Risk Management and Healthcare Policy

Dovepress

open access to scientific and medical research

Open Access Full Text Article

ORIGINAL RESEARCH

Linking Frontline Employee Self-Efficacy to Customers Service Performance in Healthcare Industry: A Dynamic Capability Perspective

Rong Li[1], Jing Liu[2], Weidong Xia[3], Jingdong Ma[1,4]

[1]School of Medicine and Health Management, Huazhong University of Science and Technology, Wuhan, People's Republic of China; [2]Administrative Office, Yuebei People's Hospital, Shaoguan, People's Republic of China; [3]Department of Information Systems and Business Analytics, College of Business, Florida International University, Miami, FL, USA; [4]Institute for Smart Health Research, Huazhong University of Science and Technology, Wuhan, People's Republic of China

Correspondence: Jingdong Ma, School of Medicine and Health Management, Huazhong University of Science and Technology, Wuhan, Hubei, 430030, People's Republic of China, Tel +8613098807808, Email jdma@hust.edu.cn

Purpose: In the complex and rapidly changing healthcare environment, the dynamic capabilities of frontline employees (FLEs) to integrate resources and adapt to environmental changes are crucial. This study aims to investigate the relationship between FLEs' self-efficacy, dynamic capabilities (including sensing capability and reconfiguring capability), and their impact on service performance.

Methods: Data were collected from a matched sample of 123 doctors and 762 corresponding consumers from two medical aesthetic hospitals in China. SPSS and SmartPLS are used to test the proposed model.

Results: The findings indicate that FLEs' self-efficacy positively influences their service performance through the mediation of dynamic capabilities. Moreover, while the direct impact of FLEs' sensing capabilities on service performance was found to be insignificant, it was observed that these capabilities indirectly affect service performance through reconfiguring capabilities.

Conclusion: This study presents theories and arguments on the role of self-efficacy and dynamic capabilities in improving service performance. These findings contribute to a deeper understanding of how FLEs cultivate the dynamic capability of resource integration, offering valuable insights for the attainment of sustainable competitive advantages.

Keywords: dynamic environment, frontline employee, self-efficacy, dynamic capability, service performance

Introduction

Medical services, as personalized professional offerings, play a crucial role for frontline employees (FLEs) in delivering high-quality service,[1] meeting customer demands,[2,3] and shaping customer experiences.[4] In the increasingly competitive healthcare market environment, management recognizes that investing in the knowledge, skills, and capabilities of FLEs through effective human resource practices is one of the key factors for organizational success and survival.[5] It has been reported that organizations have spent millions of dollars on training and developing the capabilities of FLEs, yet there still exist performance disparities,[6] and research on the reasons behind these disparities has been found to be limited.[7]

Self-efficacy is considered a key predictive indicator of job performance.[8,9] The positive correlation between self-efficacy and performance has been supported in numerous studies. However, some research suggests that the relationship between self-efficacy and performance is not always positive; instead, it can be neutral or even negative, depending on how self-efficacy exerts its influence.[10] A meta-analysis by Sitzmann and Yeo indicated that self-efficacy is related to performance indirectly through factors such as planning, attention, goal setting, resource allocation, and other performance-influencing factors.[11] Given that job performance is an important concept in fields like organizational psychology and organizational behavior,[12] understanding potential mechanisms that may explain the self-efficacy-performance relationship is of paramount importance.

While there has been productive research on the mechanisms through which self-efficacy influences performance,[13–15] there are still some key areas that remain unexplored or have received limited attention. Against the backdrop of today's

Received: 5 October 2023
Accepted: 2 December 2023
Published: 13 December 2023

rapidly changing external environment, employees need to dynamically perceive changes in the external environment and develop the ability to adapt to new challenging conditions. These abilities are considered employees' dynamic capabilities,[7] which contribute to facilitating outstanding performance among employees. Furthermore, self-efficacy is a particular cognitive resource characterized by its relative plasticity and openness to change and development,[16] which aids in the development of dynamic capabilities for perceiving environmental changes and addressing current issues.

However, to the best of our knowledge, no prior research has identified dynamic capability as the primary mediator of the impact of self-efficacy on service performance. Furthermore, research on this topic is relatively scarce, despite dynamic capability being a critical skill for employees to adapt to environmental changes and gain a competitive edge. Given these arguments, it is necessary to adopt a dynamic capability perspective when exploring the relationship between self-efficacy and service performance, focusing on the contribution process of cognitive resources. Therefore, this study, from a dynamic capability perspective, examines how FLEs' self-efficacy influences their sensing capability and reconfiguring capability to enhance service performance, delving deeper into the process of self-efficacy-dynamic capability-service performance.

The empirical background is medical aesthetic hospitals. First, the market for medical aesthetic services is characterized by continuous product and technological innovations, accompanied by intense competition.[17] Second, the advent of the internet and social media has further contributed to a highly competitive market environment in the medical aesthetic industry.[18] Third, in medical aesthetic services, customers prioritize functional quality, such as empathy and care, over technical quality associated with surgical procedures or clinical treatments.[19] Therefore, the medical aesthetic hospital, as the research setting, offers a rich and unique backdrop for investigating the key constructs of this study.

This study makes significant contributions to the existing literature. First, with the ongoing discussions on the relationship between self-efficacy and performance as a backdrop, this study endeavors to capture the internal processes engaged in addressing the gaps identified in the existing literature. Second, there is limited research on dynamic capability as an individual capability, especially in the healthcare industry.[20,21] This study investigates the dynamic capabilities of medical aesthetic doctors, addressing the gap in the literature regarding the lack of attention to employee roles in dynamic capability research.[20,22] Lastly, the study employs customer evaluations as a measure of service performance, where employee service performance reflects behaviors that assist and serve customers.[23] This utilization of customer evaluations helps track the quality of services provided by FLEs and aligns with the growing demand to expand the measurement of service performance from a producer perspective to an external perspective.[24,25]

