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ORIGINAL RESEARCH

Psychological Resilience-Based Multifactorial Framework of Expatriate Adjustment

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Introduction: Expatriates are facing more stressors, such as cross-cultural adjustment, global political instability, family separation, health concern. The black swan events of the pandemic and the Russian-Ukrainian war have posed significant challenges in the current international environment. Adapting to an expatriate environment as soon as possible is critical to expatriate success. This study aims to examine the factors that affect expatriate adjustment through psychological resilience.

Methods: Guided by person-environment (p-e) fit theory, an expatriate adjustment framework based on psychological resilience is proposed, and 309 valid sample data are used for structural equation model (SEM) analysis.

Results: The results show that expatriate adjustment is a psychological process based on the development of resilience. Social support plays a buffering role in dealing with environmental deviations induced stressors. The person-environment transactional process is the most critical adjustment process.

Discussion: The development of expatriate adjustment is divided into four stages (shock, buffer, adjustment, mastery) consistent with resilience development. Project managers can take different expatriate management strategies from multiple aspects. Finally, this study proposes the U-curve hypothesis of expatriates' psychological resilience development aligned with the U-curve process of expatriate adjustment for future research.

Keywords: international assignments, expatriate adjustment, psychological resilience, multifactorial framework

Introduction

Economic globalization has led many international companies to send employees to work overseas. Although expatriate work can help companies expand their business and develop local labor and expatriate employees can enrich their work experience, working abroad can be challenging.[1] In a complex cross-cultural environment, expatriates often show problems such as low performance and work stagnation.[2,3] There are many reasons for these problems, such as expatriates' social ability and skill level. One of the fundamental reasons is cognitive conflict and work pressure caused by cultural differences.[4] Therefore, the cultural adaptation of expatriates to the host country has become an important indicator affecting expatriates' job performance.[5] The black swan events of the COVID-19 pandemic and the Russian-Ukrainian war have posed significant challenges for expatriate employees to adjust around the world.[6] In the wake of these unforeseen events, some expatriate employees were able to adjust and adapt to the best of their ability, returning to their regular routines and continuing to work. Others have a tough time and even experience psychological problems such as anxiety and depression[7] and asked to finish their assignments earlier. This may lead to stagnation and loss of overseas programs, particularly in industries where compulsory training requires onsite work, such as the construction industry.[8] Expatriate managers, therefore, expect to determine what kind of people are suitable for expatriation in high-risk situations, meaning that they adapt well to the expatriate environment.

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However, the perceptual elements (eg, understand and utilize) integral to expatriate adjustment have not been captured.[9] Extensive previous research has explored the effect of individual differences on expatriate adjustment,[10] mainly focusing on one's confidence and ability. Moreover, studies have shown that expatriate adjustment can affect individual behavior performance by affecting psychological development.[11] Thomas and Znaniecki[12] put forward the psychological theory of expatriate adjustment in the 20th century. Psychologists believe that expatriate adjustment is a psychological adjustment.[13] However, psychological adjustment is a conceptual point of view. Previous studies have not systematically analyzed the mechanism of expatriate adjustment and psychological adjustment. Through extensive research and investigations, psychologist Duckworth has discovered that the most critical factor in determining a person's success in dealing with stressors is a person's ability to persevere through hardships. This ability is defined as psychological resilience in positive psychology, which refers to a person's ability to recover from adversity, conflict, failure, and even positive events.[14] In the workplace, employees' psychological resilience is activated in stressful environments and has different levels in different conditions. Psychological resilience in the workplace is predicted by collected resources and is positively related to work performance.[15] Expatriate adjustment and psychological resilience are all positive reactions that adapt to stressful events. While psychological adjustment has been considered in expatriate research, there is a lack of systematic analysis regarding the relationship between expatriate adjustment and psychological resilience, specifically whether expatriates' psychological resilience is related to their expatriate adjustment.

To fill in the above research gap, this study aims to construct and validate a theoretical framework for expatriate adjustment via psychological resilience development. In international assignments, the general expatriate adjustment is defined as a process in which expatriates adapt to sudden environmental differences and complete expatriate assignments. This paper explores the psychological mechanism from the perspective of psychological resilience based on the person-environment fit theory. Some contributions are made in this research. First, this paper identifies psychological resilience's direct and mediating role in expatriate adjustment. The psychological mechanisms underlying the development of expatriate adjustment in a cross-cultural environment are identified. It extends the research on the mechanisms of expatriate adjustment. The consistency of psychological resilience with the development of expatriate adjustment is also identified from a process perspective. The influencing factors of expatriate adaptation can be classified into four stages: shock, buffer, personal characteristics, and adjustment through psychological resilience. It is assumed that the levels of psychological resilience during one stressful event have a similar U-curve with expatriate adjustment. Second, this research has implications for managers. Expatriates who have high levels of psychological resilience are better during international assignments. Moreover, organizations have different managerial strategies to improve expatriate adjustment levels according to assignment stages.

Theoretical Background and Hypotheses Development

Expatriate Adjustment in International Assignments

Expatriate adjustment (Expatriate adaptation) is a kind of cross-cultural adaptation in the initial phase after an expatriate's relocation to a foreign country. Its research foundation comes from the fields of sociology and anthropology. The traditional expatriate adjustment is defined as a state. Specifically, it refers to the adaptability of the expatriate to the local environment or the psychological comfort and familiarity with all aspects of foreign culture (J. Stewart Black, 1988; R. Takeuchi, 2010). However, more and more studies believe that expatriate adjustment is a process. It emphasizes that employees adjust their psychology and behavior to achieve their work goals. It is an active adjustment process for employees. Haslberger and Brewster[16] pointed out the dynamicity of expatriate adjustment within and across dimensions: their cognition, feelings, and behaviors change over assignment time. The U-curve theory[17] is the most consistently used to describe the change process of expatriate adjustment over time. It divided the adjustment process into four stages (honeymoon, culture shock, adjustment, mastery), and the different stages suggest that expatriates' cultural understanding changes over time along with culture learning.

From the psychological perspective, cross-cultural adaptability is considered the degree of psychological adjustment of an individual to a new cultural environment.[13] Psychological adjustment pays more attention to the attitudes of the expatriate; this is in line with the theoretical concept of subjective well-being and satisfaction in all aspects of one's

life.[18,19] Ward, Bochner[20] model pointed out that psychological adjustment is released on the stress and coping approach. Maertz Jr, Takeuchi[21] explicated cross-cultural adaptation as a set of psychological change processes. However, these perspectives were abstract and not specific. It partially explained the mechanism of psychological adjustment. However, managers could not obtain and manage expatriates psychological cognition and feelings. Therefore, a specific psychological construct should be found and establish a link between psychological cognition and expatriate adjustment. In Haslberger[5]'s 3D (Dimensions, Domains, Dynamics) expatriate adjustment model, they defined the dimensions of expatriate adjustment as cognition, feelings, and behaviors, which was also the process of attitude formation in the process of psychological development. Furthermore, their model was based on the person-environment (p-e) fit theory of psychology. The p-e fit theory focuses on the interaction between the characteristics of the individual and the environment. The adequacy of this fit between a person and the environment can affect the person's motivation, behavior, and overall mental and physical health.[22] This study follows the definition that expatriate adjustment has multiple dimensions of cognitions, feelings, and behaviors and is a psychological adjustment interaction with the environment.

Psychological Resilience in the Workplace

The study of psychological resilience in the workplace is an essential element of positive psychology, concerned with individuals' positive cognitions, feelings, and behaviors.[23] In the workplace context, psychological resilience has been studied in various industries and occupations, such as general business organizations,[24] medical and nursing,[25] and the military.[26] In the construction industry, Turner, Holdsworth[27] found that the psychological resilience of female engineers had a more significant impact on job performance than male engineers. Resilience in the workplace contains two defining elements.[28] One is the experience of adversity. Fisher, Ragsdale[29] emphasize that adversity in the workplace can take the form of isolation and high-intensity circumstances (eg, crisis) or occurs in the form of lower-intensity but high-frequency or high-duration circumstances (eg, work stress). The first adversity for expatriates in their international assignment is adjusting to various differences in the host country. Another element is a positive adjustment,[28] through which the individuals return to a stable status of well-being or performance or even bounces beyond it.[30,31] In previous studies, it was considered that the individual's protective resources were the main reason for positive adjustment. At the same time, the protective resources given by the organization should be considered in the work scenario.

