

Work-Family Conflict and Customer Experiential Value Co-Creation in Cruise Service Systems: A Service-Dominant Logic Perspective

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Abstract. This study examines how cruise crew members' work-family conflict affects customer experiential value co-creation in cruise service systems. Drawing on service-dominant logic and conservation of resources theory, the study develops a moderated mediation model in which emotional labor, service engagement, and psychological capital transmit the effect of work-family conflict to customers' experiential value co-creation behavior. Perceived organizational support and service climate are examined as boundary conditions within the cruise service system. A mixed-method design is adopted, including a qualitative pre-study and a three-wave dyadic survey of 386 matched crew-customer dyads. The results indicate that work-family conflict is negatively related to customer experiential value co-creation behavior. Emotional labor, service engagement, and psychological capital partially mediate this relationship. Perceived organizational support weakens the adverse effect of work-family conflict on emotional and psychological resources, while service climate strengthens the positive links between crew resources and customer value co-creation. The study contributes to service science and service-dominant logic by explaining how non-work strain among frontline actors can be transmitted across service encounters and shape customer participation in value creation. Practical implications for cruise service management, crew support systems, and customer experience design are discussed.

Keywords: Service science; Service-dominant logic; Work-family conflict; Cruise crew; Emotional labor; Customer experiential value co-creation

1. Introduction

Cruise tourism depends on intensive service encounters. Unlike many land-based hospitality settings, cruise services are delivered in a closed and mobile environment where customers interact with crew members across accommodation, catering, entertainment, security, reception, and excursion-related services. These repeated encounters make customer experience less a product of isolated service transactions and more a result of continuing interactions between customers, crew members, and the organizational service system. From a service-dominant logic perspective, customers and crew members are both actors who integrate resources in the process of value co-creation (Vargo and Lusch, 2004; Vargo and Lusch, 2008). A cruise customer's experience is shaped not only by the visible service processes but also by the underlying resources that influence how crew members perform their roles, reflecting the ongoing co-creation of value between customers and crew.

Within the field of service science and service-dominant logic, this study examines how cruise crew members' work-family conflict is transmitted through emotional and psychological service resources to shape customers' experiential value co-creation. Work-family conflict refers to the role pressure that arises when work responsibilities and family responsibilities are mutually incompatible (Greenhaus and Beutell, 1985; Netemeyer et al., 1996). For cruise crew members, this conflict may be especially salient. Long contracts, separation from family members, time-zone differences, demanding service schedules, and limited private space can make family responsibilities difficult to manage. These pressures may affect how crew members regulate emotions, invest effort in service encounters, and maintain psychological resources during customer interactions.

Prior research has examined work-family conflict, role stress, emotional exhaustion, service quality, employee engagement, and organizational support in hospitality and tourism settings (Yan et al., 2024; Ngo et al., 2023; Park et al., 2023; Wu et al., 2024). A related stream of work has considered customer value co-creation, customer citizenship behavior, and employee involvement in service co-creation (Yi and Gong, 2013; Wu et al., 2022; Xu et al., 2023; Kim et al., 2025). These studies provide an important foundation, but three gaps remain. First, work-family conflict research has mainly focused on employee-centered outcomes, such as job satisfaction, burnout, turnover intention, and service performance. Less is known about whether and how crew members' non-work strain crosses actor boundaries and affects customers' value co-creation behavior. Second, service-dominant logic emphasizes resource integration, but empirical studies rarely examine the internal emotional and psychological resources through which frontline employees support customer co-creation. Third, the cruise service system has received limited attention as a context in which organizational support and service climate may buffer resource loss and guide customer-facing behavior.

This study addresses these gaps by proposing a moderated mediation model in cruise service systems. Work-family conflict is expected to reduce customer experiential value co-creation behavior through three service resource pathways: emotional labor, service engagement, and psychological capital. Perceived organizational support is proposed to buffer the effects of work-family conflict on emotional labor and psychological capital. Service climate is proposed to strengthen the links between service engagement, psychological capital, and customer experiential value co-creation behavior. In doing so, the study positions crew well-being and customer experience as connected elements of the same service system rather than separate management issues.

The study makes three contributions. First, it extends service-dominant logic by showing how the resource condition of frontline actors may influence customers' participation in experiential value co-creation. Second, it integrates work-family conflict and conservation of resources theory into a service science model of cruise service encounters. Third, it identifies perceived organizational support and service climate as service-system conditions that can reduce resource loss and support value co-creation. These contributions are relevant for cruise firms because customer experience cannot be managed only through service scripts, physical facilities, or digital touchpoints. It also depends on whether crew

members have enough emotional, behavioral, and psychological resources to support customers as co-creators of experience.

2. Literature Review

2.1 Service-Dominant Logic and Cruise Service Systems

Service-dominant logic views service as the application of competences for the benefit of another actor and treats value as co-created through resource integration (Vargo and Lusch, 2004; Vargo and Lusch, 2008). In this view, customers are not passive recipients of service output. They participate in interpreting, using, and extending service resources. Evidence from social-media-based brand communities also indicates that community identification and involvement can strengthen functional support co-creation and commitment, supporting the service-dominant logic view that customers participate actively in value creation (Nasution et al., 2026). The service provider does not deliver value directly but offers resources and conditions that support value formation in use. This view is useful for cruise services because cruise experiences involve a sequence of interactions rather than a single service exchange. Recent research on digital-driven business ecosystems further shows that value co-creation promotes innovation through knowledge integration, resource restructuring, and organizational collaboration, which reinforces the view that co-creation is a dynamic resource-integration process (Han and Ali, 2025).

