the company.⁸⁴ Regardless of the approach taken, the purpose of the measurement is to reflect the job content as completely and scientifically as possible, while matching the job scenario. Since expatriates may be located in different countries or regions, it is difficult to collect data and to ensure the consistency and completeness of the evaluation scale if performance is evaluated by others or by applying objective data. Moreover, there are certain advantages of using self-report performance evaluation. Given above reasons, this paper adopts the self-report method to measure the expatriate employees' work performance of Chinese contractors. The comparison resulted in the use of a scale developed by Kraimer³⁸ to measure the performance of the expatriates. The scale includes 6 items: "Completing job objectives", "Technical competence", "Overall job performance", "Adjusting to the business customs and norms of the foreign facility", "Developing connections with vital host-country business contacts", and "Interacting with coworkers." The alpha coefficient of agreement for this scale in this study was 0.913. There have been many studies conducted in the past that have verified the reliability and validity of the scale.^{38,85}

Psychological Resilience

Psychological resilience is measured by 10 items developed by K. M. Connor and J. R. Davidson.⁸⁶ After comparing the psychological measurement indicators of the three CD-RISC versions, CD-RISC 10 outperforms the remaining two scales regarding reliability, validity, and practicality.⁸⁷ The reliability yielded alpha coefficients is 0.85.⁸⁸ In addition, the reliability and scientific of the Chinese version of the CD-RISC-10 scale have been confirmed many times in different populations and different cultural backgrounds.^{89,90}

Self-Efficacy

The self-efficacy level of expatriates is evaluated by the General Self-efficacy Scale. The original version of the scale has 20 items and was initially developed in 1981 by Jerusalem and Schwarzer. Later, it was revised to become a streamlined version of 10 item.⁹¹ It has been used in many research projects and has been translated into multiple languages. There is typically an internal consistency between alpha = 0.75 and 0.90 under diverse ethnic and cultural backgrounds. The scale is practical in terms of convergent validity and discriminative validity, in addition to being brief and reliable.

Results

Based on the valid data collected from the questionnaire, we would like to test the hypotheses by building structural equation models. Common structural equation modeling methods are covariance-based structural equation modeling (CB-SEM) and partial least squares structural equation modeling (PLS-SEM). The CB-SEM technique emphasizes the full range of fitness, mainly in detecting the applicability of the theory, and is suitable for conducting the testing of theoretical models (validation).⁹² While PLS-SEM is designed mainly in explaining the variance (detecting whether the causality has a significant relationship) and is suitable for theoretical model building (exploratory), and also for verifying the causality of the inferences explored.⁹³ In addition, PLS-SEM possesses several features: PLS-SEM can analyze and process small sample data to avoid problems that may occur with other methods. Moreover, PLS-SEM can handle both reflective and formative models.⁹⁴ The measurement scale for expatriate performance is a formative model, so this is one of the main reasons why we prefer to choose the PLS-SEM technique. Finally, PLS-SEM can be used for theory development rather than validation of existing theories, which means it focuses on exploring new relationships starting from hypotheses based on solid theoretical support.⁹⁵ For these reasons, the proposed conceptual model was examined utilizing PLS-SEM.

Assessment of Measurement Model

Firstly, the measurement model needs to be examined. Formative measurement models and reflective measurement models have different test criteria. Emotional intelligence, resilience, and self-efficacy are reflective measurement models that should be evaluated for validity and reliability. The first step is usually to evaluate the indicator loadings. Loadings above 0.708 are recommended because the construct explains more than 50% of the variance of the index, thus providing acceptable reliability.⁹⁶ In Table 2, the statistical results showed that except for R01 and R02, other indicator loadings were more than the threshold of 0.708.

Table 2 Summary of Results for Reflective Constructs

Constructs, Dimensions, and Indicators	Outer Loading	P-value	Cronbach's Alpha	CR	AVE
Emotional Intelligence			0.918	0.934	0.670
EI01	0.799	***			
EI02	0.840	***			
EI03	0.773	***			
EI04	0.786	***			
EI05	0.826	***			
EI06	0.879	***			
EI07	0.824	***			
Psychological Resilience			0.930	0.941	0.617
R01	0.690	***			
R02	0.704	***			
R03	0.854	***			
R04	0.808	***			
R05	0.797	***			
R06	0.850	***			
R07	0.803	***			
R08	0.716	***			
R09	0.831	***			
R10	0.782	***			
Self-efficacy			0.926	0.942	0.730
SE01	0.837	***			
SE02	0.832	***			
SE03	0.864	***			
SE04	0.858	***			
SE05	0.882	***			
SE06	0.854	***			

Notes: *** Significant at $p < 0.001$.