This paper focuses on individual-level psychological resilience in the workplace, which is the same perspective as most studies of psychological resilience in the workplace. The majority of research on psychological resilience in the workplace has conceptualized individual resilience as a stable personality trait,[32] a capability,[33] or a process.[34] The process perspective refers to psychological resilience as developing progress in feelings and behaviors in response to several adversities and demonstrating positive adjustment.[35] This manuscript defines resilience as a "dynamic process encompassing positive adjustment within significant adversity".[36] A process-based definition of resilience is premised on the three requisite requirements (1) the need for a significant adversity/risk, (2) the presence of assets or resources to offset the effects of the adversity, and (3) positive adjustment or the avoidance of a negative outcome.[27,29] Although many studies define psychological resilience as a dynamic development process, the assessment of psychological resilience still adopts the scale developed based on ability theory. From the process perspective, psychological resilience consequences may be impacted by resilience mechanisms and resilience facilitators.[23] Thus, the experience of adversity, resilience mechanisms, resilience-promoting factors, and resilience outcomes mark essential elements of the resilience process.[23,37] Kumpfer[37] emphasised on the person-environment fit actions, and defined psychological resilience as individual positive outcome of positive cognition, feelings, and activities respond to adversity.

Hypothesis Development

The core idea of the p-e fit theory is that an individual's attitudes, behaviors, and other individual-level traits depend on the interaction between the individual and the environment, given the demands of the specific environment. Consistency between the individual and the environment in response to each other can result in positive attitudes and behaviors, such as less stress, better job adaptation, and employee well-being.[38] In expatriate assignments, the individual's cognition and behavior interact with the cross-cultural work environment. At the same time, the shock of cultural conflicts stimulates employees' resilience to cope with the stress and return to normality. Therefore, it is hypothesized that there is

a congruence between expatriate adjustment and the development of psychological resilience. Based on Kumpfer[37]'s resilience process framework and p-e fit theory, this research proposes an expatriate adjustment framework for expatriates based on the direct effect of psychological resilience and the indirect effect of various personalities through psychological resilience (Figure 1). Under the action of stressors (environmental differences), protective factors (external social support) in the environment will play a buffering role first. Then, internal factors (emotional intelligence, self-efficacy) and external factors (coping style) will interact to adapt to this stressful event, which is called the person-environment (p-e) interaction. For example, expatriates with higher emotional intelligence will feel more external support and promote better coping. Finally, psychological resilience is reorganized to adapt to expatriate work. Expatriate adjustment is regarded as the outcome of psychological resilience reorganization.

The Buffering Effect of Social Support

Cohen and Wills[39] considered social support a buffer factor in stress research. In the following decades, social support was widely used in stress models as a buffer against workplace stress.[40–43] The buffering degree of social support is positively correlated with perceived stress. In international project assignments, expatriates face many stressors, such as cultural differences, political events, and family conflicts. However, environmental differences in the host country are the most common stressors in the early stage of an assignment. The greater the environmental differences experienced by expatriates, the more social support they utilized to deal with stress. Therefore, the present study hypothesizes that:

H1: The environmental deviations that expatriates perceived positively correlate with perceived social support.

The Interaction Between Personality Traits and Social Support

Social support is helpful for employees facing stressful situations.[44,45] Social support is a protective resource obtained by individuals from the outside.[46] The broaden-and-build theory indicates that positive emotions and resources can broaden individuals' cognition and behavior and build positive outcomes.[47] Since protective resources can make people feel content and hopeful, the more protective resources an individual has, the stronger his self-confidence and self-efficacy. This positive self-awareness will also affect individual behavior. People with solid self-efficacy are more likely to adopt active coping behavior.[48] Therefore, the present study hypothesizes that:

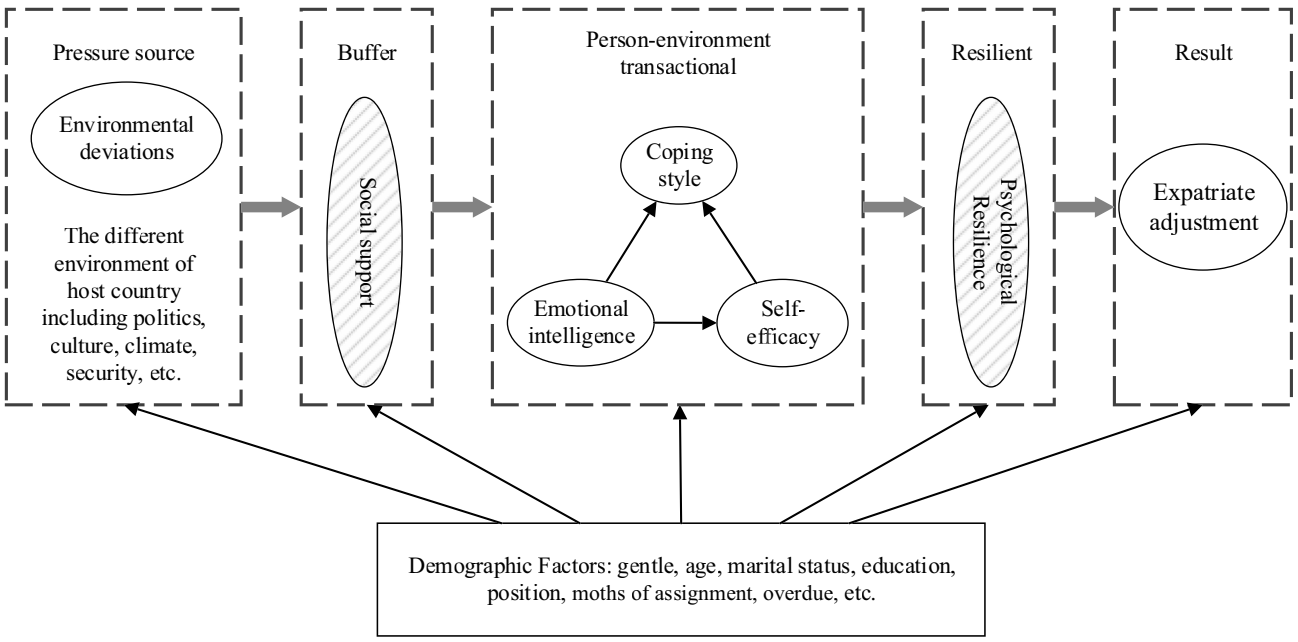

Figure 1 Theoretical model of expatriate adjustment as a resilient outcome.

H2a: Social support is positively correlated with expatriates' active coping style.

H2b: Social support is positively correlated with expatriates' self-efficacy.

Emotional intelligence was conceptualized as a personal trait/ability that involves the cognitive processing of emotional information and using the information to guide one's thinking and actions.[49] People with high emotional intelligence are more likely to feel external support and utilize support dealing with stressful events.[50] At the same time, people with high emotional intelligence can analyze and utilize emotional information, know how to take countermeasures, and have enough confidence to solve problems.[51] Therefore, the present study hypothesizes that:

H3a: Expatriates' emotional intelligence is positively correlated with their active coping style.

H3b: Expatriates' emotional intelligence is positively correlated with their self-efficacy.

H3c: Expatriates' emotional intelligence is positively correlated with their utilization of social support.

H4: Expatriates' self-efficacy is positively correlated with their active coping style.

Antecedents of Psychological Resilience in the Workplace

The antecedents of psychological resilience have been discovered in numerous types of research. In the workplace, personal characteristics such as active coping strategy, self-efficacy, and emotional intelligence have been found to affect employees' resilience.[23,52] Individuals with high self-efficacy are more motivated and persistent at work and thus able to address work challenges better.[53] Many types of research indicated that self-efficacy was positively related to resilience in the workplace.[54,55] Employees' emotional intelligence is regarded as one of the social competencies strongly linked to their resilience.[56] Expatriates with high emotional intelligence can quickly bounce back from emerging markets.[57] Conservation of resources theory[58] treats resilience as a personal resource that social resources from the contextual environment may influence. Concerning work resources, Kuntz, Connell[48] found that colleagues' and supervisors' social support for employees' was positively related to resilience. Therefore, the present study hypothesizes that:

H5a: Expatriates' active coping style is positively correlated with their psychological resilience.

H5b: Expatriates' self-efficacy is positively correlated with their psychological resilience.

H5c: Expatriates' emotional intelligence is positively correlated with their psychological resilience.

H5d: Social support is positively correlated with their psychological resilience.

Psychological Resilience and Expatriate Adjustment

The conservation of resources theory suggests that individuals accumulate and conserve resources in order to achieve high performance at work. In the workplace, psychological resilience was positively related to individual job performance.[14] Resilient individuals were more likely to engage in organizational citizenship behavior.[59] Although there is no research on the relationship between psychological resilience and expatriate performance in international construction projects, it has been proved that there is a positive relationship in multinational enterprises.[60] Resilient employees are better able to deal with adversity and setbacks than their less resilient counterparts.[24] Individuals with high psychological resilience are more likely to achieve good job performance in the assignment.[61] As a manifestation of expatriate performance, expatriate adjustment has been confirmed to be positively affected by psychological resilience.[62] Therefore, the present study hypothesizes that:

H6: Expatriates' psychological resilience is positively correlated with their expatriate adjustment.

All the hypotheses are displayed in Figure 2.