In cruise service systems, crew members provide knowledge, emotional support, problem solving, safety guidance, and social cues. Customers contribute attention, feedback, cooperation, compliance with service procedures, and participation in onboard activities. Customer experiential value co-creation behavior refers to customers' active participation in behaviors that improve their own experience and the service experience of others. These behaviors may include communicating preferences, cooperating with crew members, giving constructive feedback, helping other passengers, and participating in service activities. Prior research on customer value co-creation has examined customer participation and citizenship behavior as important forms of co-creation (Yi and Gong, 2013). Studies in hospitality and technology-driven services also suggest that employee-customer role understanding and collaborative interaction are important for value co-creation (Kim et al., 2025).

Although service-dominant logic emphasizes actor interaction, the employee side of value co-creation needs more attention. Recent service-system research similarly shows that employee role behavior and boundary-spanning behavior are shaped by leadership and job structures, which supports treating frontline employee behavior as a core mechanism in service value creation (Kim and Bang, 2025). Cruise customers may be willing to co-create experience, but their willingness and behavior are partly shaped by how crew members respond to needs, emotions, and unexpected events. When crew members lack emotional or psychological resources, service interaction may become more formal, less responsive, and less supportive of customer participation. This study therefore treats crew member resources as antecedents of customer experiential value co-creation in the cruise service system.

2.2 Work-Family Conflict and Service Resource Depletion

Work-family conflict occurs when pressures from work and family roles are incompatible (Greenhaus and Beutell, 1985; Netemeyer et al., 1996). It can arise from time demands, strain transfer, or behavioral incompatibility. Cruise crew members may experience all three forms. They work long hours while living at the workplace, have limited opportunity to address family matters in person, and may need to show positive emotions to customers while managing private family concerns.

Conservation of resources theory suggests that individuals seek to obtain, retain, and protect valued resources (Hobfoll, 1989). Work-family conflict threatens these resources because it consumes time, attention, emotional energy, and self-regulatory capacity. In service settings, resource depletion can affect how employees interact with customers. In healthcare services, work-life balance and

organizational culture have been found to influence employee performance mainly through job satisfaction, suggesting that employees' work-life conditions affect service outcomes through psychological mechanisms (Situmorang et al., 2025). Studies in hospitality and tourism have linked employee stressors to fatigue, emotional exhaustion, service quality, and turnover-related outcomes (Park et al., 2023; Wu et al., 2024). Research on organizational support in hospitality further suggests that employee attitudes and service perceptions are strongly shaped by perceived support from the organization (Yan et al., 2024).

In cruise service systems, customer experiential value co-creation depends on crew members' capacity to provide responsive and supportive interaction. When crew members experience high work-family conflict, they may have fewer resources to help customers participate in service activities. This resource depletion logic parallels findings in the sharing economy, where service providers' role overload reduces their value co-creation behavior through diminished engagement and increased emotional exhaustion (Han et al., 2024).

H1: Cruise crew members' work-family conflict is negatively associated with customer experiential value co-creation behavior.

2.3 Emotional Labor as an Affective Transmission Pathway

Emotional labor refers to the regulation of feelings and emotional displays to meet organizational service expectations (Brotheridge and Lee, 2003). Service employees often need to express warmth, patience, and attentiveness even when they feel tired or stressed. In cruise services, emotional labor is a routine part of customer contact because crew members repeatedly handle customer requests, complaints, safety instructions, and experience-related interactions.

Work-family conflict can increase emotional labor because crew members must regulate private strain while maintaining a positive service display. When this regulation is mainly surface acting, the employee shows required emotions without feeling them internally. Such effort may increase emotional dissonance and reduce interaction quality. Prior studies in hospitality have found that emotional labor is connected to fatigue, service quality, and well-being outcomes (Wu et al., 2024; Shulga et al., 2025). Customer mistreatment and service stress can also increase emotional exhaustion and weaken service-related behavior (Boukis et al., 2023; Jia et al., 2023).

In value co-creation, customers are more likely to participate when service employees create a supportive interaction climate. If crew members rely heavily on surface emotional labor, customers may perceive the encounter as less sincere or less responsive. This may reduce customer willingness to communicate, cooperate, and engage in co-creation behavior. The following hypotheses are proposed:

H2a: Work-family conflict is positively associated with emotional labor.

H2b: Emotional labor is negatively associated with customer experiential value co-creation behavior.

H2c: Emotional labor mediates the relationship between work-family conflict and customer experiential value co-creation behavior.

2.4 Service Engagement as a Behavioral Transmission Pathway

Service engagement refers to the energy, involvement, and effort that employees invest in service encounters. It is related to work engagement but is focused on customer-facing service behavior. Engaged crew members are more likely to listen carefully, respond promptly, adapt service to customer needs, and encourage customers to participate in onboard experiences. In this way, service engagement can support customer experiential value co-creation.