Abbreviations: EI, emotional intelligence; SE, self-efficacy; PR, psychological resilience; EP, expatriate performance.

The Cronbach's α , and composite reliability are used to evaluate the internal consistency reliability. Table 2 shows that each potential factor's α coefficients and the CR values are more significant than 0.9. Therefore, it exceeds the threshold point of 0.700, which shows that the measurement model accurately represents a construct's internal consistency reliability. An acceptable AVE is 0.50 or higher, indicating that the construct explains at least 50% of the variance of its items, indicating good convergent validity.⁹⁷ According to Table 2, the value of each AVE ranges between 0.617 and 0.730. Accordingly, the convergent validity of the model for all variables is satisfactory.

When testing the discriminant validity of models, the metric proposed by Fornell and Lacker used to be used, but the latest research shows that this metric does not apply in all situations.⁹⁶ Then, the heterotrait-monotrait (HTMT) ratio of the correlations was suggested as a replacement.⁹⁸ Table 3 validates the discriminant validity of the measurement models. Indeed, the result showed that all values were less than 0.90, indicating acceptable discriminant validity.

Expatriate performance is a formative construct. Convergent validity, indicator collinearity, statistical significance, and relevance of the indicator weights are the criteria used to evaluate formative measurement models. As shown in Table 4, the weights and loadings of the six indicators of expatriate performance were tested. The results showed that not all of the two showed insignificance so the indicators could be retained empirically. According to Hair,⁹⁴ the variance inflation factor (VIF), was all less than the threshold 5 and suggested that this formative model may not have any severe collinearity issues.

Assessment of Structural Model

Based on the resampling of 5000 by using the bootstrap technique, structural models are assessed by computing beta (β), R^2 , and respective t-values.⁹⁴ In addition, predictability (Q^2) is also emphasized.

According to the evaluation steps of the structural model, it is first necessary to analyze whether there is a collinearity problem between the latent variables of the structural model. The variance inflation factor (VIF) indicator was proposed to measure multicollinearity problems. Table 5 illustrates that the maximum inner VIF value of constructs was 3.872, indicating there should be no concern regarding collinearity among latent variables.

Table 3 Discriminant Validity (HTMT)

	EI	PR	SE
EI	–		
PR	0.841	–	
SE	0.867	0.882	–

Abbreviations: EI, emotional intelligence; SE, self-efficacy; PR, psychological resilience; EP, expatriate performance.

Table 4 Summary of Results for Formative Constructs

Constructs, Dimensions, and Indicators	Outer Weights	Outer Loadings	VIF
Expatriate Performance ($\alpha=0.913$)			
EP1	0.447**	0.926***	3.499
EP2	0.006	0.766***	2.860
EP3	0.170	0.871***	3.922
EP4	0.109	0.772***	2.542
EP5	0.092	0.707***	2.069
EP6	0.336***	0.842***	1.937

Notes: ** Significant at $p < 0.05$, *** Significant at $p < 0.001$.

Abbreviation: EP, expatriate performance.

Table 5 Inner VIF Values

	EI	EP	PR	SE
EI	–	3.234	2.817	1.000
PR		3.537	–	
SE		3.872	2.817	–

Abbreviations: EI, emotional intelligence; SE, self-efficacy; PR, psychological resilience; EP, expatriate performance.

After checking the collinearity problem, the next step is to examine the R² values for the endogeneity structure and the path coefficient significance. A structural model’s path predictive power is evaluated using R². The model exhibits moderate explanatory power since all endogenous variables are greater than 0.455.⁹⁹ The final results (See Figure 2) showed that three hypotheses are significant (p < 0.01).

This study uses the Blindfolding algorithm to measure the Q² value. Because the number of samples is 315, and since the ratio of the number of samples to the sample omission distance cannot be an integer, “6” is selected as the sample omission distance. The results show that the Q² values of psychological resilience, self-efficacy, and expatriate performance are all greater than the critical value of 0,⁹⁵ indicating the predictive relevance (see Table 6).

Hypothesis Testing

This research assessed the significance of the path coefficients through a bootstrapping procedure with 5000 resampling iterations. Path analysis with direct and indirect effects, as illustrated in Table 7, is the result of the structural model. The structural modeling assessments in Figure 2 and Table 7 demonstrate that most hypotheses have been confirmed after testing.