Literature Review and Hypotheses Development

Dynamic Capabilities Theory

Dynamic capabilities refer to the capacity of an organization to sense, integrate, and reconfigure its internal and external resources in order to effectively respond to a rapidly changing environment.[26] The dynamic capability view highlights two aspects of achieving competitive advantage: dynamic and capability. Dynamic refers to the strategic response required to adapt to environmental changes, while capability is the ability to effectively utilize knowledge, capabilities, and resources to accomplish a specific objective.[27] Dynamic capabilities enable companies to adapt and reallocate resources to capitalize on opportunities for change, serving as the bedrock for achieving competitive advantage.[28] FLEs, who directly engage with customers and possess specialized practical knowledge regarding complex service procedures and evolving customer needs, represent a significant source of emerging opportunities and threats.[29] Therefore, the ability of organizations to dynamically match their environments is reflected in the competence of the FLEs who work closely with customers. The dynamic capabilities of employees have emerged as crucial for establishing a sustainable competitive advantage in intricate and volatile environments.[28,30] In healthcare settings, providers significantly shape patients' perceptions of quality and value.[1] With the healthcare environment growing increasingly dynamic, a critical link exists between the dynamic capabilities of healthcare providers and their service performance.[21,31]

Based on the studies conducted by Faccin et al and Wilden and Gudergan, this study examines two interconnected capabilities within the framework of dynamic capabilities: sensing capability and reconfiguring capability.[32,33] Sensing capability aids FLEs in scanning external threats and opportunities as well as identifying strengths and

weaknesses within the internal knowledge base to comprehend customers, competitors, and the market environment.[33,34] Reconfiguring capability refers to the capacity to integrate and apply knowledge from internal or external sources, enabling the effective expansion and updating of one's own capabilities in response to market and technological changes.[35,36] Numerous studies have demonstrated the interrelationship between sensing and reconfiguring capabilities, with the benefits derived from sensing capabilities being realized through reconfiguring activities.[33,37,38]

Self-Efficacy and Dynamic Capabilities

Self-efficacy generates an individual's general ability to explain various intentional behaviors.[39] Employees' self-efficacy empowers them to face challenges and try out new ideas, thereby promoting workflow efficiency[40] According to Parker et al, individuals need to develop a sense of self-efficacy in order to embrace proactive behaviors within organizational contexts.[41] Self-efficacy not only directly affects behavior, but also influences behavior through other contributing factors.[42] For instance, self-efficacy shapes individuals' perception of the structural elements of the environment, including the barriers and opportunities it presents, thereby influencing employees' behavioral performance. Individuals with low self-efficacy tend to perceive their efforts as futile when faced with environmental barriers, whereas those with high self-efficacy will actively seek ways to surmount them. Consiglio et al argued that self-efficacy positively influences individuals' perception of the environment.[13] Employees with a high level of self-efficacy actively seek favorable opportunities provided by the social environment through self-regulated social activities. Accordingly, the following hypothesis is developed.

H1: FLEs' self-efficacy is positively related to their sensing capability.

As employees' self-efficacy increases, they gain the confidence necessary to accomplish their work goals. Additionally, employees with high self-efficacy strive to enhance service delivery, thus making contributions to the organization.[43] Enhancing services necessitates the continuous adaptation or customization of resources to meet customer needs,[44] therefore, employees with high self-efficacy are more likely to integrate resources effectively. In a globalized and dynamic business environment, highly self-motivated employees are more likely to proactively seek resources and seize opportunities to engage in specific action processes.[45] Employees who possess confidence in their own abilities exhibit more effective behaviors and demonstrate superior resource integration compared to those lacking such confidence. Accordingly, it is hypothesized as follows.

H2: FLEs' self-efficacy is positively related to their reconfiguring capability.

Dynamic Capabilities of FLEs

Sensing capability captures environmental changes that can be perceived as opportunities or threats, providing input for resource reconfiguration.[46] Innovation that creates new products and services to meet customer needs is the core activity of reconfiguration, requiring new technical knowledge and new knowledge about customers, competitors, and the market environment. Sensing capability plays a vital role in facilitating this process.[47] Reconfiguring capability relies on the foundation of sensing capability, which offers valuable insights into the environment, enabling precise identification of user needs, comprehension of competitors, and informed decision-making regarding timing and methods for adjustments.[38] Simultaneously, employees' ongoing awareness of environmental changes allows them to grasp the diverse characteristics of the environment, including the opportunities and threats it presents. This awareness motivates them to effectively integrate and modify existing resources to bolster competitive advantage.[33] Accordingly, the following hypothesis is prescribed.

H3: FLEs' sensing capability is positively related to their reconfiguring capability.

Dynamic Capabilities and Service Performance

In turbulent market environments, FLEs, who engage in extensive interactions with customers, are more prone to acquiring distinctive information and comprehending changes in environmental characteristics (eg, changes in customer

preferences, technological advances, etc.), along with the associated opportunities and threats.[33] Employees with strong sensing capabilities can enhance their comprehension of market knowledge and environmental characteristics, resulting in a more holistic understanding of customer needs, improved service performance, and ultimately, an elevated level of customer experience.[48,49] Accordingly, the following hypotheses are formulated.

H4: FLEs' sensing capability is positively related to customer service performance.

Reconfiguring capabilities enable individuals or groups to collect previously implemented solutions for specific problems and utilize this knowledge to create new products, processes, systems, and services through learning and application, suitable for implementation in new environments.[38] Reconfiguring capabilities establishes and safeguards intangible assets, such as knowledge, that underpin superior performance.[35,38] By engaging in resource reconfiguration, employees can generate enhanced solutions, adapt service behaviors, and elevate service delivery. Delivering high-quality services assists in establishing and sustaining long-term customer relationships.[50,51] Accordingly, the following hypothesis is developed.

H5: FLEs' reconfiguring capability is positively related to customer service performance.

With these hypotheses, our conceptual model is shown in Figure 1.

Materials and Methods

Sample and Procedure

This study selected two medical aesthetic hospitals in Zhejiang Province as research samples. The main reasons are as follows: first, the medical aesthetics market, as a branch of the healthcare market, has experienced remarkable growth in recent years, accompanied by escalating competition within a highly competitive market environment. Second, the hospitals are located in Zhejiang Province, the region with the highest per capita disposable income in mainland China, which provide sufficient economic support for the expansion of non-basic medical aesthetics services, but also face more competitive market environment. Finally, the two medical aesthetic hospitals affiliated with a private chain group are representative in terms of internal advantages, developmental opportunities, and capital operations.

We investigated the perspectives of both healthcare providers and customers regarding healthcare provider services. The reasons are as follows: first, service delivery is a dynamic process involving interactive engagement between providers and customers, warranting the inclusion of both perspectives in the discussion.[52] Second, prior research underscores the need to expand the focus of performance measurement in service contexts beyond the producer's viewpoint to encompass an external perspective on service performance.[24,25,53] Therefore, this study asked healthcare providers to complete questionnaires measuring self-efficacy and dynamic capabilities and customers to complete a questionnaire on their perceptions of provider service performance.