Work-family conflict may reduce service engagement by draining attention and energy. Resource loss can make employees more task-focused and less willing to invest extra effort in customer interaction. Studies using job demands-resources theory suggest that job demands and resource

conditions influence burnout, quality of life, and engagement-related outcomes in hospitality and tourism (Dorta-Afonso and Romero-Dominguez, 2025; Zhu et al., 2026). In service co-creation research, employee involvement is also a meaningful antecedent of customer value co-creation (Xu et al., 2023).

When service engagement is high, crew members can translate organizational service resources into customer experience. They may invite customers to participate, explain service options, solve small problems before they become complaints, and create conditions for customers to contribute to their own experience. The following hypotheses are proposed:

H3a: Work-family conflict is negatively associated with crew members' service engagement.

H3b: Crew members' service engagement is positively associated with customer experiential value co-creation behavior.

H3c: Service engagement mediates the relationship between work-family conflict and customer experiential value co-creation behavior.

2.5 Psychological Capital as a Psychological Resource Pathway

Psychological capital consists of positive psychological resources, including hope, efficacy, resilience, and optimism (Luthans et al., 2007). These resources help employees persist when service encounters are demanding. Cruise crew members with higher psychological capital may be more able to recover from pressure, maintain confidence during customer problems, and interpret difficult interactions as manageable.

Work-family conflict can weaken psychological capital because repeated conflict between family and work roles may reduce perceived control and emotional recovery. Research in hospitality suggests that well-being-oriented human resource practices can support psychological capital, especially during crisis situations (Ngo et al., 2023). Psychological resources also help service workers manage emotional demands and continue to provide high-quality service under pressure. A bibliometric review of healthcare service management shows that psychological capital and work engagement have become important mechanisms linking leadership, employee well-being, and service performance (Luo et al., 2025).

Psychological capital may support customer experiential value co-creation by improving the quality of employee-customer interaction. Crew members with stronger psychological resources are more likely to show patience, provide constructive guidance, and help customers participate in service activities. The following hypotheses are proposed:

H4a: Work-family conflict is negatively associated with psychological capital.

H4b: Psychological capital is positively associated with customer experiential value co-creation behavior.

H4c: Psychological capital mediates the relationship between work-family conflict and customer experiential value co-creation behavior.

2.6 Perceived Organizational Support and Service Climate as Boundary Conditions

Perceived organizational support refers to employees' belief that the organization values their contribution and cares about their well-being (Eisenberger et al., 1986). In cruise service systems, support may include supervisor care, family communication support, fair scheduling, counseling access, rest arrangements, and help during personal difficulties. Research on banking services shows that work-life balance initiatives, including flexible work arrangements, welfare programs, family-responsibility support, and leave policies, significantly improve employee performance and service delivery (Dahal et al., 2025). A meta-analysis in hospitality and tourism suggests that perceived organizational support is linked to employee attitudes, stress, behaviors, and service perceptions (Yan et al., 2024). When support is high, work-family conflict may still exist, but its resource loss effects may be weaker.

Perceived organizational support is expected to buffer the link between work-family conflict and emotional labor because supported crew members may have more resources for coping with family-related strain. It is also expected to buffer the negative link between work-family conflict and psychological capital. This leads to the following hypotheses:

H5a: Perceived organizational support weakens the positive relationship between work-family conflict and emotional labor.

H5b: Perceived organizational support weakens the negative relationship between work-family conflict and psychological capital.

H5c: The indirect effect of work-family conflict on customer experiential value co-creation behavior through emotional labor and psychological capital is weaker when perceived organizational support is high.

Service climate refers to shared perceptions that service quality and customer-oriented behavior are expected, supported, and rewarded. A strong service climate can help employees understand how to use their resources in service encounters. It can also provide social cues that encourage customer responsiveness and cooperative service behavior. Studies on service employee well-being and institutional arrangements suggest that service systems can shape employee behavior through shared expectations and supportive conditions (Chapman et al., 2025).

Service climate is expected to strengthen the positive effects of service engagement and psychological capital on customer experiential value co-creation behavior. When service climate is high, engaged and psychologically resourceful crew members have clearer norms and stronger organizational support for customer-oriented interaction. The following hypotheses are proposed:

H6a: Service climate strengthens the positive relationship between service engagement and customer experiential value co-creation behavior.

H6b: Service climate strengthens the positive relationship between psychological capital and customer experiential value co-creation behavior.

H6c: The indirect effect of work-family conflict on customer experiential value co-creation behavior through service engagement and psychological capital varies across levels of service climate.