Path analysis of the four main variables revealed that emotional intelligence was not statistically significant in directly predicting expatriate performance after the inclusion of mediating variables as (β_{H1}=0.177, t=1.642, p=0.101), while all other direct paths reached significance levels. Consequently, H1 is not confirmed.

Preacher & Hayes’ bootstrapping method was used to test indirect influences in this study.¹⁰⁰ As shown in Table 8, the indirect effects confirmed the proposed mediation effects.

The t-value of 2.418 indicates that the indirect effect of emotional intelligence on expatriate performance via self-efficacy (β=0.175) is significant. With 0.175, 95% Boot CI: [LL = 0.028, UL = 0.313], indicating the existence of mediation.¹⁰¹ H2 is confirmed since self-efficacy mediates the relationship between emotional intelligence and expatriate performance.

Emotional intelligence significantly impacts expatriate performance based on resilience, with β = 0.112 and a t-value of 3.365. The trend does not overlap zero between the values with 0.112, 95% Boot CI: [LL = 0.055, UL = 0.18], which supports H3, showing a mediating effect.

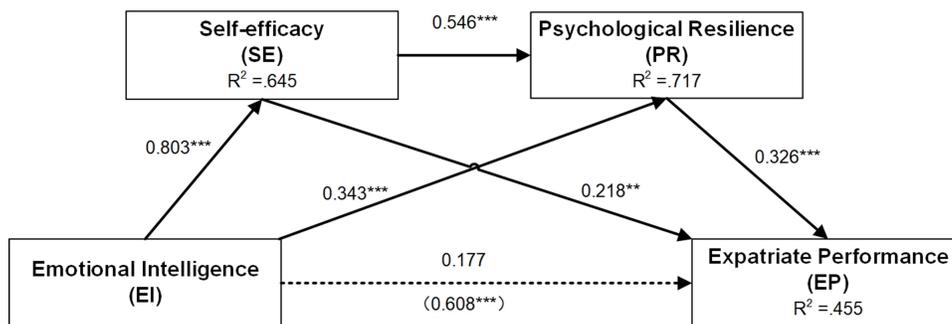


Figure 2 Results of hypothesized model.

Notes: **p<0.05, ***p<. 001. The dotted line represents the direct path is not significant.

Table 6 Predictive Relevance

	SSO	SSE	Q ² (=1-SSE/SSO)
EI	2205.000	2205.000	
EP	1890.000	1341.673	0.290
PR	3150.000	1783.667	0.434
SE	1890.000	1012.741	0.464

Abbreviations: EI, emotional intelligence; SE, self-efficacy; PR, psychological resilience; EP, expatriate performance.

Table 7 Path Coefficients and Significance

Relationship	Path Coefficient (β)	SD	T-Statistics	P-values
EI→SE	0.803	0.027	29.919	0.000
EI→PR	0.343	0.063	5.413	0.000
EI→EP	0.177	0.108	1.642	0.101
SE→PR	0.546	0.063	8.713	0.000
SE→EP	0.218	0.090	2.418	0.016
PR→EP	0.326	0.086	3.814	0.000

Note: Bold represents significance at $p < 0.05$.

Abbreviations: EI, emotional intelligence; SE, self-efficacy; PR, psychological resilience; EP, expatriate performance.

Table 8 Mediation Results

Hypothesis	Relationship	Effect	SD	T-value	95%LL	95%UL	Result
	Direct effects						
H1	EI→EP	0.177	0.108	1.642	-0.029	0.391	Not Supported
	Indirect effects						
H2	EI→SE→PR	0.175**	0.072	2.418	0.028	0.313	Supported
H3	EI→PR→EP	0.112**	0.033	3.365	0.055	0.182	Supported
H4	EI→SE→PR→EP	0.143**	0.044	3.273	0.066	0.236	Supported

Note: ** Significant at $p < 0.05$.

Abbreviations: EI, emotional intelligence; SE, self-efficacy; PR, psychological resilience; EP, expatriate performance.

Combined with the hypotheses verified above, it can be seen that self-efficacy and resilience have a significant sequential mediating effect between emotional intelligence and expatriate performance ($\beta = 0.143$, $p = 0.001 < 0.05$), and the 95% confidence interval of Bootstrap 5000 is [0.066, 0.236], excluding 0. Thus, H4 is confirmed.