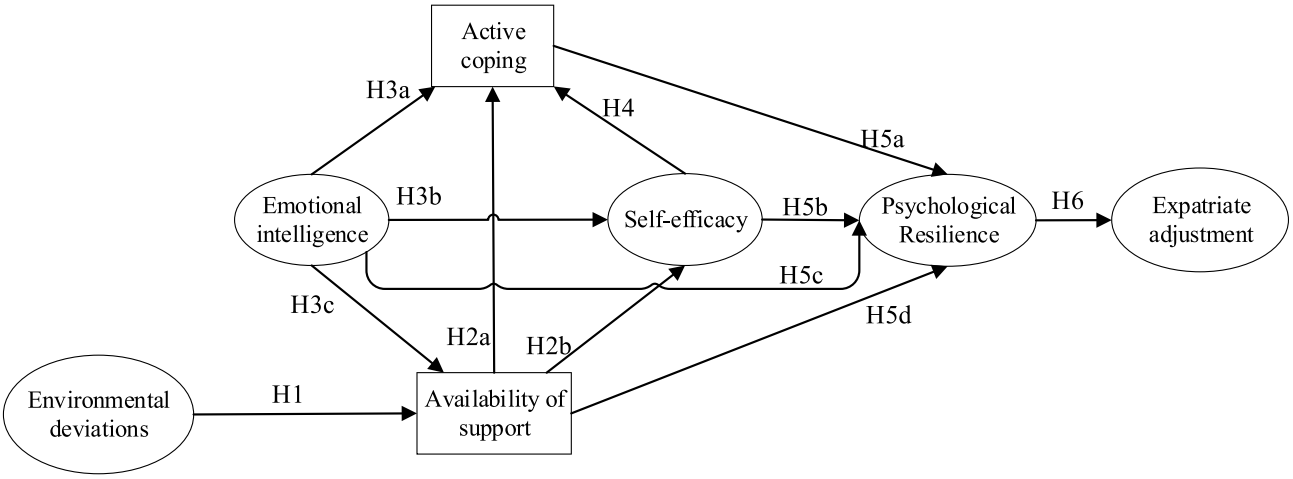

Figure 2 Hypothesis model.

Methods

Samples and Procedure

In this research, expatriates are construction workers sent to overseas projects by international construction companies for approximately 1–3 years. Unlike other industries, employees in the construction industry cannot work remotely through video or e-mail, even during the epidemic. They must be on site. At the same time, the external environment of international construction projects is complex (eg, high political risk), the stakeholders are numerous (eg, owners, contractors, government organizations, and non-governmental organizations), and the assignment time is long (eg, generally at least one year). According to Engineering News-Record 2021, China's market share of international contractors accounts for a quarter of the world's top 250 international contractors. About 1 million expatriates work on projects around the world every year. At the same time, 41.77% of Chinese international construction revenue are in Africa and the Middle East according to the top 250 international contractors list released by the Engineering News-Record in 2022. These regions have high political risks, climate characteristics, and living and cultural habits, which are also quite different from China. Therefore, the research object has certain representativeness and research value among expatriates.

As the total number of expatriates could not be accurately counted, non-probability sampling was used in this study. Moreover, snowball sampling can tap into social networks and capture individuals who might otherwise be missed through traditional sampling methods. By leveraging the networks and relationships within a project, researchers can access participants who possess unique knowledge, experiences, or perspectives that are relevant to the research objectives. This can lead to rich and diverse data that may not be easily obtained through purposive sampling alone.Then, this study utilized a snowball sampling technique to maximize the number of qualified respondents. All respondents to the survey were then asked to refer other eligible individuals who might be interested in participating. First, the leaders of Chinese international contractors familiar with our research group sent questionnaires to their overseas project leaders. Then, international project managers sent the questionnaires to colleagues on the project and other qualified expatriates to fill in. Because the respondents are distributed worldwide, face-to-face research cannot be conducted. Thus, an online questionnaire was conducted for research.

Some measures have been taken to ensure the online questionnaire's validity and reduce response bias. First, the purpose of the research was indicated on the questionnaire cover, and all the data were only used for academic research. Moreover, all respondents participated anonymously. Secondly, all respondents should fill in according to their recent assignment experience. Furthermore, all the questions were not right or wrong; they were just answered according to their subjective feelings. In this way, the respondents' experience of being sent abroad is more profound and true. Third, set some questions in the questionnaire to distinguish the valid respondents. For example, please choose "one" for this question. If the respondent chooses other answers, it will be an invalid questionnaire. Finally, according to the recovered IP address of the online questionnaire, it is determined whether the respondent is on an expatriate assignment. If the IP address is displayed as mainland China, it will be an invalid questionnaire.

The survey was completed in May 2021. According to the above screening methods for valid questionnaires, this research obtained 309 effective questionnaires from 349 for analysis. Table 1 lists the demographic information of this survey.

Measures

Based on the integration of relevant theories of psychological resilience, expatriate adjustment, and construction management practice, seven scales were used in the study. All the measurements reflected the respondents' subjective perceptions and proved reliable. Environmental deviations (ED) was measured by a self-developed scale based on previous literature and interview. It contained six items from five aspects. The item ED was an overall assessment of the environmental deviation. Item ED01-ED05 reflected climatic, working and living habits, political, cultural, and epidemic prevention measures.[63–65]

The other six measurements were based on existing scales. Availability of social support (AS) was measured by the Social Support Rating Scale (SSRS) developed by Xiao.[66] The 10-item scale consists of 3 dimensions: objective support, subjective support, and utility of social support availability. However, using the available support to cope with stress is more valuable to the individual's positive behavior.[67] In this research, only the availability of social support was measured. The scale of Emotional intelligence (EI) was based on Wong and Law's Emotional Intelligence Scale (WLEIS).[68] It contains four dimensions: self-emotional appraisal, others' emotional appraisal, use of emotions, and regulation of emotions. Active coping (AC) style was measured with the Chinese version Simplified Coping Style Questionnaire (SCSQ) from Xie.[69] In this survey, six items reflect active coping strategies. Self-efficacy (SE) was measured by the Chinese Versions of the General Self-efficacy Scale (GSES) developed by Schwarzer, Bassler.[70] It contained six items in this research. The Connor–Davidson Resilience Scale (CD-RISC) of Connor and Davidson[71] is widely applied to measure psychological resilience (PR). It has three versions in the empirical study with 25 items, 10

Table 1 Demographic Information

Profile	Category	Frequency	%
Gender	Male	251	81.23
	Female	58	18.77
Age	≤25	60	19.42
	26–35	146	47.25
	36–45	63	20.39
	46–55	36	11.65
	≥56	4	1.29
Marital status	Single/Divorced/Widowed	165	53.40
	Married/In love	144	46.60
Position	Manager	216	69.90
	Non-manager	93	30.10
Moths of assignment	≤3	51	16.50
	3–6	53	17.15
	6–12	90	29.13
	12–18	52	16.83
	≥18	63	20.39
Assigning location	Europe	30	9.71
	Asia	66	21.36
	United States	11	3.56
	Middle East	45	14.56
	Africa	136	44.01
	Latin America/Caribbean	4	1.29
	Australia	3	0.97
	Canada	1	0.32
	Others	13	4.21
Total		309	100

items and 1 item. The 10-item CD-RISC (CD-RISC-10) has good validation in the workplace.[72] Thus, this paper used the CD-RISC-10 created by Campbell-Sills and Stein[73] to measure individual resilience. The Cronbach's alpha was 0.936 in this research. Expatriate adjustment (EA) was measured with the scale developed by Black and Stephens.[74] It contains three dimensions: general adjustment, interaction adjustment, and work adjustment. The general adjustment dimension was modified according to the management characteristics of international construction industry and was verified to have good reliability.[63] The Cronbach's alpha of expatriate adjustment scale was 0.908.

Each item was assessed on a 5-point Likert scale. According to the literature review results, this study takes the gender and age of expatriates as control variables.

Analytical Approaches

This paper uses structural equation model (SEM) to test the proposed hypothesis. SEM is widely used to research the relationship between multiple dependent and independent variables.[75] There are currently two main types of SEM: Covariance Base SEM (CB-SEM) and Partial Least Squares SEM (PLS-SEM). PLS-SEM has a solid ability to handle complex models[76] and is robust to non-normally distributed data. Meanwhile, as the ED in this study is a formative construct, the sample size does not meet the requirement of more than ten times the items. Therefore the analysis method of PLS-SEM was used. This study adopted partial least squares-structural equation modeling (PLS-SEM) with the SmartPLS V3.3.3 software to assess hypotheses models (Figure 2).

This research followed the analysis procured by Hair, Risher[77] and Sarstedt, Ringle.[78] A measurement model was firstly constructed to verify the validity and reliability of the data. Then, the structural model was tested to evaluate hypothesized path among constructs. Furthermore, Harman's single-factor test was used to examine the common method bias. Ten factors were extracted, and the variance explained by the leading common factor was 36.86% (<40%) before rotation.[79] This indicated that the common method bias is not a significant concern in this study.