2.7 Conceptual Framework

The conceptual framework is summarized as follows:

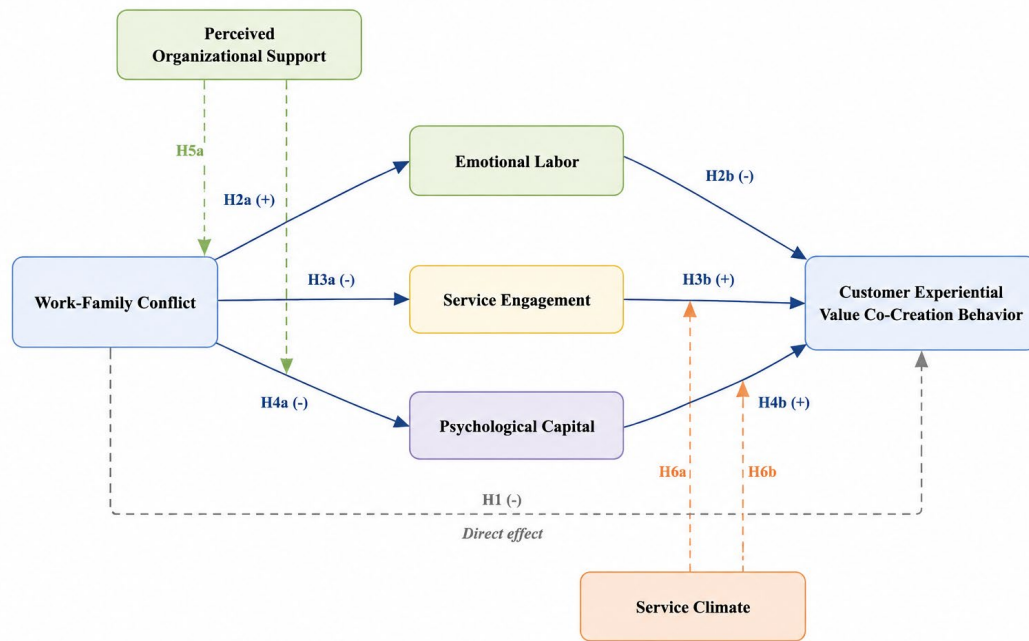


Fig.1: Conceptual Framework

3. Research Methods

3.1 Research Design

This study uses a mixed-method design. A qualitative pre-study is used to adapt the constructs to the cruise service context. A dyadic survey is then used to test the proposed moderated mediation model. The design follows the logic that work-family conflict and crew resources are reported by crew members, while customer experiential value co-creation behavior is evaluated by customers who interacted with those crew members. This source separation helps reduce common method bias and fits the cross-actor nature of the research question.

3.2 Qualitative Pre-Study

Before the main survey, semi-structured interviews should be conducted with cruise crew members, frontline supervisors, and customers. The purpose is to identify typical work-family conflict situations, customer interaction scenarios, and value co-creation behaviors in cruise services. Interview questions should cover family communication during contracts, emotional demands in service encounters, service recovery situations, customer participation in onboard activities, and organizational support practices. The interview results should be used to refine wording in the questionnaire and to ensure that the customer value co-creation items match the cruise context.

3.3 Sample and Data Collection

The main survey should target frontline crew members and customers in cruise service settings. The recommended sampling frame includes crew members from accommodation, food and beverage, guest services, entertainment, retail, and shore-excursion support. Customers should be matched with crew members based on identifiable service encounters, departments, or service episodes.

A three-wave dyadic design is adopted for the main survey. At Time 1, crew members reported work-family conflict, perceived organizational support, and demographic information. At Time 2 (four weeks later), the same crew members reported emotional labor, service engagement, and psychological capital. At Time 3 (four weeks after Time 2), matched customers evaluated customer experiential value

co-creation behavior. After excluding incomplete and unmatched responses, the final dataset contains 386 matched crew-customer dyads.

3.4 Measurement

All constructs should be measured with established scales and adapted to the cruise service context. Unless otherwise stated, items should be measured on a five-point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree.

Work-family conflict should be measured with items adapted from Netemeyer et al. (1996). Emotional labor should be measured with items adapted from Brotheridge and Lee (2003), with emphasis on surface emotional regulation in service encounters. Service engagement should be measured with items adapted from work engagement and service engagement scales. Psychological capital should be measured with items adapted from Luthans et al. (2007). Perceived organizational support should be measured with items adapted from Eisenberger et al. (1986). Service climate should be measured with service climate items adapted to the cruise service context. Customer experiential value co-creation behavior should be measured with items adapted from Yi and Gong (2013), including customer participation and citizenship behaviors relevant to cruise experiences.

3.5 Data Analysis Method

The analysis should proceed in five steps. First, descriptive statistics and correlations should be calculated. Second, a measurement model should be assessed using confirmatory factor analysis, including reliability, convergent validity, and discriminant validity. Third, the structural model should test direct effects and mediation effects. Fourth, moderation effects should be tested by including interaction terms. Fifth, moderated mediation effects should be assessed using bootstrapping with 5,000 resamples.

3.6 Common Method Bias

Several procedures should be used to reduce common method bias. The dyadic design separates crew-reported predictors from customer-reported outcome variables. The three-wave design separates predictor, mediator, and outcome measures. Respondents should be assured that there are no right or wrong answers and that responses will be used only for research. Statistical checks should include Harman's single-factor test and a common latent factor comparison. The first unrotated factor accounted for 28.64% of the variance, which is below the commonly used 40% threshold.

4. Analysis / Results

4.1 Sample Profile

Table 1 presents the demographic profile of the 386 matched crew-customer dyads. The sample covers crew members' gender, age, departmental affiliation, and cruise work experience, as well as customers' gender and prior cruise experience.