Besides, as shown in Table 7, emotional intelligence 's direct impact on expatriate performance are not significant (with its t -value=0.177, $p = 0.101 > 0.1$). Therefore, emotional intelligence affects expatriates through the three full mediation of resilience, self-efficacy, and their combination.

Discussion

The data suggest that two psychological resources (self-efficacy and psychological resilience) significantly mediate the relationship between emotional intelligence and expatriate performance, which is in with previous findings.^{102,103} This research

also reveals that self-efficacy and psychological resilience mediate a sequential relationship between emotional intelligence and expatriate performance. In earlier studies, expatriate performance has seldom been studied from the perspective of employees' psychological states, and models that naturally incorporate these four factors are rare. The influence mechanisms proposed and validated in this paper are complementary to theories of emotional intelligence, self-efficacy, and psychological resilience in international construction. It also suggests new ideas for improving expatriate performance and guarding expatriates' psychological health. In other words, for the specific field of international construction projects, the key to improving expatriate performance and project success may lie in improving expatriates' self-efficacy and psychological resilience levels.

Relationship Between Emotional Intelligence and Expatriate Performance

It has been hotly argued what kinds of connection exists between emotional intelligence and job performance.¹⁶ Emotional intelligence has been demonstrated to positively predict job satisfaction, project success, and individual and organizational performance in construction projects. However, contrary to our expectation, data analysis results did not support hypothesis 1, indicating that emotional intelligence is not directly linked to expatriate performance, similar to the findings of other researchers.¹⁰⁴ Although earlier studies have shown that the emotional intelligence of project managers is positively connected to project performance,¹⁵ this relationship is complex. A simple linear correlation cannot fully explain it. It also implies that higher emotional intelligence does not mean better expatriate performance, and the internal mechanisms of influence need to be further explored. The results also coincide with further confirmation of the significance of introducing self-efficacy and psychological resilience as mediating variables.

Mediating Effect of Self-Efficacy and Psychological Resilience

Based on the results of the data analysis, it was demonstrated that self-efficacy and psychological resilience mediated emotional intelligence's effect on expatriates' performance. Individuals with high emotional intelligence in the context of international construction projects have good adaptability in the context of stress because they can accurately perceive and evaluate their emotions and buffer the adverse effects caused by negative events and work stress through emotional self-awareness expression and management. Expatriates can better control, regulate, and release their emotions if they comprehensively understand their own emotions and the causes of their development throughout the expatriation process. Emotional intelligence also involves the capability to recognize and evaluate the emotions of others. Due to the unique nature of construction projects, the expatriates' work is always carried out with the team. The organizational atmosphere and dynamic environment of the team also have an impact on individual expatriates. The organizational atmosphere is closely related to each individual. Therefore, recognizing and perceiving others' emotions will also impact their own. In addition, people with high emotional intelligence are not only able to recognize and understand their feelings but also take a positive approach to cope with adverse situations. In addition to using self-soothing techniques, they actively seek social support and work together to reduce stress and anxiety in psychologically vulnerable situations. They also have higher levels of self-efficacy and confidence in overcoming multiple obstacles in international projects with an optimistic attitude.

Meanwhile, the mediating effect of self-efficacy and psychological resilience further supports the validity of self-determination theory and resource conservation theory in the project context. According to self-determination theory, healthy growth and optimum skill acquisition are contingent upon an individual's autonomy, competence (which may be understood as self-efficacy), and relatedness.⁴⁴ Individuals satisfied with their three fundamental psychological needs acquire an internal incentive to explore new knowledge, abilities, and experiences in self-determined ways based on their spontaneous interests. Self-determination and self-efficacy theories assert that intrinsic motivation is the fundamental determinant of human behavior, and that the ultimate purpose of external reward and incentive is to stimulate and develop internal motivation. According to the assumption of fulfilling autonomy and a sense of belonging, intrinsic motivation is only achievable when individuals believe they can do certain activities or tasks. Considering the characteristics of international projects themselves, the complexity of the projects dictates that expatriates must have tremendous advantages in aspects such as engineering skills, management level, and cultural adaptability.⁵ Additionally, expatriate companies are typically formed as teams, and expatriate groups enjoy a high degree of autonomy. Thus, from an objective conditions standpoint, the group possesses the necessary conditions for completing project tasks successfully. Determining how to convert the smooth promotion of engineering project implementation into internal motivation and self-efficacy may become one of the determinants of expatriate performance.