The study primarily employed field research to collect questionnaires from doctors at the medical aesthetic hospital and patients who had visited or consulted at the hospital. Data collection took place between December 10, 2020, and

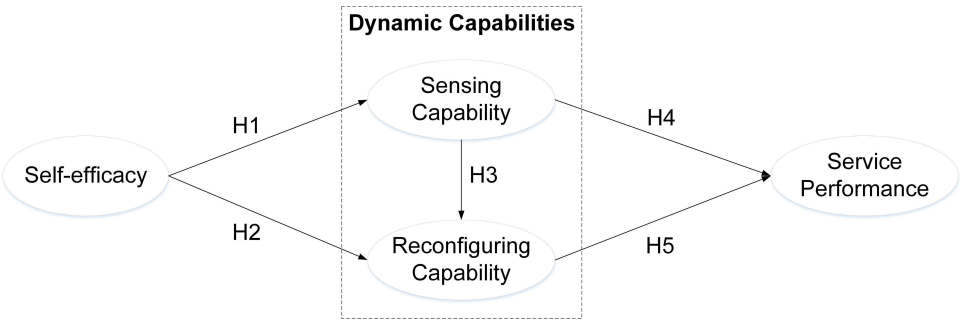

Figure 1 Research Model.

December 26, 2020. Prize incentives were employed as a measure to mitigate response bias and the incentivize participation of doctors and customers from two medical aesthetic hospitals in the questionnaire survey. Concurrently with the administration of the doctor's questionnaire, a customer questionnaire was randomly distributed among the doctor's clients visiting the clinic to assess the doctor's service performance from the customers' perspective. The ratio of doctor questionnaires to customer questionnaires was initially set at 1:5. A total of 133 doctors' questionnaires were completed, accounting for 90.1% of the entire staff, of which 123 were deemed valid. 791 customer questionnaires were collected, out of which 762 were considered valid. The ratio of doctor questionnaires to customer questionnaires was 1:6.2, with one doctor questionnaire corresponding to a maximum of 20 customer questionnaires and a minimum of 3 customer questionnaires. Table 1 and Table 2 present the demographic and sociological characteristics of the respondents.

Measures

In order to ensure validity, our measurement items were derived from the existing literature and adapted to the medical aesthetic scenario. Our questionnaire's items were all developed in English initially, then we translated them into Chinese using the back-translation procedure. The items were evaluated on 7-point Likert scales, with 1 indicating complete disagreement and 7 indicating complete agreement.

Self-Efficacy Scale (SE)

FLEs' self-efficacy was measured using a five-item scale adapted from Riggs et al.[54] Doctors were asked to rate each item. Sample item included 'My idea of medical service is very original' (α=0.895).

Table 1 Characteristics of the Doctors Sample

Variable		Counts (n)	Frequency (%)
Gender	Male	24	19.5
	Female	99	80.5
Age	≤25	21	17.1
	26–30	40	32.5
	31–39	30	24.4
	≥40	32	26.0
Highest education	Specialist and below	67	54.5
	Bachelor degree	48	39.0
	Master degree and above	8	6.5
Years of work	≤5	50	40.7
	6–10	33	26.8
	>10	40	32.5

Table 2 Characteristics of the Consumers Sample

Variable		Counts (n)	Frequency (%)
Gender	Male	717	94.1
	Female	45	5.9
Age	≤20	25	3.3
	21–30	404	53.0
	31–40	237	31.1
	>40	96	12.6
The first time service was received	In 2018 and before	286	37.5
	In 2019	143	18.8
	In 2020 and beyond	333	43.7
Consumption times in the last year	Twice and less	436	57.2
	More frequently than twice	326	42.8

Dynamic Capabilities Scale (DC)

We adopted eleven-item scale from Wilden and Gudergan to measure dynamic capabilities.[33] Doctors were asked to rate each item. This scale has two subscales that measure sensing capability and reconfiguring capability separately. Sample item for sensing capability was 'I am always on the lookout for the latest information on medical aesthetic products/technologies/services'. One example for reconfiguring capability was 'I can integrate the skills I have learned with other technologies'. Cronbach's alpha was 0.853 for sensing capability, and 0.899 for reconfiguring capability.

Service Performance Scale (SP)

Service performance was measured by seven items adopted from Liao and Chuang.[23] Customers were asked to rate each item. A sample item was 'My doctor is friendly and helpful' (α=0.919).

Control Variables

Because previous research has revealed that age, gender, and years of work may be related to service performance,[23,55] we controlled for these factors in further analyses. Since the data was collected from two hospitals, we controlled for dummy variables to mitigate the possibility of a correlated effect between the hospitals.

Data Analysis

This study employed partial least squares structural equation modeling (PLS-SEM) as the primary statistical technique. PLS-SEM, characterized by its exploratory nature and enhanced predictability and flexibility, optimizes the explained variance of latent variables to elucidate the model.[56] PLS-SEM exhibits low sample size requirements, typically 10 times the number of paths directed at the latent variable, and is suitable for non-normal distribution data. Given the small sample size and the preliminary stage of theoretical development of the model, PLS-SEM was selected to validate the proposed research model. All statistical analyses in this study were conducted using SPSS 22.0 and Smart PLS 3.0 software.

Results

Nonresponse Bias and Common Method Bias Check

The sample of medical aesthetic doctors in this study accounted for 90.1% of the entire employee population, suggesting the absence of nonresponse bias among the doctors. Customer sample data were collected from two medical aesthetic hospitals situated in distinct regions using convenience sampling. To examine nonresponse bias, this study employed chi-square tests to test the survey samples from the two hospitals against the total population (ie, all customers who visited the hospitals in 2020) separately. The results of the analyses indicated no significant difference between the samples and the overall population ($p > 0.05$). Additionally, before conducting empirical analyses, this study examined the demographic and sociological characteristics of the two samples from the aesthetic hospitals. The results indicated no significant difference between the two samples regarding demographic characteristics, including gender, age, and education ($p > 0.05$), suggesting the absence of significant nonresponse bias.

This study employed Harman's single-factor test to detect potential common method bias.[57] The results revealed that the first factor explained 46.609% of the total variance in the explanatory variables, which falls below the 50% threshold.[58] Thus, there was no significant common method bias in this study.