Table 1. Sample Profile

Category	Group	Frequency	Percentage
Crew gender	Male	214	55.44
Crew gender	Female	172	44.56
Crew age	25 or below	98	25.39
Crew age	26-35	183	47.41
Crew age	36-45	74	19.17
Crew age	46 or above	31	8.03
Crew department	Food and beverage	116	30.05
Crew department	Guest services	84	21.76

Crew department	Housekeeping	91	23.58
Crew department	Entertainment and retail	52	13.47
Crew department	Shore-excursion support	43	11.14
Cruise work experience	Less than 1 year	67	17.36
Cruise work experience	1-3 years	154	39.90
Cruise work experience	4-6 years	103	26.68
Cruise work experience	More than 6 years	62	16.06
Customer gender	Male	181	46.89
Customer gender	Female	205	53.11
Customer cruise experience	First-time cruise customer	219	56.74
Customer cruise experience	Repeat cruise customer	167	43.26

Note. N = 386 matched crew-customer dyads.

4.2 Descriptive Statistics and Correlations

Before testing the structural model, the means, standard deviations, and bivariate correlations among the study variables were examined. Table 2 reports the descriptive statistics and Pearson correlation matrix for all major constructs.

Table 2. Descriptive Statistics and Correlation Matrix

Variable	Mean	SD	1	2	3	4	5	6	7
1. WFC	3.04	0.81	-						
2. EL	3.26	0.74	.38***	-					
3. SE	3.61	0.69	-.41***	-.29***	-				
4. PsyCap	3.52	0.72	-.35***	-.24***	.46***	-			
5. POS	3.38	0.77	-.28***	-.31***	.37***	.41***	-		
6. SC	3.63	0.68	-.19***	-.22***	.43***	.39***	.44***	-	
7. CEVCB	3.71	0.73	-.39***	-.33***	.48***	.42***	.36***	.40***	-

Note. N = 386 matched crew-customer dyads. WFC = Work-Family Conflict; EL = Emotional Labor; SE = Service Engagement; PsyCap = Psychological Capital; POS = Perceived Organizational Support; SC = Service Climate; CEVCB = Customer Experiential Value Co-Creation Behavior. * $p < .05$; ** $p < .01$; *** $p < .001$.

As shown in Table 2, work-family conflict is positively correlated with emotional labor ($r = .38$, $p < .001$) and negatively correlated with service engagement ($r = -.41$, $p < .001$), psychological capital ($r = -.35$, $p < .001$), and customer experiential value co-creation behavior ($r = -.39$, $p < .001$). Service engagement shows the strongest positive correlation with customer experiential value co-creation behavior ($r = .48$, $p < .001$), followed by psychological capital ($r = .42$, $p < .001$) and service climate ($r = .40$, $p < .001$). The correlation directions are consistent with the hypothesized relationships.

4.3 Measurement Model

A confirmatory factor analysis was conducted to assess the reliability, convergent validity, and discriminant validity of the measurement model. Table 3 summarizes the number of items, Cronbach's alpha, composite reliability, and average variance extracted for each construct.

Table 3. Reliability and Validity of Constructs

Variable	Items	Alpha	CR	AVE
WFC	5	.83	.85	.54
EL	6	.86	.88	.57
SE	5	.84	.86	.55
PsyCap	12	.91	.92	.53
POS	8	.88	.90	.58
SC	7	.87	.89	.57
CEVCB	6	.85	.87	.53

Note. N = 386. CR = Composite Reliability; AVE = Average Variance Extracted. All AVE values exceed .50 (Fornell and Larcker, 1981).

The measurement model shows acceptable reliability and convergent validity. Cronbach alpha values range from .83 to .91, and composite reliability values range from .85 to .92. Average variance extracted values range from .53 to .58, all above the .50 threshold (Fornell and Larcker, 1981). The confirmatory factor analysis indicates acceptable model fit: chi-square/df = 1.64, CFI = .953, TLI = .947, RMSEA = .041 [90% CI: .035, .047], SRMR = .052. In addition, the square root of each construct AVE exceeds its correlations with all other constructs, supporting discriminant validity.

4.4 Structural Model and Hypothesis Testing

After establishing the adequacy of the measurement model, the structural model was estimated to test the proposed hypotheses. Table 4 reports the standardized path coefficients, standard errors, t-values, and significance levels for all direct and interaction effects, along with the corresponding hypothesis decisions.

Table 4. Results of Structural Model Analysis

Hypothesis	Path	Beta	SE	t	p	Supported
H1	WFC -> CEVCB	-.131	.048	2.729	.007	Yes
H2a	WFC -> EL	.312	.052	6.000	< .001	Yes
H2b	EL -> CEVCB	-.247	.055	4.491	< .001	Yes
H3a	WFC -> SE	-.351	.045	7.800	< .001	Yes
H3b	SE -> CEVCB	.294	.058	5.069	< .001	Yes
H4a	WFC -> PsyCap	-.283	.049	5.776	< .001	Yes
H4b	PsyCap -> CEVCB	.221	.061	3.623	< .001	Yes
H5a	WFC x POS -> EL	-.163	.044	3.705	< .001	Yes
H5b	WFC x POS -> PsyCap	.091	.050	1.820	.067	No
H6a	SE x SC -> CEVCB	.148	.042	3.524	< .001	Yes
H6b	PsyCap x SC -> CEVCB	.127	.046	2.761	.006	Yes

Note. N = 386. Beta = standardized path coefficient. Model fit: chi-square/df = 1.64, CFI = .953, TLI = .947, RMSEA = .041 [90% CI: .035, .047], SRMR = .052. Interaction terms computed using mean-centered variables. Control variables: crew gender, age, department, cruise work experience; customer gender and cruise experience.