Results

Measurement Model Results

The reliability and validity should be checked first in testing the measurement model. The relevant criteria differ for reflective and formative constructs. In this research, the environmental deviation (ED) was measured by a formative measurement, and reflective measurements measured the other constructs. Five indexes of outer loading of items, Cronbach's Alpha, composite reliability (CR), average variance extracted (AVE), and Heterotrait-Monotrait Ratio (HTMT) were used to assess reflective measurement constructs. The PLS Algorithm aided by SmartPLS V3.3.3 software was performed to calculate the index values. The first step was to examine the indicator loadings. All the outer loadings were slightly less than or greater than the threshold of 0.708.[77] The outer loadings of each item were listed in Appendix 1. The second step was to assess internal consistency reliability. The CR values of all the constructs ranged from 0.891 to 0.941 and were considered "good." The Cronbach's Alpha scores from 0.816 to 0.930, higher than the acceptable level of 0.70. The third step was to address the convergent validity. The average variance extracted (AVE) value of each construct ranged from 0.573 to 0.731 (Table 2), all above 0.50.[77] It indicated a significant convergent validity of the measurement

Table 2 Measurement Model Results of Reflective Constructs

Construct	Mean	SD	Cronbach's Alpha	CR	AVE
Availability of social support (AS)	3.730	0.801	0.816	0.891	0.731
Emotional intelligence (EI)	3.747	0.670	0.912	0.930	0.656
Active coping (AC)	3.662	0.662	0.864	0.902	0.649
Self-efficacy (SE)	3.687	0.677	0.871	0.903	0.608
Psychological resilience (PR)	3.828	0.674	0.930	0.941	0.615
Expatriate performance (EA)	3.552	0.684	0.908	0.923	0.573

Abbreviations: SD, Standard deviation; CR, composite reliability; AVE, Average variance extracted.

model. The final step was to assess discriminant validity. The HTMT values are calculated to test the discriminant validity. In Table 3, all the HTMT values are under 0.9, indicating an acceptable discriminant validity of the model.

For formatively measured constructs, measurement models are evaluated based on the following: convergent validity, indicator collinearity, statistical significance, and relevance of the indicator weights.[77] Firstly, convergent validity was assessed by the correlation of ED with an alternative measure of the same concept, "The overall differences between the host country and China (ED)", designed in the questionnaire. The correlation between the ED and ED is 0.878, higher than 0.70.[77] Secondly, the variance inflation factor (VIF) was used to evaluate the collinearity of the formative indicators. The VIF values among the indicators of ED ranged from 2.621 to 3.731 (Table 4). According to Hair, Risher's[77] suggestion, the VIF value is close to 3 and lower but under 5, indicating a critical collinearity issue among the indicators of formatively measured constructs. Finally, the indicator weights statistical significance and relevance with size were evaluated. In case the bootstrap distribution of the indicator weights was skewed, bias-corrected and accelerated (BCa) bootstrap confidence intervals were applied in the analysis.[77] As shown in Table 4, the confidence interval of indicator weight (ED01, ED03, ED04) included zero; this indicated that the weight was not statistically significant. However, the total contribution to the construct was defined by its outer loading.[80] According to Hair, Hult,[81] indicators with a nonsignificant weight should be eliminated if the loading is also not significant. The item loading of ED01 was 0.702 ($p < 0.01$), the loading of ED03 was 0.763 ($p < 0.01$), and the loading of ED04 was 0.701 ($p < 0.01$). Thus, the three indicators were not removed in the following analysis.

Structural Model Results

As the measurement model assessment was satisfactory, the structural model was tested next. In the structural model assessment, the the coefficients of determination (R^2), the blindfolding-based cross-validated redundancy measure (Q^2), the out-of-sample predict power, and the path coefficient with statistical significance were checked. Collinearity was examined before assessing the structural relationships to ensure the regression results were unbiased.[77] As shown in Table 5, the inner variance inflation factor (VIF) values were lower than 3 or close to 3, indicating that collinearity was not an issue.

Table 3 HTMT Values as Evidence of Discriminating Validity

Construct	AS	EI	AC	SE	PR	EA
AS	–					
EI	0.808	–				
AC	0.838	0.841	–			
SE	0.828	0.848	0.827	–		
PR	0.87	0.816	0.847	0.858	–	
EA	0.701	0.729	0.694	0.705	0.651	–

Abbreviations: AS, Availability of social support; EI, Emotional intelligence; AC, Active coping; SE, Self-efficacy; PR, Psychological resilience; EA, Expatriate performance.

Table 4 Measurement Model Results of Formative Construct

Construct and Measurement Items		Item Weight	CIs [2.5%, 97.5%]	Item Loading (p)	VIF
Environmental deviations (ED)	The overall differences between host country and China.				
ED01	Differences of climate compared with China.	0.002	[−0.459, 0.420]	0.746 (0.000)	2.621
ED02	Differences of working and living habits compared with China.	0.623	[0.140, 1.095]		3.731
ED03	Differences of social and political environment compared with China.	−0.182	[−0.631, 0.363]	0.655 (0.000)	3.044
ED04	Differences of culture compared with China.	−0.203	[−0.682, 0.207]	0.701 (0.000)	3.071
ED05	Differences of epidemic prevention measures compared with China.	0.794	[0.389, 1.252]		3.513

Abbreviations: CI, Confidence intervals; VIF, Variance inflation factor.

Table 5 The Inner Variance Inflation Factor Values

Construct	AS	AC	SE	PR	EA
ED	1.233				
AS	1.233	2.717	1.974	3.100	
EI				2.827	
AC		2.750		2.914	
SE					1.000
PR	1.233				

Abbreviations: ED, Environmental deviations; AS, Availability of social support; EI, Emotional intelligence; AC, Active coping; SE, Self-efficacy; PR, Psychological resilience; EA, Expatriate performance.

R^2 values shown in Figure 3 were used to assess the predictive accuracy of the structural model. The R^2 values of all endogenous variables range from 0.390 to 0.743, indicating that the model achieved a moderate explanatory level.[77] In addition, Q^2 values shown in Figure 3 were used to evaluate the predictive relevance of the structural model.[82] The Q^2 values were obtained after the Blindfolding test. Furthermore, the Q^2 values of all endogenous variables were above zero,[83] providing explicit support for the model's predictive relevance.

The model's out-of-sample predictive power was assessed using the PLSpredict procedure. The results (Table 6) showed that constructs of AS, AC, and PR had medium predictive power since a minority of the indicators used during the PLS-SEM analysis had any root mean squared error (RMSE) values or any mean absolute error (MAE) values higher than the naïve linear regression model (LM) benchmark. Meanwhile, constructs of SE and EA had strong predictive power because all the indicators have higher RMSE and MAE values in PLS than in LM.

The path coefficient and significance results were obtained after bootstrapping with 5000 subsamples. The path coefficient and significance provided the basis for testing our hypotheses and the relative strength of the effect of the independent variable on the dependent variable. All the supportive paths were performed in Figure 3. Environmental deviation played a significant effect on social support at the 0.05 level. Moreover, the social support that expatriates perceived significantly affected the expatriates' self-efficiency and resilience. Meanwhile, individual emotional intelligence significantly affected their coping style, self-efficiency, and social support perceived at the 0.001 level. Expatriates' self-efficiency significantly affected their active coping activities and resilience at the 0.001 level. Also, active coping activities played a significant effect on resilience, and resilience significantly affected expatriate adjustment at a 0.001 level. The exact p-value is listed in Table 7. Furthermore, it is found that psychological resilience has a mediating effect between the availability of social support, emotional intelligence, self-efficacy, active copying, and expatriate adjustment (Table 7).

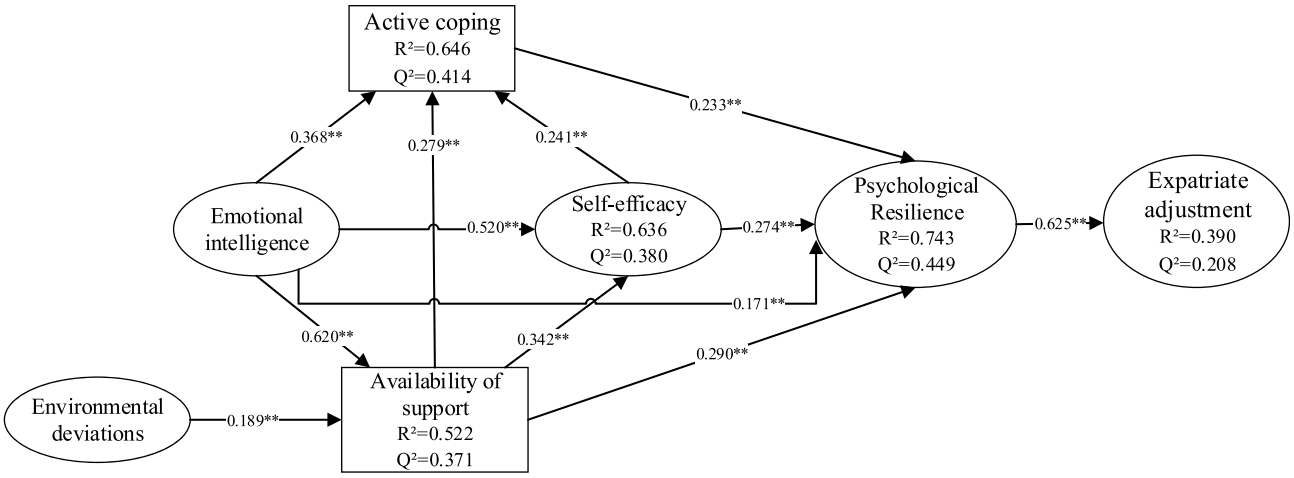

Figure 3 Path analysis results. Only supported paths were displayed.
Note: **p < 0.01.