Reliability and Validity Testing

To the best of our knowledge, this study represents the first examination of the scale in the context of a medical aesthetic hospital. Therefore, the reliability test was performed independently using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Initially, exploratory factor analysis was conducted using SPSS 22.0 in this study. Considering the KMO value of 0.920 and the statistically significant result of Bartlett's spherical test, factor analysis was conducted in this study. The questionnaire consisted of a total of 23 items; however, due to factor loadings below 0.5 or factor cross-loadings,[58] 2 items (SS5 and RC6) were excluded, resulting in a final set of 21 items. Employee self-efficacy, sensing capability, reconfiguring capability, and service performance were identified as factors with eigenvalues greater than one, collectively explaining 67.995% of the variance. As a result, the indicators in this study had good structural validity.

As the constructs in this study were reflective, the measurement models were evaluated by assessing the reliability, convergent validity, and discriminant validity. Reliability testing assesses the consistency, stability, and reliability of the data to measure its reliability. The SmartPLS validation factor analysis, presented in Table 3, revealed that all variables exhibited Cronbach's α values exceeding 0.8, and the composite reliability (CR) values exceeded 0.8, satisfying the reliability criteria. These findings indicate a high level of consistency and reliability within the measurement model.[59]

Convergent validity assesses the theoretical relevance of the question items.[60] All factor loadings were higher than the critical value of 0.7,[57] except for RC4, which is also acceptable at 0.677. Additionally, the average variance extracted (AVE) for all variables was higher than 0.5.[60] Hence, the model passed the convergent validity test. Table 3 shows all the details.

Discriminant validity examines the extent to which a measure is unrelated to other constructs that should differ. Table 4 presents the results indicating that the square roots of the AVEs are all greater than the bifactor correlation coefficients, aligning with the Fornell and Larcker criteria.[60] As shown in Table 5, Heterotrait Monotrait (HTMT) values are all greater than the lowest threshold value of 0.85.[61] These confirm discriminant validity.

Table 3 Properties of Measurement Model

Latent Variable	Claims Label	Factor Loading	AVE	CR	Cronbach's α
SE	SE1	0.794	0.631	0.895	0.895
	SE2	0.771			
	SE3	0.867			
	SE4	0.799			
	SE5	0.734			
SC	SC1	0.765	0.591	0.853	0.853
	SC2	0.777			
	SC3	0.736			
	SC4	0.796			
RC	RC1	0.936	0.642	0.899	0.899
	RC2	0.835			
	RC3	0.737			
	RC4	0.677			
	RC5	0.798			
SP	SP1	0.716	0.619	0.919	0.919
	SP2	0.768			
	SP3	0.745			
	SP4	0.772			
	SP5	0.826			
	SP6	0.869			
	SP7	0.799			

Table 4 Discriminant Validity Test (Fornell & Larcker Criteria)

	SE	SC	RC	SP
SE	**0.794**			
SC	0.505	**0.769**		
RC	0.605	0.670	**0.801**	
SP	0.670	0.607	0.732	**0.787**

Note: Bold values on the diagonal represent the square root of AVE.

Table 5 Discriminant Validity Test (HTMT)

	SE	SC	RC	SP
SE				
SC	0.503			
RC	0.605	0.667		
SP	0.671	0.604	0.725	

Path Analysis

We conducted a bootstrapping procedure to test our hypotheses (5000 samples). Figure 2 presents the results of the structural model. The predictive relevance of the model was examined by assessing the effect size and explained the variance of the endogenous constructs. This model explains 25.5% of the variance in sensing capability, 54.4% of the variance in reconfiguring capability, and 58.7% of the variance in service performance. Two endogenous constructs had R^2 values above 0.33, indicating moderate explanatory strength.[62] In addition, the effect sizes (f^2) for the supported hypotheses range from 0.039 to 0.482. These effect sizes correspond to small, medium, and large effects, respectively, according to the criteria of 0.02, 0.15, and 0.35.[56] Hence, the model's predictive relevance was supported.

The structural model estimation results supported a positive effect for the path from self-efficacy to sensing capability ($\beta = 0.442$; $p < 0.001$; $f^2 = 0.343$) and reconfiguring capability ($\beta = 0.355$; $p < 0.001$; $f^2 = 0.210$), in support of H1 and H2, respectively. The path from sensing capability to reconfiguring capability ($\beta = 0.433$; $p < 0.001$; $f^2 = 0.390$) was significant in support of H3. Surprisingly, the path between sensing capability → service performance was not significant and failed to support H4 ($\beta = 0.197$; $p > 0.05$; $f^2 = 0.039$). However, the missing element appeared to be the effect of reconfiguring capability. Support was found for H5's reconfiguring capability → service performance path ($\beta = 0.554$; $p < 0.001$; $f^2 = 0.482$). Table 6 summarizes the results of the hypothesis testing.

Post Hoc Analyses of the Mediating Effects

This study examined the mediating effect of sensing and reconfiguring capabilities through post hoc analyses.[56] The results revealed that the mediating path from SE to SP via SC comes out to be 0.087, not significant. There is no evidence of a mediating effect of sensing capability in the relationship between SE and SP. In addition to this, all indirect effects were statistically significant ($p < 0.01$) and the confidence interval of the indirect effect excluded 0, confirming the

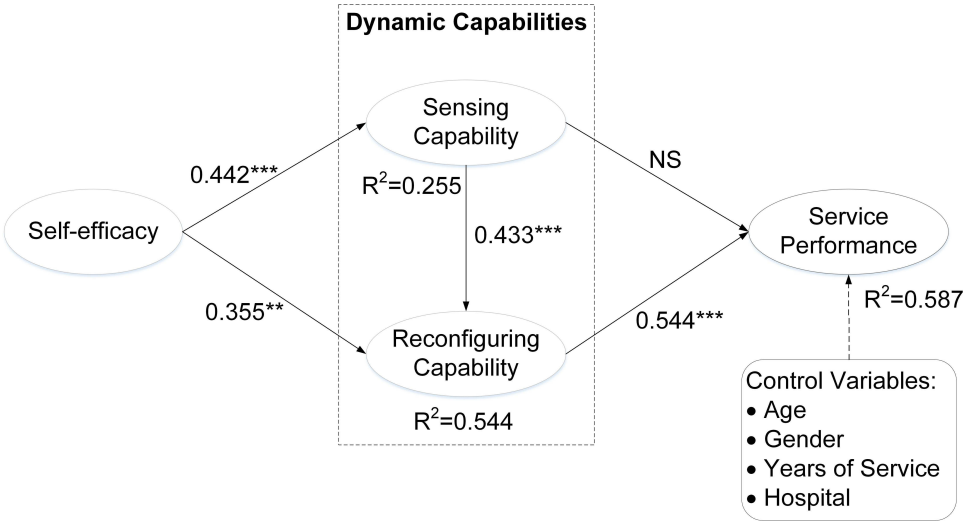

Figure 2 Structural model results.
Notes: **p<0.01;***p<0.001.
Abbreviation: NS, Not significant.