Self-Efficacy and Psychological Resilience Play a Sequential Mediating Role Between Emotional Intelligence and Expatriate Performance

In addition, the positive predictive effect of self-efficacy on psychological resilience further reveals a sequential mediating model of the effect of emotional intelligence on expatriate performance. When individuals have sufficient faith in their strengths and incorporate them into their professional habits, a more integrated psychological wealth accumulates invisibly. “Those who do not destroy us will ultimately strengthen us.” Psychological resilience is the ability to bounce back quickly from hardship and stress and to maintain one’s mental health.¹⁷ International projects are fraught with difficulties, demands, and possibilities. Suppose expatriates are aware of their capabilities in the face of obstacles and believe their goals are attainable. In that case, they will make unrelenting attempts to improve outcomes, which will act as a reinforcing factor, creating a virtuous cycle. In this cycle, again and again, the individual’s self-confidence and ability are enhanced at the same time. One can only mobilize all of the surrounding resources to achieve the goal when the need for autonomy finally arises. In constantly overcoming difficulties, the individual achieves a continuous breakthrough and development of psychological resilience. Individuals with a high level of resilience are more likely to be enthusiastic and put in the effort, which results in superior performance over time. They frequently have a clear sense of direction for their careers and view the strains and challenges of their tasks as chances to develop their talents. Additionally, they possess the willpower to produce various solutions to issues, establish internal attributions and have optimistic outcomes expectations, and react positively and endure in the face of adversity and failures to attain career success.⁴

Finally, the findings imply that the conventional understanding of emotional intelligence’s direct effect on expatriate performance may only tell part of the story and more complicated mechanisms mediate the influence. Firstly, the previous literature research suggested that emotional intelligence might be able to directly influence expatriate performance, which held true when the two factors of self-efficacy and psychological resilience were not included. But when these two influencing factors were added, the direct effect was no longer significant, contrary to hypothesis 1. However, this is not necessarily a bad thing. On this basis, we found that the three mediating effects were significant, supporting our hypotheses 2–4. This further demonstrates the value of our study, which is to explore a certain mechanism of influence by which emotional intelligence affects performance. Ultimately, we conclude that emotional intelligence may not directly affect expatriate performance, but indirectly affect individual reported performance levels by enhancing expatriates’ self-efficacy and psychological resilience. Our work responds to Rezvan and Ashkanasy’s appeal²⁶ for research into the mediating variables influencing individual job performance. But obviously, it is clear that this is not the only influence path, but just an attempt to look at it from the perspective of individual psychological resources. And a more complete impact model is still an interesting question worth continuing to explore.

Practical Implications

In terms of application, our research results would like to provide new perspectives on improving project success and expatriate performance. Increasing technology and information technology is no longer the only management tool available to managers. They can also use the resources available to enhance the individual characteristics of expatriates as a breakthrough to improve their management practices. With the help of various human resource management tools, managers can enhance the positive individual characteristics of expatriates, including emotional intelligence, psychological resilience, and self-efficacy. Only by paying more attention to the mental health of expatriates can we achieve a win-win situation for both employees and the company.

As a result of this research, the first managerial implication is to make organizations aware of emotional intelligence’s power. Emotional intelligence as a skill should be recognized from top to bottom in international construction projects. When this value recognition is developed, it should be incorporated into the selection and hiring criteria. In addition, research has shown that of the four branches of emotional intelligence, emotion recognition and management can be significantly improved by specific interventions.²¹ Therefore, organizations and managers can use them flexibly in their international project management practices to improve the chances of project success.

The second implication of this study is that self-efficacy, the key characteristic that determines expatriate performance, should be intervened in and influenced throughout the execution of construction projects. In order to improve self-efficacy effectively, it is critical to understand how self-efficacy is constructed. Previous research has identified

significant relationships between the development of self-efficacy and prior behavioral achievement, alternative experiences, and verbal and social persuasiveness.¹⁰⁵ Therefore, selecting employees with more successful experience and professional competence are more likely to build a high level of self-efficacy in completing their expatriate assignments, thus ensuring the achievement of project goals. Second, a beneficial consequence of alternative experiences is that if individuals sincerely believe that others in similar conditions and experiences have succeeded through their efforts, they can also accomplish their goals. Thus, the influence of role models should be maximized and facilitate the flow and transfer of experiential knowledge within and between organizational programs. Finally, the verbal influence of others is equally critical to improving self-efficacy. Therefore, leadership style and social support become vital components of the assignment process. Employees should feel supported and needed throughout the assignment process. However, it is worth mentioning that evolving ideas and data have prompted experts to cast doubt on the premise that increased work self-efficacy correlates with improved outcomes.⁴⁷ Thus, the resilience challenge model considers the likelihood of a curved rather than a linear link between self-efficacy and resilient behavior. Therefore, when adopting various self-efficacy measures, care should be taken to ensure the scale is appropriate and that overly high levels of self-efficacy are not pursued. This will erode employee motivation and have a negative effect.