Table 6 PLSpredict Indicator Prediction Summary

Endogeno Construct's Indicators	PLS		LM		PLS-LM		Decision of predictive relevance
	RMSE	MAE	RMSE	MAE	RMSE	MAE	
AS01	0.779	0.567	0.803	0.581	−0.024	−0.014	Medium predictive power
AS02	0.710	0.509	0.719	0.509	−0.009	0.000	
AS03	0.753	0.534	0.748	0.530	0.005	0.004	
AC01	0.665	0.480	0.684	0.494	−0.019	−0.014	Medium predictive power
AC02	0.699	0.532	0.715	0.549	−0.016	−0.017	
AC03	0.675	0.521	0.669	0.512	0.006	0.009	
AC04	0.631	0.464	0.649	0.479	−0.018	−0.015	
AC05	0.623	0.476	0.648	0.483	−0.025	−0.007	
SE01	0.657	0.497	0.675	0.509	−0.018	−0.012	Strong predictive power
SE02	0.723	0.590	0.750	0.608	−0.027	−0.018	
SE03	0.736	0.583	0.742	0.586	−0.006	−0.003	
SE04	0.746	0.563	0.752	0.567	−0.006	−0.004	
SE05	0.659	0.477	0.675	0.491	−0.016	−0.014	
SE06	0.669	0.507	0.701	0.519	−0.032	−0.012	
PR01	0.636	0.476	0.644	0.482	−0.008	−0.006	Medium predictive power
PR02	0.631	0.481	0.629	0.474	0.002	0.007	
PR03	0.709	0.534	0.700	0.540	0.009	−0.006	
PR04	0.671	0.507	0.674	0.516	−0.003	−0.009	
PR05	0.769	0.581	0.781	0.575	−0.012	0.006	
PR06	0.622	0.450	0.614	0.439	0.008	0.011	
PR07	0.827	0.616	0.848	0.624	−0.021	−0.008	
PR08	0.676	0.515	0.679	0.525	−0.003	−0.010	
PR09	0.674	0.495	0.691	0.512	−0.017	−0.017	
PR10	0.695	0.494	0.722	0.508	−0.027	−0.014	
EA01	0.719	0.528	0.783	0.620	−0.064	−0.092	Strong predictive power
EA02	0.825	0.634	0.853	0.672	−0.028	−0.038	
EA03	0.924	0.735	0.969	0.776	−0.045	−0.041	
EA04	0.859	0.676	0.899	0.701	−0.040	−0.025	
EA05	0.789	0.604	0.834	0.648	−0.045	−0.044	
EA06	0.736	0.547	0.764	0.598	−0.028	−0.051	
EA07	0.647	0.464	0.671	0.516	−0.024	−0.052	
EA08	0.638	0.469	0.648	0.508	−0.010	−0.039	
EA09	0.608	0.432	0.633	0.486	−0.025	−0.054	

Abbreviations: AS, Availability of social support; AC, Active coping; SE, Self-efficacy; PR, Psychological resilience; EA, Expatriate performance; PLS, Partial Least Squares; LM, Linear regression model; RMSE, Root mean squared error; MAE, Mean absolute error.

Table 7 Path Analysis Results

Paths	Path Coefficient	t value	p value	CI [2.5%–97.5%]	
Direct effect					
ED -> AS	0.189	3.118	0.002	0.048	0.287
AS -> AC	0.279	3.575	0.000	0.121	0.426
AS -> SE	0.341	4.783	0.000	0.198	0.476
EI -> AC	0.368	5.008	0.000	0.222	0.513
EI -> SE	0.520	8.121	0.000	0.395	0.645
EI -> AS	0.620	12.435	0.000	0.525	0.716
SE -> AC	0.241	3.196	0.001	0.096	0.394

(*Continued*)

Table 7 (Continued).

Paths	Path Coefficient	t value	p value	CI [2.5%–97.5%]	
AC -> PR	0.233	3.851	0.000	0.114	0.354
SE -> PR	0.274	4.484	0.000	0.158	0.395
EI -> PR	0.171	3.315	0.001	0.072	0.272
AS -> PR	0.290	5.012	0.000	0.176	0.404
PR -> EA	0.625	15.071	0.000	0.529	0.695
Indirect effect					
AC -> PR -> EA	0.145	3.772	0.000	0.071	0.224
SE -> PR -> EA	0.171	4.074	0.000	0.095	0.256
EI -> PR -> EA	0.107	3.096	0.002	0.042	0.177
AS -> PR -> EA	0.181	5.065	0.000	0.111	0.253

Abbreviations: ED, Environmental deviations; AS, Availability of social support; EI, Emotional intelligence; AC, Active coping; SE, Self-efficacy; PR, Psychological resilience; EA, Expatriate performance; CI, Confidence intervals.

Discussion

The results show that psychological resilience has direct and mediating effects on expatriate adjustment. To better understand the psychological mechanism of expatriate adjustment, the multifactor based on psychological resilience can be divided into four stages (Figure 4).

In overseas assignments, expatriates first feel the stimulation of environmental deviations in the host country. Thus, the first stage of factors is about differential shocks. Nevertheless, the perceptions of deviations differ for each expatriate. The confirmation of H1 proves that the degree of perceived differences in the external environment is significantly positively related to collected support and availability of social support. The stronger the external pressure stimulation, the higher the degree of social support needed. This shows that social support plays a significant buffer role in expatriates' dealing with adversity, which is consistent with Kumpfer[37]'s theoretical framework. In the face of stressful events, expatriates do not respond in time to sudden differences and cannot adjust themselves quickly. At this time, the collected support from family, colleagues, and organizations is the fastest protection resource available to expatriates. Then, expatriates can use this support to take active coping and improve individual efficacy and psychological resilience

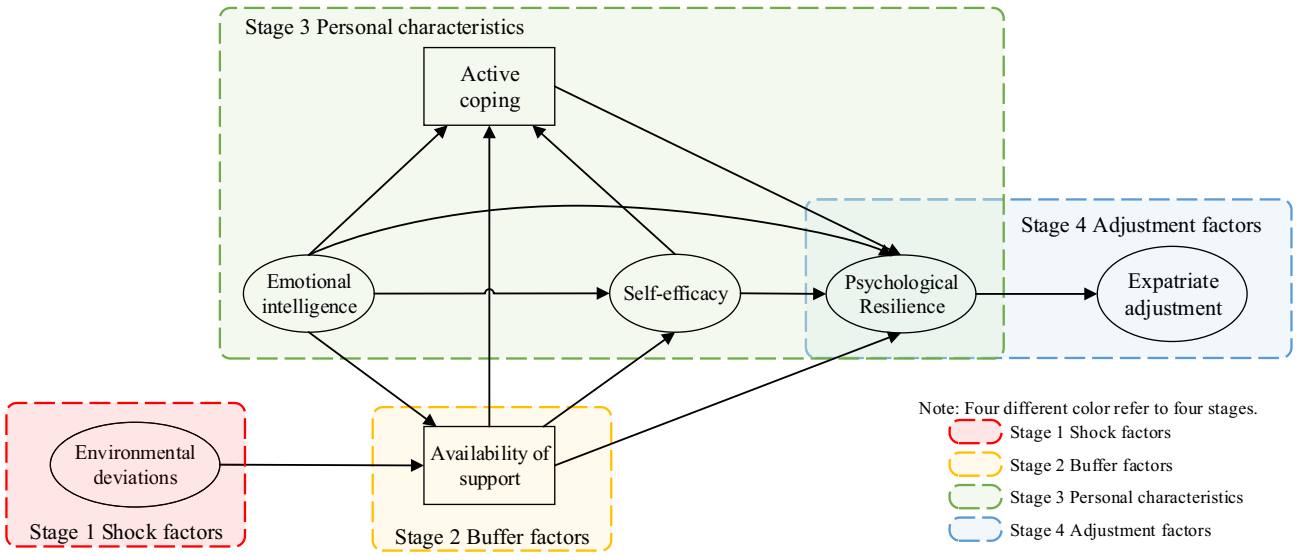

Figure 4 Factors of expatriate adjustment responding to adversity.

(H2a, H2b, H5d). It is consistent with the conservation of resources theory.[58] While expatriates are far away from their families, support from the organization and team colleagues is easier to collect and use. This requires timely intervention by project managers, especially those expatriates in the early stage of the assignment. Thus, the availability of expatriate management practices (eg, social support) acts as a buffer factor for the second stage.