Table 6 Structural Relationship

Hypothesis	Path Coefficient	t-Statistics	Std Error	*p*-value	f^2	Results
H1:SE→SC	0.442	5.233	0.085	<0.001	0.343	Supported
H2:SE→RC	0.355	3.893	0.091	<0.001	0.210	Supported
H3:SC→RC	0.433	4.878	0.089	<0.001	0.390	Supported
H4:SC→SP	0.197	1.905	0.104	0.054	0.039	Not Supported
H5:RC→SP	0.554	6.114	0.091	<0.001	0.482	Supported

Table 7 Results of Mediation Testing

Path	Direct Effect	Indirect Effect	Bias-Corrected CI at 95%		Result of Mediation
			Lower Bounds	Upper Bounds	
SE→SC→SP	0.325***	0.087 (ns)	0.003	0.210	No mediation
SE→RC→SP	0. 325***	0.197**	0.079	0.356	Partial mediation
SC→RC→SP	0.197 (ns)	0.240**	0.146	0.346	Full mediation
SE→SC→RC→SP	0.390***	0.106**	0.052	0.180	Partial mediation

Notes: **=p <0.01; ***=p <.001; ns-not significant.

mediating effect. The assessment of direct effects indicated that reconfiguring capability partially mediated the relationship between SE and SP; and fully mediated the relationship between SC and SP. Additionally, sensing capability and reconfiguring capability partially mediated the relationship between SC and SP. In conclusion, the results suggest that dynamic capabilities play a significant mediating role in the influence of self-efficacy on service performance. Table 7 presents the detailed results.

Discussion

The results of the empirical research, carried out with doctors of medical aesthetic hospitals, showed that dynamic capabilities were positively related to service performance, as shown by the proposed model. The other factor, self-efficacy, had its effects by dynamic capabilities. This study makes several theoretical contributions to the field in the following ways.

This study assessed the relationship between dynamic capabilities and service performance. The findings indicated that reconfiguring capability can enhance service performance, whereas sensing capability does not directly improve service performance but indirectly influences it through reconfiguring capability. A possible explanation for these findings is that the core dimensions of dynamic capabilities — structure and frequency — are loosely coupled and can change independently.[63] Hence, the sense of environmental change and the active acquisition of knowledge from external sources may not directly translate into a competitive advantage. For example, as competitive conditions change, opportunities may have a lower value than initially assessed. Given that various types of services necessitate adaptive and creative approaches to support clients,[37] this finding helps to gain a more detailed understanding of the impact of different dimensions of dynamic capabilities. Prior research has explored the positive relationship between employees' dynamic capabilities and job performance.[64,65] Our study builds upon this by further confirming that dynamic capabilities constitute a multidimensional concept, enhancing our understanding of this domain. Developing dynamic capabilities into a multilevel structure has the potential to yield broader and more impactful implications in the field of service management. Moreover, it may facilitate additional connections with the macro- or organizational-levels of dynamic capability frameworks found in earlier literature.[66]

The findings of this study also highlighted the significant role of self-efficacy as a key antecedent of dynamic capabilities. Furthermore, self-efficacy positively influences both sensing and reconfiguring capabilities. Consistent with previous research,[67] this study confirmed that high self-efficacy fosters proactive and conscious engagement in activities that demand exploratory effort and an effective response to the environment. In addition to predicting task-related effort and performance, employee self-efficacy also facilitates the promotion of organizational citizenship behavior.[68] This study demonstrated how FLEs' self-efficacy enables them to go beyond their prescribed roles, enhancing their dynamic

capabilities. In contrast to prior research that has primarily focused on the role of manager cognition in dynamic capabilities,[69,70] our study provides a different perspective, showing the influence of FLEs' internal perceptions on dynamic capabilities.

Another important finding was that self-efficacy affects service performance not only directly but also through dynamic capabilities. In competitive work environments, employees with high self-efficacy are more likely to engage in learning new things, volunteering for new projects, and taking on additional tasks.[71] These behaviors contribute to the development of their dynamic capabilities and positively impact service performance. This hypothesis is supported by previous research showing that self-efficacy positively affects performance when it enhances the allocation of cognitive resources to tasks.[72,73] Previous research has emphasized the importance of cognitive resources such as optimism, creativity, and job crafting in strengthening the positive relationship between self-efficacy and work outcomes.[14,15,43] Our research findings indicate that dynamic capabilities, functioning as higher-order abilities, can mobilize and leverage cognitive resources. This underscores the merit of exploring the role of dynamic capabilities in the relationship between self-efficacy and service performance, a pathway not previously validated by researchers. This study investigates the role of dynamic capabilities in the healthcare sector, providing novel insights into a domain that has received limited attention from researchers in the past.

Managerial Implications

Employee service performance plays a critical role for both managers and organizations.[55] This study provides valuable insights into management practices in healthcare organizations by suggesting strategies for improving employee service performance. First, self-efficacy positively influences service performance through dynamic capabilities. Understanding the antecedents of service performance can help to manage the self-efficacy of FLEs and cultivate their dynamic capabilities to enhance service performance. Efficacy beliefs can be developed through targeted strategies, therefore, training for employees should emphasize key sources of self-efficacy such as mastery experience, social modeling, social persuasion, and efficacy beliefs.[42] Targeted interventions should be implemented to develop a highly motivated workforce to achieve a competitive advantage. Second, during the recruitment and selection process, it is essential to prioritize the assessment of employees' self-efficacy and dynamic capabilities as they profoundly influence the sustainability of individuals and the organization as a whole.[7,65,74]

Third, the development of adaptive capabilities is crucial for enhancing service performance, especially in the face of a rapidly changing environment.[75] Sensing capability enables employees to scan and gather knowledge and technology. Reconfiguring capability enables them to adjust their knowledge, resources, and capabilities. These behaviors and capabilities are increasingly crucial for the future success of organizations.[7] Therefore, effectively managing the dynamic capabilities of FLEs is a valuable approach to maintaining sustainable competitive advantages. Managers who invest in improving their employees' dynamic capabilities will benefit from the relationship between self-efficacy and service performance. Organizations should leverage the autonomy and motivation of FLEs, encourage them to come up with new ideas, adopt and implement innovative methods or products, and foster an environment conducive to developing dynamic capabilities.