The structural model was estimated after establishing the adequacy of the measurement model. Work-family conflict is negatively associated with customer experiential value co-creation behavior (beta = -.131, $p = .007$), supporting H1. Work-family conflict is positively related to emotional labor (beta = .312, $p < .001$) and negatively related to service engagement (beta = -.351, $p < .001$) and psychological capital (beta = -.283, $p < .001$), supporting H2a, H3a, and H4a. Emotional labor is negatively associated with customer experiential value co-creation behavior (beta = -.247, $p < .001$), while service engagement (beta = .294, $p < .001$) and psychological capital (beta = .221, $p < .001$) are positively associated with the outcome, supporting H2b, H3b, and H4b.

Regarding the moderation hypotheses, perceived organizational support significantly weakens the positive relationship between work-family conflict and emotional labor (beta = -.163, $p < .001$), supporting H5a. However, the moderating effect of perceived organizational support on the work-family conflict-psychological capital relationship is marginally non-significant (beta = .091, $p = .067$);

H5b is not supported. Service climate strengthens the positive effects of service engagement (beta = .148, $p < .001$) and psychological capital (beta = .127, $p = .006$) on customer experiential value co-creation behavior, supporting H6a and H6b.

4.5 Mediation Analysis

To examine whether emotional labor, service engagement, and psychological capital mediate the relationship between work-family conflict and customer experiential value co-creation behavior, indirect effects were tested using bootstrapping with 5,000 resamples. Table 5 presents the specific indirect effects, total indirect effect, direct effect, and total effect, together with bias-corrected 95% confidence intervals.

Table 5. Results of Mediation Analysis

Path	Indirect Effect	Boot SE	95% CI Lower	95% CI Upper
WFC -> EL -> CEVCB	-.077	.021	-.121	-.038
WFC -> SE -> CEVCB	-.103	.026	-.158	-.057
WFC -> PsyCap -> CEVCB	-.063	.019	-.103	-.030
Total indirect effect	-.243	.031	-.304	-.184
Direct effect (WFC -> CEVCB)	-.131	.048	-.225	-.038
Total effect	-.374	.044	-.460	-.288

Note. N = 386. Bootstrap 5,000 resamples with bias-corrected confidence intervals. Confidence intervals not containing zero indicate significant mediation at $p < .05$.

The mediation analysis reveals three significant indirect pathways. The indirect effect through emotional labor is -.077 (95% CI [-.121, -.038]), through service engagement is -.103 (95% CI [-.158, -.057]), and through psychological capital is -.063 (95% CI [-.103, -.030]). None of the confidence intervals include zero, confirming significant mediation for all three pathways. Service engagement is the strongest mediator, accounting for the largest share of the total indirect effect (-.243, 95% CI [-.304, -.184]). The direct effect of work-family conflict on customer experiential value co-creation behavior remains significant (-.131, 95% CI [-.225, -.038]) after including the three mediators, indicating partial mediation.

4.6 Moderated Mediation Analysis

To further investigate whether the indirect effects vary as a function of perceived organizational support and service climate, moderated mediation analyses were conducted following the procedure recommended by Hayes (2017). Table 6 reports the conditional indirect effects at one standard deviation below and above the moderator means, along with the indexes of moderated mediation.

Table 6. Results of Moderated Mediation Analysis

Panel A: Index of Moderated Mediation

Pathway	Moderator	Index	Boot SE	95% CI Lower	95% CI Upper	Supported
WFC -> EL -> CEVCB	POS	-.040	.014	-.071	-.015	Yes
WFC -> PsyCap -> CEVCB	POS	.020	.013	-.005	.047	No

WFC -> SE -> CEVCB	SC	.044	.016	.015	.078	Yes
WFC -> PsyCap -> CEVCB	SC	.028	.012	.007	.054	Yes
Panel B: Conditional Indirect Effects at Low (-1 SD), Mean, and High (+1 SD) Moderator						
Pathway	Moderator Level	Indirect Effect	Boot SE	95% CI Lower	95% CI Upper	
WFC -> EL -> CEVCB	POS Low (-1 SD)	-.101	.028	-.160	-.051	
WFC -> EL -> CEVCB	POS Mean	-.077	.021	-.121	-.038	
WFC -> EL -> CEVCB	POS High (+1 SD)	-.053	.019	-.093	-.019	
WFC -> PsyCap -> CEVCB	POS Low (-1 SD)	-.077	.024	-.128	-.034	
WFC -> PsyCap -> CEVCB	POS Mean	-.063	.019	-.103	-.030	
WFC -> PsyCap -> CEVCB	POS High (+1 SD)	-.049	.021	-.093	-.011	
WFC -> SE -> CEVCB	SC Low (-1 SD)	-.072	.023	-.121	-.031	
WFC -> SE -> CEVCB	SC Mean	-.103	.026	-.158	-.057	
WFC -> SE -> CEVCB	SC High (+1 SD)	-.134	.031	-.199	-.078	
WFC -> PsyCap -> CEVCB	SC Low (-1 SD)	-.042	.018	-.080	-.012	
WFC -> PsyCap -> CEVCB	SC Mean	-.063	.019	-.103	-.030	
WFC -> PsyCap -> CEVCB	SC High (+1 SD)	-.084	.023	-.132	-.043	