Thirdly, the extraordinary performance of expatriates in the face of global public health events such as the COVID-19 outbreak and an established high-pressure environment demonstrates the critical role of psychological resilience. Therefore, organizations and managers should consider the cultivation and enhancement of expatriates' psychological resilience as a key concern in the management of international construction projects. Previous research has demonstrated that a coherent and systematic set of psychological resilience interventions can be flexibly applied to expatriate human resource management practices.¹⁰⁶ Managers can implement proactive employee assistance programs, such as establishing work-family balance conditions for expatriates and modifying reward systems and working conditions to meet the needs of employees' interests. What's more, the organization and leadership should always be concerned about occupational health and safety, not just during the COVID-19 pandemic. This includes safety training, developing health and welfare programs, and promoting a safety culture. At the same time, taking an active and positive role in social support and focusing on the cross-cultural adaptation of expatriates are equally important propositions. All of the above measures can be utilized in practice as unique techniques for HRM and performance management in an expatriate context, and their significant effects on increasing levels of psychological resilience have been validated in previous studies.^{17,107,108}

Limitations and Future Directions

The survey also has some limitations. Due to the surveyed population's particular identity and difficulty, the questionnaire's sampling did not cover expatriates from different nationalities. Only expatriates from Chinese contractors were represented, which limited the generalizability of the results of this study. The data will be necessary to conduct additional research to determine whether the findings can be applied to other regions or industries with different cultural backgrounds. In addition, this paper adopts non-probability convenience sampling and snowball sampling in data acquisition. Non-probability sampling is simple, low-cost, time-saving, and statistically simpler than probability sampling. However, since the subjectivity of the sampler cannot be ruled out, the sample cannot be measured controllably and objectively, so the sample does not have the nature of an inferential population. Because of this feature, non-probability sampling is mostly used for exploratory research and preparatory research, and research where the overall boundary is unclear and it is difficult to implement probability sampling. In future research, it may be possible to draw more valuable conclusions by considering that non-probability sampling is often used in combination with probability sampling, or by focusing the study on all the expatriates of a particular international construction project. Finally, performance was measured in this study in the form of self-reports and any self-reported data may be affected by social expectations bias,¹⁰⁹ especially for expatriate performance. In future research, project performance measurement should increase the use of other information channels, such as project acceptance reports and post-project evaluations. Data from different information sources can be triangulated to obtain more objective measurements.

Conclusion

In the context of increasingly competitive international markets, the level of expatriate performance is a key concern for both company and personal development. In the field of international project management, although many studies have emphasized the importance of expatriates' emotional intelligence on job performance, the mechanisms that influence it have not been widely discussed. Based on self-determination theory, social cognitive theory, and resource conservation theory, this study constructs a model to explain the influence of emotional intelligence on expatriate performance with self-efficacy and psychological resilience as mediating variables. A survey of 315 Chinese construction expatriates from 67 regions or countries around the world was conducted, and the obtained data were analyzed utilizing PLS-SEM. The data results reveal the key mediating role played by self-efficacy and psychological resilience. It was found that emotional intelligence can indirectly enhance the level of expatriate performance by enhancing individual self-efficacy and psychological resilience. In terms of theoretical contributions, the study enriches the scope of research on emotional intelligence of expatriates in the construction industry. The findings also provide a new management perspective for expatriate performance enhancement and human resource management in international project management practice. In future research, we hope to combine multiple theories to construct a more complete model of influence mechanism. The model may consider multiple perspectives from individual level, organizational level and external environment level to find more possible influencing factors and thus identify more influence paths. It is hoped that it will eventually further enrich theoretical research and international project management practice related to emotional intelligence.

Ethics Statement

The Ethics Committee of Southeast University exempted this study for the following reasons. First, this study uses a questionnaire approach that is non-interventional in nature and does not adversely affect human behavior or organization. Second, the study involves negligible risk and does not involve any foreseeable risk of harm or discomfort other than the potential for inconvenience to the participants. All participants reviewed the consent form before they participated in the study. All procedures were conducted in accordance with the ethical standards of the Declaration of Helsinki.

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Disclosure

The authors report no conflicts of interest in this work.

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