Limitations and Further Research

This study is not free from all the limitations. First, the participants in this study were recruited from two medical aesthetic hospitals in China. Future research should aim to enhance the external validity of the current findings by recruiting diverse samples from the medical field, including different regions and countries. Second, despite utilization of multi-source data from customers and employees in this study, the cross-sectional design hampers the efficiency of summarizing structures and approximating causal relationships among them. Therefore, future research should consider using longitudinal data to establish accurate causal relationships.[76,77] Additionally, a longitudinal study design can help alleviate potential biases; for example, self-efficacy and dynamic capabilities may change over time,[78] and longitudinal studies can help identify variable patterns of cognitive resources and personal capabilities over time. Finally, this study explored the relationship between self-efficacy, dynamic capabilities, and service performance. However, the proposed theoretical model only explained 58.7% of the variance. Future research should propose a comprehensive theoretical framework that integrates cognitive, motivational, and emotional processes to thoroughly explore the underlying

mechanisms through which self-efficacy influences service performance.[42] Moreover, given the high level of environmental turbulence, dynamic capabilities will become increasingly significant.[33] Future research could provide further insights by exploring the potential moderating role of contextual factors, such as environmental factors.

Ethical Consideration

The studies involving human participants were reviewed and approved by Huazhong University of Science and Technology and conducted in line with the Helsinki Declaration principle. The patients/participants provided their written informed consent to participate in this study.

Funding

This work was supported by National Natural Science Foundation of China [grant number 71974065].

Disclosure

The authors report no conflicts of interest in this work.

References

1. Dagger TS, Danaher PJ, Sweeney JC, McColl-Kennedy JR. Selective Halo Effects Arising From Improving the Interpersonal Skills of Frontline Employees. *J Serv Res*. 2013;16(4):488–502. doi:10.1177/1094670513481406
2. Itani OS, Jaramillo F, Paesbrugghe B. Between a rock and a hard place: seizing the opportunity of demanding customers by means of frontline service behaviors. *J Retail Consum Serv*. 2020;53:101978. doi:10.1016/j.jretconser.2019.101978
3. Shih CT, Chen SL, Chao M. How autonomy-supportive leaders influence employee service performance: a multilevel study. *Serv Indust J*. 2022;42 (7–8):630–651. doi:10.1080/02642069.2019.1691168
4. McColl-Kennedy JR, Hogan SJ, Witell L, Snyder H. Cocreative customer practices: effects of health care customer value cocreation practices on well-being. *J Bus Res*. 2017;70:55–66. doi:10.1016/j.jbusres.2016.07.006
5. Bibi M. Impact of Talent Management Practices on Employee Performance: an Empirical Study Among Healthcare Employees. *SEISENSE J Management*. 2019;2(1):22–32. doi:10.33215/sjom.v2i1.83
6. Statista. total training expenditures in the United States from 2012 to 2022. Available from: https://www.statista.com/statistics/788521/training-expenditures-united-states/. Accessed May 23, 2023.
7. Chatterjee S, Chaudhuri R, González VI, Kumar A, Singh SK. Resource integration and dynamic capability of frontline employee during COVID-19 pandemic: from value creation and engineering management perspectives. *Technol Forecast Soc Change*. 2022;176:121446. doi:10.1016/j.techfore.2021.121446
8. Edwards J, Miles MP, D'Alessandro S, Frost M. Linking B2B sales performance to entrepreneurial self-efficacy, entrepreneurial selling actions. *J Bus Res*. 2022;142:585–593. doi:10.1016/j.jbusres.2021.12.074
9. Ozyilmaz A, Erdogan B, Karaeminogullari A. Trust in organization as a moderator of the relationship between self-efficacy and workplace outcomes: a social cognitive theory-based examination. *J Occup Organ Psychol*. 2018;91(1):181–204. doi:10.1111/joop.12189
10. Beattie S, Woodman T, Fakehy M, Dempsey C. The role of performance feedback on the self-efficacy–performance relationship. *Sport Exerc Perform Psychol*. 2016;5(1):1–13.
11. Sitzmann T, Yeo G. A Meta-Analytic Investigation of the Within-Person Self-Efficacy Domain: is Self-Efficacy a Product of Past Performance or a Driver of Future Performance? *Pers Psychol*. 2013;66(3):531–568. doi:10.1111/peps.12035
12. Campbell JP. Modeling the performance prediction problem in industrial and organizational psychology. In: *Handbook of Industrial and Organizational Psychology*. 2nd. Palo Alto, CA, US: Consulting Psychologists Press; 1990. Vol. 1. 687–732.
13. Consiglio C, Borgogni L, Di TC, Schaufeli WB. What makes employees engaged with their work? The role of self-efficacy and employee's perceptions of social context over time. *Career Dev Int*. 2016;21(2):125–143. doi:10.1108/CDI-03-2015-0045
14. Hur WM, Moon TW, Lee JH. The effect of self-efficacy on job performance through creativity: the moderating roles of customer incivility and service scripts. *Asia Pacific J Marketing Logistics*. 2020;33(3):888–905. doi:10.1108/APJML-03-2019-0138
15. Miraglia M, Cenciotti R, Alessandri G, Borgogni L. Translating self-efficacy in job performance over time: the role of job crafting. *Hum Perform*. 2017;30(5):254–271. doi:10.1080/08959285.2017.1373115
16. Qiu S, Dooley LM, Xie L. How servant leadership and self-efficacy interact to affect service quality in the hospitality industry: a polynomial regression with response surface analysis. *Tour Manag*. 2020;78:104051. doi:10.1016/j.tourman.2019.104051
17. Deloitte Report. China: medical Aesthetic Industry Outlook 2022. Deloitte China. Available from: https://www2.deloitte.com/cn/en/pages/strategy-operations/articles/dtt-china-medical-aesthetic-industry-outlook-2022.html. Accessed July 13, 2023.
18. Su TH. Medical service experience model for medical cosmetology. *Manag Rev*. 2016;35:51–70.
19. Fiala TG. What Do Patients Want? Technical Quality Versus Functional Quality: a Literature Review for Plastic Surgeons. *Aesthet Surg J*. 2012;32 (6):751–759. doi:10.1177/1090820X12452555
20. Felin T, Foss NJ, Ployhart RE. The Microfoundations Movement in Strategy and Organization Theory. *Acad Management Ann*. 2015;9(1):575–632. doi:10.5465/19416520.2015.1007651
21. Hizarci Payne AK, Katrinli A. Microfoundations of firm capabilities in the context of international business: exploring the role of export department employees. *Management Res Rev*. 2020;44(1):59–93. doi:10.1108/MRR-12-2019-0548
22. Kevill A, Trehan K, Harrington S, Kars Unluoglu S. Dynamic managerial capabilities in micro-enterprises: stability, vulnerability and the role of managerial time allocation. *Int Small Bus J*. 2020;39(6):507–531. doi:10.1177/0266242620970473