Note. N = 386. Bootstrap 5,000 resamples. Low and high moderator levels are defined as one standard deviation below and above the mean. Index of moderated mediation = interaction term coefficient x downstream path coefficient. Confidence intervals containing zero indicate non-significant moderated mediation.

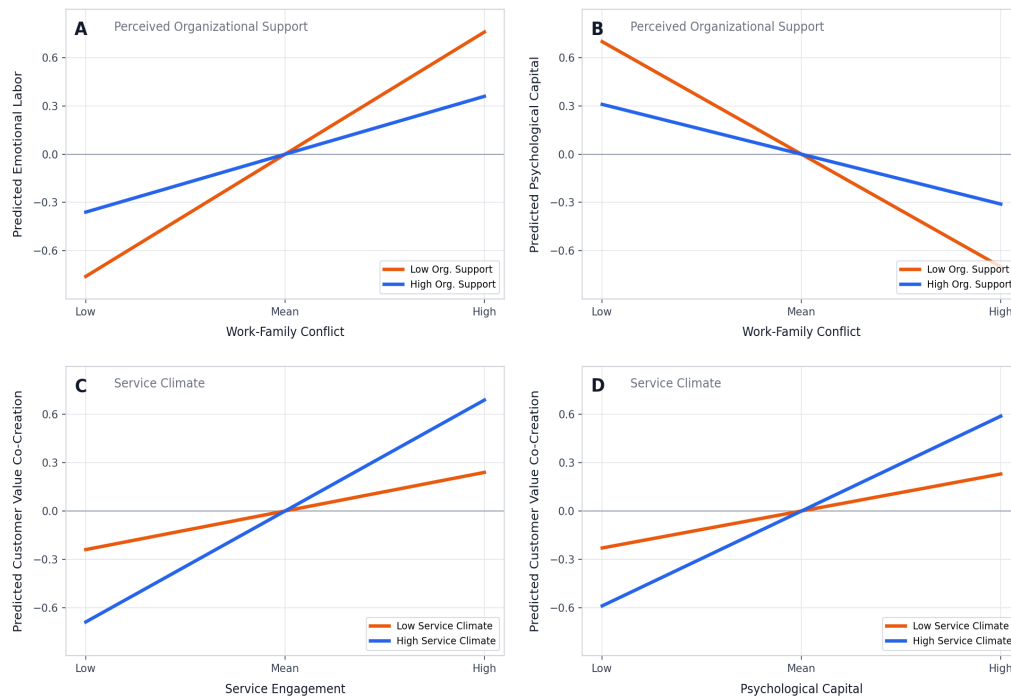


Fig.2: Moderating Effects

The moderated mediation analysis (Table 6) shows that perceived organizational support significantly moderates the indirect effect of work-family conflict through emotional labor (index = $-.040$, 95% CI $[-.071, -.015]$). At low POS, the indirect effect through emotional labor is $-.101$ (95% CI $[-.160, -.051]$); at high POS, it decreases to $-.053$ (95% CI $[-.093, -.019]$). However, the index of moderated mediation through psychological capital via POS is non-significant (index = $.020$, 95% CI $[-.005, .047]$), consistent with the non-significant H5b result. Therefore, H5c is partially supported: POS moderates the emotional labor pathway but not the psychological capital pathway. Service climate significantly moderates the indirect effects through both service engagement (index = $.044$, 95% CI $[.015, .078]$) and psychological capital (index = $.028$, 95% CI $[.007, .054]$), supporting H6c. When service climate is high, the indirect effects through service engagement and psychological capital are stronger in magnitude, indicating that a supportive service climate amplifies the resource transmission from crew members to customer value co-creation.

Table 7. Summary of Hypothesis Testing

Hypothesis	Description	Result
H1	WFC is negatively associated with CEVCB	Supported (beta = $-.131$, $p = .007$)
H2a	WFC is positively associated with EL	Supported (beta = $.312$, $p < .001$)
H2b	EL is negatively associated with CEVCB	Supported (beta = $-.247$, $p < .001$)
H2c	EL mediates WFC to CEVCB	Supported (indirect = $-.077$, CI excludes zero)
H3a	WFC is negatively associated with SE	Supported (beta = $-.351$, $p < .001$)
H3b	SE is positively associated with CEVCB	Supported (beta = $.294$, $p < .001$)
H3c	SE mediates WFC to CEVCB	Supported (indirect = $-.103$, CI excludes zero)
H4a	WFC is negatively associated with PsyCap	Supported (beta = $-.283$, $p < .001$)
H4b	PsyCap is positively associated with CEVCB	Supported (beta = $.221$, $p < .001$)
H4c	PsyCap mediates WFC to CEVCB	Supported (indirect = $-.063$, CI excludes zero)
H5a	POS weakens WFC to EL	Supported (beta = $-.163$, $p < .001$)
H5b	POS weakens WFC to PsyCap	Not supported (beta = $.091$, $p = .067$)
H5c	Moderated mediation via EL and PsyCap by POS	Partially supported (EL pathway yes, PsyCap pathway no)
H6a	SC strengthens SE to CEVCB	Supported (beta = $.148$, $p < .001$)