The third stage factors are personal characteristics. Expatriates' personal characteristics of emotional intelligence, active coping style, and self-efficiency interact and have a critical effect on building psychological resilience. The hypotheses testing results (H3a, H3b, H3c, H5c) show that individual emotional intelligence plays a positive role in the availability of external support, actively coping with adversity, improving self-efficacy, and developing psychological resilience. This is consistent with Goleman[84] that emotional intelligence reflects the ability to recognize our feelings, manage emotions effectively, and encompass social behaviors. However, emotional intelligence is a personal trait that cannot be changed easily. Expatriates with self-efficiency and coping with stressors actively feel hopeful and optimistic in cross-cultural environments. The broaden-and-build theory[85] states that positive emotions produce positive cognitions and behaviors that cause the development of psychological resilience.[47] Expatriates' positive activities in coping with stressful events are positively related to psychological resilience (H5a). At the same time, individual self-efficacy plays a significant role in taking active coping styles and improving psychological resilience (H4, H5b). These positive personal characteristics finally broaden lasting psychological resources (psychological resilience) and benefit the adaptation of expatriates. The last stage is adjustment factors. The result of H6 shows that psychological resilience is significantly correlated with the level of expatriate adjustment. Thus, expatriate adjustment can be regarded as the development result of expatriates' psychological resilience. Meanwhile, four indirect paths on expatriate adjustment indicate positive personal characteristics predict positive expatriate performance by activating positive psychological resilience. The broaden-and-built theory indicates that expatriates actively call on various positive external and individual resources to respond to adversity. This makes the individual's psychological resilience develop to an ideal level to adapt to the assignment. It can ensure the efficiency and performance of expatriate work by maintaining a high level of adaptability.

Theoretical Implications

First, this study concretizes the psychological mechanisms of expatriate adaptation. It expands the research on the effect mechanisms of expatriate adjustment and the mediating effect of psychological resilience. It is a concrete application of the p-e fit theory in a cross-cultural context. This study construct and verify a theoretical expatriate adjustment model based on psychological resilience development. The hypothesis testing results clearly explain the relationship mechanism between the psychological resilience of expatriates and expatriate adjustment in international assignments. The direct and mediation effects of psychological resilience on expatriate adjustment verify that expatriate adjustment is a psychological adjustment proposed by psychologists. Next, the indirect effect of the availability of support on expatriate adjustment is empirical evidence that the perceptual element is integral. It extends the understanding of social/organizational support in the workplace. Actual, perceived, and utilized support are three levels of support. Researchers have a controversy about the buffer effect of social support. This research states that the buffer effect is that individuals utilize their perceived external support to cope with stressors and reduce the impact on their mental health.

Another contribution is worth discussing. By comprehensively analyzing the development process of psychological resilience and expatriate adjustment, it is found that the development process of expatriate psychological resilience can be combined with the known expatriate adjustment curve. In the dynamics dimension of expatriate adjustment,[5] emotion/mood is hypothesized to exhibit a U-shaped overall trend similar to the expatriate adjustment U-curve. They explain that emotions may vary unpredictably based on chance interactions. A single bad experience may cause negative emotions. The emotion is influenced by behavioral and cognitive adjustment. As psychological resilience is closely and positively influenced by emotion status; thus, the change curve of psychological resilience is assumed to be similar to that of emotion. It is found that the current expatriates are not ignorant about the host country they will be expatriated. They have some knowledge of the host country through the Internet, social media, and colleagues. Takeuchi and Chen[86] proposed that expatriates with overseas experience or familiarity with the host country's culture in advance can skip the honeymoon stage during the adjustment process and proposed the adjusted U-curve. Therefore, the expatriate adjustment

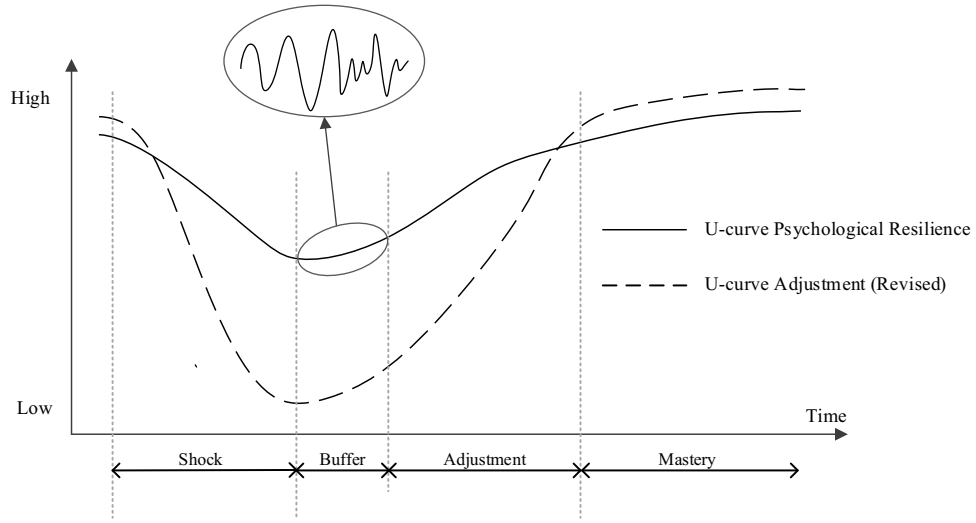

Figure 5 Stages of resilience development and expatriate adjustment.

process is closer to the revised U-curve adjustment.[86] This research hypothesize that the psychological resilience level of expatriates may have a similar U-curve change pattern with the expatriate adjustment process when encountering a stress event (expatriate work). Namely, the U-curve of psychological resilience development can maintain a certain consistency with the U-curve of expatriate adjustment (shown in Figure 5). The development of psychological resilience and expatriate adjustment can be divided into four stages (shock, buffer, adjustment, and mastery). However, it is believed that the change range of the psychological resilience curve will be less than that of the expatriate adjustment curve. Because Garmezy, Werner[32] believe that psychological resilience is one of the traits of individuals, and the change will not be too significant in a short period. These will be confirmed by longitudinal research in the future. Furthermore, according to our interviews with some international project managers, they said that "We will grow up after every emergency and deal with it better next time." We assume that among some expatriates who are developing and growing, they have a strong ability to summarize and adapt themselves. Their psychological resilience curve may show an upward spiral trend.

Managerial Implications

The findings of this study point out that the individual psychological resilience of expatriates has a positive impact on expatriate adjustment, as well as the internal and external factors that affect the psychological resilience of expatriates. The research results provide some basis for managers to carry out expatriate management. First, managers can take the level of individual psychological resilience as one of the criteria for selecting expatriates. For example, employees with a high level of individual psychological resilience are the first selection for assignment. Second, the research results provide paths for managers to help expatriates adapt to overseas assignments. The development of psychological resilience is divided into different stages, corresponding to the expatriate adjustment stage. Managers can formulate help countermeasures according to the adjustment stage and psychological resilience development stage of expatriates. For example, before and at the beginning of the assignment, organize the expatriates to study the host country's politics, culture, customs, and laws to reduce the impact of cultural differences first. In the second step, parent companies provide enough organizational support for expatriates, help their families at home solve problems, and reduce the impact of cultural differences from the outside. In the third step, it is necessary to do an excellent job in expatriates' intervention and guidance. For example, the assistance of psychologists and the organization of psychological counseling activities. Finally, when the state of expatriate adjustment is relatively stable, the managers can give more encouragement and adopt affirmation measures to stabilize the individual's psychological resilience level in daily work.

Limitations and Future Research

Some limitations and future directions in this research are worth mentioning. First, this study adopted cross-sectional data for model verification. The expatriate adjustment and psychological resilience development are dynamic processes; thus, it is necessary to conduct longitudinal research to verify the changing curve in the future. Haslberger[5] suggested the dairy method as feasible, considering the complexity of adjustment longitudinal studies. Second, this model is an individual-level hypothesis. However, international assignments are mainly based on teamwork. So, more factors at team and organization levels affect psychological resilience, and expatriate adjustment should be considered. Lastly, this research used a Chinese sample for research in this paper. However, the research object has certain representativeness and research value in the construction industry. More samples will be collected from different cultural backgrounds to verify and modify the process model.

Conclusion

This paper constructs and verifies a framework of expatriate adjustment based on the perspective of psychological resilience. It is found that the development process of psychological resilience is coordinated with the process of expatriate adjustment, which verifies that expatriate adjustment is a kind of psychological adjustment. This research puts forward a new perspective on expatriate adjustment research and extends psychological resilience research to expatriates. According to the results, the multifactor of expatriate adjustment is clarified into four stages. This provides evidence for managers' selection of constructs (eg, availability of support, emotional intelligence, self-efficacy, active coping style, and psychological resilience) that should be targeted in expatriate adjustment improvement. Meanwhile, the managers could carry out management strategies according to the different stages of the expatriate. In the end, this paper puts forward the U-curve hypothesis of psychological resilience development for future research.