23. Liao H, Chuang A. A Multilevel Investigation of Factors Influencing Employee Service Performance and Customer Outcomes. *Acad Manage J*. 2004;47(1):41–58. doi:10.2307/20159559
24. Brignall S. A contingent rationale for cost system design in services. *Management Accounting Res*. 1997;8(3):325–346. doi:10.1006/mare.1996.0049
25. Johnston R. Service operations management: from the roots up. *Int J Oper Prod Manage*. 2005;25(12):1298–1308. doi:10.1108/01443570510633666
26. Kim T, Boo S. Dynamic Capabilities and Performance of Meeting Planners. *J Travel Tourism Marketing*. 2010;27:736–747. doi:10.1080/10548408.2010.519678
27. Kaur V. *Knowledge-Based Dynamic Capabilities*. Springer Cham: Springer Nature Switzerland: Springer International Publishing; 2019.
28. Mabey C, Kulich C, Lorenzi-Cioldi F. Knowledge leadership in global scientific research. *Int J Human Resource Management*. 2012;23(12):2450–2467. doi:10.1080/09585192.2012.668386
29. Vogus T, Rerup C. Sweating the "small stuff": high-reliability organizing as a foundation for sustained superior performance. *Strateg Organ*. 2017;16(2):227–238. doi:10.1177/1476127017739535
30. Kaur V. Knowledge-based dynamic capabilities: a scientometric analysis of marriage between knowledge management and dynamic capabilities. *J Knowledge Management*. 2022;27(4):919–952. doi:10.1108/JKM-02-2022-0112
31. Rothaermel FT, Hess AM. Building Dynamic Capabilities: innovation Driven by Individual-, Firm-, and Network-Level Effects. *Org Sci*. 2007;18(6):898–921. doi:10.1287/orsc.1070.0291
32. Faccin K, Balestrin A, Volkmer MB, Bitencourt CC. Knowledge-based dynamic capabilities: a joint R&D project in the French semiconductor industry. *J Knowledge Management*. 2019;23(3):439–465. doi:10.1108/JKM-04-2018-0233
33. Wilden R, Gudergan SP. The impact of dynamic capabilities on operational marketing and technological capabilities: investigating the role of environmental turbulence. *J Acad Marking Sci*. 2015;43(2):181–199. doi:10.1007/s11747-014-0380-y
34. Li D-Y, Liu J. Dynamic capabilities, environmental dynamism, and competitive advantage: evidence from China. *J Bus Res*. 2014;67(1):2793–2799. doi:10.1016/j.jbusres.2012.08.007
35. Gonzalez RVD, Melo TM. Analyzing dynamic capability in teamwork. *J Knowledge Management*. 2019;23(6):1196–1217. doi:10.1108/JKM-08-2018-0478
36. Teece DJ. Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strateg Manag J*. 2007;28(13):1319–1350. doi:10.1002/smj.640
37. Fainshmidt S, Frazier ML. What Facilitates Dynamic Capabilities? The Role of Organizational Climate for Trust. *Long Range Plann*. 2017;50(5):550–566. doi:10.1016/j.lrp.2016.05.005
38. Markovich A, Efrat K, Raban DR. Dynamic capabilities: interrelations and distinct effects on performance in low and high competitive intensity environments. *Baltic Journal of Management*. 2021;16(4):539–563. doi:10.1108/BJM-10-2020-0367
39. Ckm T, Guaita Martínez JM, Orero-Blat M, Chau KP. Predicting motivational outcomes in social entrepreneurship: roles of entrepreneurial self-efficacy and situational fit. *J Bus Res*. 2020;121:209–222. doi:10.1016/j.jbusres.2020.08.022
40. Earley PC, Lituchy TR. Delineating goal and efficacy effects: a test of three models. *J Appl Psychol*. 1991;76:81–98. doi:10.1037/0021-9010.76.1.81
41. Parker SK, Bindl UK, Strauss K. Making Things Happen: a Model of Proactive Motivation. *J Manage*. 2010;36(4):827–856. doi:10.1177/0149206310363732
42. Bandura A. On the Functional Properties of Perceived Self-Efficacy Revisited. *J Manage*. 2012;38(1):9–44. doi:10.1177/0149206311410606
43. Michael LAH, Hou ST, Fan HL. Creative Self-Efficacy and Innovative Behavior in a Service Setting: optimism as a Moderator. *J Creat Behav*. 2011;45(4):258–272. doi:10.1002/j.2162-6057.2011.tb01430.x
44. Plé L. Studying customers' resource integration by service employees in interactional value co-creation. *J Serv Marketing*. 2016;30(2):152–164. doi:10.1108/JSM-02-2015-0065
45. Chin W, Mohd Rasdi R. Protean Career Development: exploring the Individuals, Organizational and Job-related Factors. *Asian Soc Sci*. 2014;10(21):203–215. doi:10.5539/ass.v10n21p203
46. Eisenhardt K, Martin J. Dynamic capabilities: what are they? *Strateg Manag J*. 2000;21(10–11):1105–1121. doi:10.1002/1097-0266(200010/11)21:10/11<1105::AID-SMJ133>3.0.CO;2-E
47. Lin C, Kunnathur A. Strategic orientations, developmental culture, and big data capability. *J Bus Res*. 2019;105:49–60. doi:10.1016/j.jbusres.2019.07.016
48. Sandström S, Edvardsson B, Kristensson P, Magnusson P. Value in use through service experience. *Int J*. 2008;18(2):112–126. doi:10.1108/09604520810859184
49. Agnihotri R, Gabler CB, Itani OS, Jaramillo F, Krush MT. Salesperson ambidexterity and customer satisfaction: examining the role of customer demandingness, adaptive selling, and role conflict. *J Personal Selling Sales Manage*. 2017;37(1):27–41. doi:10.1080/08853134.2016.1272053
50. Muhammad Awan H, Shahzad Bukhari K, Iqbal A. Service quality and customer satisfaction in the banking sector: a comparative study of conventional and Islamic banks in Pakistan. *J Islamic Marketing*. 2011;2(3):203–224. doi:10.1108/17590831111164750
51. Oliver RL, Rust RT, Varki S. Customer delight: foundations, findings, and managerial insight. *J Retailing*. 1997;73(3):311–336. doi:10.1016/S0022-4359(97)90021-X
52. Solomon M, Surprenant C, Czepiel J, Gutman E. A Role Theory Perspective on Dyadic Interactions: the Service Encounter. *J Mark*. 1985;49(1):99–111. doi:10.1177/002224298504900110
53. Chj W, Liang RD, Tung W, Chang CS. Structural relationships among organisation service orientation, employee service performance, and consumer identification. *Serv Indust J*. 2008;28(9):1247–1263. doi:10.1080/02642060802230189
54. Riggs ML, Warka J, Babasa B, Betancourt R, Hooker S. Development and Validation of Self-Efficacy and Outcome Expectancy Scales for Job-Related Applications. *Educ Psychol Meas*. 1994;54(3):793–802. doi:10.1177/0013164494054003026
55. Jian Z, Kwan HK, Qiu Q, Liu ZQ, Kit YFH. Abusive supervision and frontline employees' service performance. *Serv Indust J*. 2012;32(5):683–698. doi:10.1080/02642069.2011.614338
56. Hair J, Hult GTM, Ringle C, Sarstedt M. *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Sage publications; 2021.
57. Podsakoff PM, MacKenzie SB, Lee JY, Podsakoff NP. Common method biases in behavioral research: a critical review of the literature and recommended remedies. *J Appl Psychol*. 2003;88(5):879–903. doi:10.1037/0021-9010.88.5.879

58. Hair JF. Multivariate Data Analysis. 2009.
59. Gefen D, Straub D, Claude BM. Structural Equation Modeling And Regression: guidelines For Research Practice. *Commun Assoc Inf Syst*. 2000;4 (7). doi:10.17705/1CAIS.00407
60. Fornell C, Larcker DF. Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *J Mark*. 1981;18(1):39–50. doi:10.1177/002224378101800104
61. Henseler J, Ringle CM, Sarstedt M. A new criterion for assessing discriminant validity in variance-based structural equation modeling. *J Acad Marking Sci*. 2015;43(1):115–135. doi:10.1007/s11747-014-0403-8
62. Chin W, Marcoulides G. The Partial Least Squares Approach to Structural Equation Modeling. *Modern Methods Business Res*. 1998;8:295–336.
63. Wilhelm H, Maurer I, Ebers M. (When) Are Dynamic Capabilities Routine? A Mixed-Methods Configurational Analysis. *J Manage Studies*. 2022;59(6):1531–1562. doi:10.1111/joms.12789
64. Al Wali J, Muthuveloo R, Teoh AP, Al Wali W. Disentangling the relationship between employees' dynamic capabilities, innovative work behavior and job performance in public hospitals. *Int J Innovation Sci*. 2022;15(2):368–384. doi:10.1108/IJIS-01-2022-0012
65. Bieńkowska A, Tworek K. Job Performance Model Based on Employees' Dynamic Capabilities (EDC). *Sustainability*. 2020;12(6):2250. doi:10.3390/su12062250
66. Salvato C, Rerup C. Beyond Collective Entities: multilevel Research on Organizational Routines and Capabilities. *J Management*. 2011;37:468–490 doi:10.1177/0149206310371691
67. Kayid AL. Defining family business efficacy: an exploratory study. *J Bus Res*. 2022;141:713–725. doi:10.1016/j.jbusres.2021.11.081
68. Erum H, Abid G, Contreras F, Islam T. Role of Family Motivation, Workplace Civility and Self-Efficacy in Developing Affective Commitment and Organizational Citizenship Behavior. *Eur J Investigation Health Psychol Educ*. 2020;10(1):358–374. doi:10.3390/ejihpe10010027
69. Augier M, Teece DJ. Dynamic Capabilities and the Role of Managers in Business Strategy and Economic Performance. *Organ Behav Hum Decis Process*. 2009;20(2):410–421.
70. Martin JA. Dynamic Managerial Capabilities and the Multibusiness Team: the Role of Episodic Teams in Executive Leadership Groups. *Org Sci*. 2011;22(1):118–140. doi:10.1287/orsc.1090.0515
71. Ángeles López-Cabarcos M, Vázquez-Rodríguez P, Quiñoá-Piñeiro LM. An approach to employees' job performance through work environmental variables and leadership behaviours. *J Bus Res*. 2022;140:361–369. doi:10.1016/j.jbusres.2021.11.006
72. Beck JW, Schmidt AM. Taken out of context? Cross-level effects of between-person self-efficacy and difficulty on the within-person relationship of self-efficacy with resource allocation and performance. *Organ Behav Hum Decis Process*. 2012;119(2):195–208. doi:10.1016/j.obhdp.2012.06.009
73. Yeo GB, Neal A. Revisiting the functional properties of self-efficacy: a dynamic perspective. *J Manage*. 2013;39:1385–1396.
74. Bhatti MA, Alshagawi M, Syah JA. Mediating the role of work engagement between personal resources (self-efficacy, the big five model) and nurses' job performance. *Int J Hum Rights Healthc*. 2018;11(3):176–191. doi:10.1108/IJHRH-10-2017-0056
75. Deloitte Report. 2021 Deloitte global mobility trends report. Deloitte China. Available from: https://www2.deloitte.com/cn/en/pages/tax/articles/2021-global-mobility-trends-report.html. Accessed July 13, 2023.
76. Ngo LV, Nguyen TNQ, Tran NT, Paramita W. It takes two to tango: the role of customer empathy and resources to improve the efficacy of frontline employee empathy. *J Retailing Consumer Services*. 2020;56:102141. doi:10.1016/j.jretconser.2020.102141
77. Laaksonen O, Peltoniemi M. The Essence of Dynamic Capabilities and their Measurement. *Int J Manage Rev*. 2018;20(2):184–205. doi:10.1111/ijmr.12122
78. Creswell JW, Creswell JD. *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage publications; 2017.