Data Sharing Statement

The data that support the findings of this study are available on request from the corresponding author Xiaopeng Deng (Email: dxp@seu.edu.cn).

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.

References

1. Kraimer M, Bolino M, Mead B. Themes in expatriate and repatriate research over four decades: what do we know and what do we still need to learn? In: Morgeson FP, editor. *Annual Review of Organizational Psychology and Organizational Behavior*. Vol. 3. Annual Reviews; 2016:83–109.
2. Swaak RA. Expatriate failures: too many, too much cost, too little planning. *Compens Benefits Rev.* 1995;27(6):47–55. doi:10.1177/088636879502700609
3. Harzing AW, Christensen C. Expatriate failure: time to abandon the concept? *Career Dev Int*. 2004;9(7):616–626. doi:10.1108/13620430410570329
4. Lin -C-C, C-S L. Cultural differences and job performance in container shipping: a social exchange theory perspective. *Marit Policy Manag*. 2021;2021:1–25.

5. Haslberger A, Brewster C, Hippler T. *Managing Performance Abroad: A New Model for Understanding Expatriate Adjustment*. 1st ed. Routledge; 2014.
6. Brown S, Brooks RD, Dong XS. Impact of COVID-19 on construction workers and businesses; 2020.
7. Gao L, Luo X, Yang W, Zhang N, Deng X. Relationship between social support and repatriation intention of expatriates in international construction projects. *Eng Constr Archit Manag*. 2022;2022:1.
8. Gao L, Deng X, Yang W, Fang J. COVID-19 related stressors and mental health outcomes of expatriates in international construction. *Front Public Health*. 2022;10. doi:10.3389/fpubh.2022.961726
9. Han Y, Sears GJ, Darr WA, Wang Y. Facilitating cross-cultural adaptation: a meta-analytic review of dispositional predictors of expatriate adjustment. *J Cross Cult Psychol*. 2022;53(9):1054–1096. doi:10.1177/00220221221109559
10. Huff KC, Song PP, Gresch EB. Cultural intelligence, personality, and cross-cultural adjustment: a study of expatriates in Japan. *Int J Intercult Rel*. 2014;38:151–157. doi:10.1016/j.ijintrel.2013.08.005
11. Shi X, Franklin P. Business expatriates' cross-cultural adaptation and their job performance. *Asia Pac J Hum Resour*. 2014;52(2):193–214. doi:10.1111/1744-7941.12003
12. Thomas WI, Znaniecki F. *The Polish Peasant in Europe and America: A Classic Work in Immigration History*. University of Illinois Press; 1996.
13. Graves TD. Psychological acculturation in a Tri-Ethnic community. *Southwest J Anthropol*. 1967;23(4):337–350. doi:10.1086/soutjanth.23.4.3629450
14. Luthans F, Avolio BJ, Avey JB, Norman SM. Positive psychological capital: measurement and relationship with performance and satisfaction. *Pers Psychol*. 2007;60(3):541–572. doi:10.1111/j.1744-6570.2007.00083.x
15. Luthans F, Youssef CM, Sweetman DS, Harms PD. Meeting the leadership challenge of employee well-being through relationship. *J Leadersh Org Stud*. 2013;20(1):118–133. doi:10.1177/1548051812465893
16. Haslberger A, Brewster C. The expatriate family: an international perspective. *J Manage Psychol*. 2008;23(3):324–346. doi:10.1108/02683940810861400
17. Black JS, Mendenhall M. Cross-cultural training effectiveness: a review and a theoretical framework for future research. *Acad Manage Rev*. 1990;15(1):113–136. doi:10.2307/258109
18. Selmer J. Psychological barriers to adjustment of Western business expatriates in China: newcomers vs long stayers. *Int J Hum Resour Man*. 2004;15(4–5):794–813. doi:10.1080/0958519042000192951
19. Sousa C, Gonçalves G, Santos J, Leitão J. Organizational practices for the expatriates' adjustment: a systematic review. *J Glob Mobil*. 2017;5(3):251–274. doi:10.1108/JGM-03-2017-0011
20. Ward C, Bochner S, Furnham A. *The Psychology of Culture Shock*. Routledge; 2020.
21. Maertz CP, Takeuchi R, Chen J. An episodic framework of outgroup interaction processing: integration and redirection for the expatriate adjustment research. *Psychol Bull*. 2016;142(6):623. doi:10.1037/bul0000032
22. Edwards JR, Caplan RD, Van Harrison R. Person-environment fit theory. *Theor Organ Stress*. 1998;28(1):67–94.
23. Hartmann S, Weiss M, Newman A, Hoegl M. Resilience in the workplace: a multilevel review and synthesis. *Appl Psychol Int Rev*. 2020;69(3):913–959. doi:10.1111/apps.12191
24. Shin J, Taylor MS, Seo MG. Resources for change: the relationships of organizational inducements and psychological resilience to employees' attitudes and behaviors toward organizational change. *Acad Manage J*. 2012;55(3):727–748. doi:10.5465/amj.2010.0325
25. Gabriel AS, Koopman J, Rosen CC, Arnold JD, Hochwarter WA. Are coworkers getting into the act? An examination of emotion regulation in coworker exchanges. *J Appl Psychol*. 2020;105(8):907–929. doi:10.1037/apl0000473
26. Lee JE, Sudom KA, Zamorski MA. Longitudinal analysis of psychological resilience and mental health in Canadian military personnel returning from overseas deployment. *J Occup Health Psychol*. 2013;18(3):327–337. doi:10.1037/a0033059
27. Turner M, Holdsworth S, Scott-Young CM, Sandri K. Resilience in a hostile workplace: the experience of women onsite in construction. *Constr Manag Econ*. 2021;39(10):839–852. doi:10.1080/01446193.2021.1981958
28. Masten AS. Ordinary magic. Resilience processes in development. *Am Psychol*. 2001;56(3):227–238. doi:10.1037/0003-066X.56.3.227
29. Fisher DM, Ragsdale JM, Fisher ECS. The importance of definitional and temporal issues in the study of resilience. *Appl Psychol Int Rev*. 2019;68(4):583–620. doi:10.1111/apps.12162
30. Luthar SS, Sawyer JA, Brown PJ. Conceptual issues in studies of resilience: past, present, and future research. *Ann N Y Acad Sci*. 2006;1094:105–115. doi:10.1196/annals.1376.009
31. Britt TW, Shen W, Sinclair RR, Grossman MR, Klieger DM. How much do we really know about employee resilience? *Ind Organ Psychol*. 2016;9(2):378–404. doi:10.1017/iop.2015.107
32. Garmezy N, Werner E, Smith R. Vulnerable but invincible: a longitudinal study of resilient children and youth. EE Werner Overcoming the odds: High risk children from birth to adulthood; 1981.
33. Wolin S, Wolin S. *The Resilient Self: How Survivors of Troubled People Rise Over Adversity*. NY: Villard Guides; 1993.
34. Richardson GE. The metatheory of resilience and resiliency. *J Clin Psychol*. 2002;58(3):307–321. doi:10.1002/jclp.10020
35. McLarnon MJ, Rothstein MG. Development and initial validation of the workplace resilience inventory. *J Pers Psychol*. 2013;2013:1.
36. Luthar SS, Cicchetti D, Becker B. The construct of resilience: a critical evaluation and guidelines for future work. *Child Dev*. 2000;71(3):543–562. doi:10.1111/1467-8624.00164
37. Kumpfer KL. *Factors and Processes Contributing to Resilience*. Springer US; 2002.
38. Biggio G, Cortese C. Well-being in the workplace through interaction between individual characteristics and organizational context. *Int J Qual Stud Heal*. 2013;8(1):19823. doi:10.3402/qhw.v8i0.19823
39. Cohen S, Wills TA. Stress, social support, and the buffering hypothesis. *Psychol Bull*. 1985;98(2):310–357. doi:10.1037/0033-2909.98.2.310
40. Viswesvaran C, Sanchez JI, Fisher J. The role of social support in the process of work stress: a meta-analysis. *J Vocat Behav*. 1999;54(2):314–334. doi:10.1006/jvbe.1998.1661
41. Misra R, Crist M, Burant CJ. Relationships among life stress, social support, academic stressors, and reactions to stressors of international students in the United States. *Int J Stress Manag*. 2003;10(2):137–157. doi:10.1037/1072-5245.10.2.137
42. Mancini AD, Littleton HL, Grills AE. Can people benefit from acute stress? Social support, psychological improvement, and resilience after the virginia tech campus shootings. *Clin Psychol Sci*. 2015;4(3):401–417. doi:10.1177/2167702615601001

43. Chu X, Li Y, Wang P, Zeng P, Lei L. Social support and cyberbullying for university students: the mediating role of internet addiction and the moderating role of stress. *Curr Psychol*. 2021;2021:1.
44. Ye G, Xiang Q, Yang L, et al. Safety stressors and construction workers' safety performance: the mediating role of ego depletion and self-efficacy. *Front Psychol*. 2022;12. doi:10.3389/fpsyg.2021.818955
45. Khakimova N, Kaur D, Singh JSK. The role of pshological wellbeing and personal resilience towards successful expatriate assignees in High Risk Countries (HRCs). *Int J Psychosoc Rehabil*. 2020;24(2):1167–1183. doi:10.37200/IJPR/V24I2/PR200418
46. Uygun E, Cebeci RB, Ozsoy E, Basar S, Erim BR, Erkoc NS. Investigation of the relationship between perceived social support and psychological resilience in bipolar disorder: a cross-sectional study. *Anadolu Psikiyatr De*. 2020;21(1):37–44.
47. Fredrickson BL. The role of positive emotions in positive psychology. The broaden-and-build theory of positive emotions. *Am Psychol*. 2001;56 (3):218–226. doi:10.1037/0003-066X.56.3.218
48. Kuntz J, Connell P, Näswall K. Workplace resources and employee resilience: the role of regulatory profiles. *Career Dev Int*. 2017;22(4):419–435. doi:10.1108/CDI-11-2016-0208
49. Mayer JD, Dipaolo M, Salovey P. Perceiving affective content in ambiguous visual-stimuli - a component of emotional intelligence. *J Pers Assess*. 1990;54(3–4):772–781.
50. Bunce L, Lonsdale AJ, King N, Childs J, Bennie R. Emotional intelligence and self-determined behaviour reduce psychological distress: interactions with resilience in social work students in the UK. *Brit J Soc Work*. 2019;49(8):2092–2111. doi:10.1093/bjsw/bcz008
51. Konanahalli A, Oyedele LO. Emotional intelligence and British expatriates' cross-cultural adjustment in international construction projects. *Constr Manag Econ*. 2016;34(11):751–768. doi:10.1080/01446193.2016.1213399
52. Kuntz JR, Malinen S, Näswall K. Employee resilience: directions for resilience development. *Consult Psychol J*. 2017;69(3):223–242. doi:10.1037/cpb0000097
53. Rook C, Smith L, Johnstone J, et al. Reconceptualising workplace resilience-A cross-disciplinary perspective. *Ann Psychol*. 2018;34(2):332–339.
54. Lyons ST, Schweitzer L, Ng ESW. Resilience in the modern career. *Career Dev Int*. 2015;20(4):363–383. doi:10.1108/CDI-02-2015-0024
55. Anasori E, Bayighomog SW, Tanova C. Workplace bullying, psychological distress, resilience, mindfulness, and emotional exhaustion. *Serv Ind J*. 2020;40(1–2):65–89. doi:10.1080/02642069.2019.1589456
56. Förster C, Duchek S. What makes leaders resilient? An exploratory interview study. *Ger J Hum Resour Manag*. 2017;31(4):281–306. doi:10.1177/2397002217709400
57. Singh SK, Vrontis D, Christofi M. What makes mindful self-initiated expatriates bounce back, improvise and perform: empirical evidence from the emerging Markets. *Eur Manag Rev*. 2021;13:1.
58. Hobfoll SE. Conservation of resources. A new attempt at conceptualizing stress. *Am Psychol*. 1989;44(3):513–524. doi:10.1037/0003-066X.44.3.513
59. Jung HS, Yoon HH. The impact of employees' positive psychological capital on job satisfaction and organizational citizenship behaviors in the hotel. *Int J Contemp Hosp M*. 2015;27(6):1135–1156. doi:10.1108/IJCHM-01-2014-0019
60. Tripathi CM, Singh T. Sailing through the COVID-19 pandemic: managing expatriates' psychological well-being and performance during natural crises. *J Glob Mobil*. 2021;17:1.
61. Brown CJ, Butt J, Sarkar M. Overcoming performance slumps: psychological resilience in expert cricket batsmen. *J Appl Sport Psychol*. 2020;32 (3):277–296. doi:10.1080/10413200.2018.1545709
62. Edwards KJ, Dodd CH, Rosenbusch KH, Cerny LJ. Measuring expatriate cross-cultural stress: a reanalysis of the Cerny Smith assessment. *J Psychol Theol*. 2016;44(4):268–280. doi:10.1177/009164711604400402
63. Konanahalli A, Oyedele LO, Spillane J, Coates R, Meding JV, Ebohon J. Cross-cultural intelligence (CQ): it's impact on British expatriate adjustment on international construction projects. *Int J Manag Proj*. 2014;7(3):423–448. doi:10.1108/IJMPB-10-2012-0062
64. Bierwiaczonek K, Waldzus S. Socio-cultural factors as antecedents of cross-cultural adaptation in expatriates, international students, and migrants: a review. *J Cross Cult Psychol*. 2016;47(6):767–817. doi:10.1177/0022022116644526
65. Kempf C, Holtbrugge D. Moderators and mediators of cross-cultural training effectiveness: literature review and development of a conceptual model. *Eur J Int Manag*. 2020;14(2):293–326. doi:10.1504/EJIM.2020.105544
66. Xiao SY. The theoretical basis and research application of social support rating scale. *J Clin Psychiatry*. 1994;4(2):98–100.
67. Newland J, Furnham A. Perceived availability of social support. *Pers Indiv Differ*. 1999;27(4):659–663. doi:10.1016/S0191-8869(98)00254-2
68. Wong C-S, Law KS. Wong and law emotional intelligence scale. The Leadership Quarterly; 2002.
69. Xie Y. Reliability and validity of the simplified coping style questionnaire. *Chin J Clin Psychol*. 1998;2:114–115.
70. Schwarzer R, Bassler J, Kwiatek P, Schroder K, Zhang JAX. The assessment of optimistic self-beliefs: comparison of the German, Spanish, and Chinese versions of the general self-efficacy scale. *Appl Psychol Int Rev*. 1997;46(1):69–88. doi:10.1111/j.1464-0597.1997.tb01096.x
71. Connor KM, Davidson JR. Development of a new resilience scale: the Connor-Davidson Resilience Scale (CD-RISC). *Depress Anxiety*. 2003;18 (2):76–82. doi:10.1002/da.10113
72. Norouzinia R, Ebadi A, Ferdosi M, Masoumi G, Tayebi Z, Yarmohammadian MH. A systematic review of psychometric properties of workplace resilience measurement scales. *Tpm Test Psychom Met*. 2020;27(2):251–269.
73. Campbell-Sills L, Stein MB. Psychometric analysis and refinement of the Connor-davidson Resilience Scale (CD-RISC): validation of a 10-item measure of resilience. *J Trauma Stress*. 2007;20(6):1019–1028. doi:10.1002/jts.20271
74. Black JS, Stephens GK. The influence of the spouse on American expatriate adjustment and intent to stay in pacific rim overseas assignments. *J Manag*. 1989;15(4):529–544.
75. Henseler J, Ringle CM, Sinkovics RR. *The Use of Partial Least Squares Path Modeling in International Marketing. New Challenges to International Marketing*. Emerald Group Publishing Limited; 2009.
76. Ringle CM, Sarstedt M, Straub DW. Editor's comments: a critical look at the use of PLS-SEM in" MIS Quarterly". MIS quarterly; 2012.
77. Hair JF, Risher JJ, Sarstedt M, Ringle CM. When to use and how to report the results of PLS-SEM. *Eur Bus Rev*. 2019;31(1):2–24. doi:10.1108/EBR-11-2018-0203
78. Sarstedt M, Ringle CM, Hair JF. Partial least squares structural equation modeling. In: *Handbook of Market Research*. Cham: Springer International Publishing; 2021:1–47.

79. Fuller CM, Simmering MJ, Atinc G, Atinc Y, Babin BJ. Common methods variance detection in business research. *J Bus Res*. 2016;69(8):3192–3198. doi:10.1016/j.jbusres.2015.12.008
80. Cenfetelli RT, Bassellier G. Interpretation of formative measurement in information systems research. *Mis Quart*. 2009;33(4):689–707. doi:10.2307/20650323
81. Hair JF, Hult GTM, Ringle CM, Sarstedt M, Thiele KO. Mirror, mirror on the wall: a comparative evaluation of composite-based structural equation modeling methods. *J Acad Market Sci*. 2017;45(5):616–632. doi:10.1007/s11747-017-0517-x
82. Hair JF, Hult GTM, Ringle CM, Sarstedt M. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. SAGE Publications; 2021.
83. Chin WW. How to write up and report PLS analyses. In: *Handbook of Partial Least Squares*. Springer; 2010:655–690.
84. Goleman D. Emotional intelligence. Why it can matter more than IQ. *Learning*. 1996;24(6):49–50.
85. Fredrickson BL. The broaden-and-build theory of positive emotions. *Philos Trans R Soc Lond B Biol Sci*. 2004;359(1449):1367–1378. doi:10.1098/rstb.2004.1512
86. Takeuchi R, Chen JY. The impact of international experiences for expatriates' cross-cultural adjustment: a theoretical review and a critique. *Organ Psychol Rev*. 2013;3(3):248–290.