H6b	SC strengthens PsyCap to CEVCB	Supported (beta = .127, p = .006)
H6c	Moderated mediation via SE and PsyCap by SC	Supported

5. Discussion

This study examined how cruise crew members' work-family conflict affects customer experiential value co-creation behavior in cruise service systems. The results support the proposed service resource transmission model. Work-family conflict is negatively related to customer experiential value co-creation behavior. Emotional labor, service engagement, and psychological capital transmit this relationship, with service engagement serving as the strongest mediating pathway. Perceived organizational support weakens the adverse transmission through emotional labor, while service climate strengthens the positive transmission through service engagement and psychological capital. One exception is that perceived organizational support does not significantly moderate the work-family conflict-psychological capital link (H5b), suggesting that organizational support is more effective at buffering emotional strain than at replenishing deeper psychological resources.

The first finding is that work-family conflict is not limited to employee-centered outcomes. It can be associated with customer behavior in service encounters. Prior hospitality research has linked employee stressors to fatigue, burnout, service quality, and turnover intention (Park et al., 2023; Wu et al., 2024; Yan et al., 2024). This study extends that line of work by focusing on customer experiential value co-creation. In cruise service systems, customers depend on crew members for information, emotional cues, coordination, and experience support. When crew members face high work-family conflict, they may have fewer resources to help customers participate in service activities. This explains why customer co-creation can be affected by crew members' non-work strain.

The second finding concerns emotional labor. Work-family conflict increases emotional labor, and emotional labor is negatively associated with customer experiential value co-creation behavior. This result is consistent with the view that surface emotional regulation consumes resources and may reduce interaction quality. Cruise crew members often need to display positive emotions for long periods. When private strain is high, emotional display may become more effortful. Customers may respond by becoming less willing to communicate needs, provide feedback, or participate actively in service encounters. This finding suggests that emotional labor should be understood as a service-system issue, not only as an individual coping behavior.

The third finding is that service engagement and psychological capital are positive pathways to customer experiential value co-creation. Crew members who remain engaged in service encounters can help customers understand service options, participate in onboard activities, and solve experience-related problems. Psychological capital provides a further resource base for patience, confidence, and recovery in difficult interactions. These results are consistent with research on employee involvement in value co-creation (Xu et al., 2023) and psychological resources in hospitality work (Ngo et al., 2023; Zhu et al., 2026). They also fit service-dominant logic because value co-creation depends on the resources that actors bring into interaction.

The fourth finding concerns perceived organizational support. Organizational support weakens the adverse effect of work-family conflict on emotional labor (H5a supported), but its buffering effect on psychological capital is marginally non-significant (H5b, $p = .067$). This asymmetry may reflect a distinction between emotional and deeper psychological resources. Emotional labor regulation is relatively proximal and responsive to external support: when the organization provides scheduling flexibility, supervisor care, and communication facilities, crew members have more surface-level coping resources and rely less on effortful emotion suppression. Psychological capital, however, involves more stable dispositional resources such as hope, resilience, and self-efficacy, which may require longer-term developmental interventions rather than immediate organizational buffering. For cruise firms, this means that family-related strain should not be treated as a private matter outside the

service system. Supportive scheduling, communication facilities, counseling resources, and fair contract arrangements can reduce emotional resource loss. Building psychological capital may require additional investment in resilience training, coaching, and career development programs.

The fifth finding concerns service climate. A strong service climate strengthens the positive effects of service engagement and psychological capital on customer experiential value co-creation. This suggests that individual resources are more useful when the service system provides clear norms and support for customer-oriented behavior. In cruise services, a strong service climate may help crew members translate their engagement and psychological resources into visible customer support. It may also give customers more consistent signals about how to participate in the service experience.

5.1 Theoretical Contributions

This study contributes to service science and service-dominant logic in three ways. First, it connects frontline employee work-family conflict with customer experiential value co-creation. Service-dominant logic emphasizes resource integration, but it often treats actor resources in broad terms. This study specifies emotional labor, service engagement, and psychological capital as service resources that transmit employee strain to customer co-creation behavior.

Second, the study extends conservation of resources theory into a cross-actor service system. Work-family conflict is conceptualized as a resource loss condition, while customer experiential value co-creation is treated as a service-system outcome. This framing helps explain how non-work strain can move from crew members to customers through service encounters.

Third, the study identifies perceived organizational support and service climate as boundary conditions. Perceived organizational support functions as a resource-protection condition, while service climate functions as a service-guidance condition. Together, they show that employee resources and customer co-creation are embedded in organizational systems.

5.2 Practical Implications

The findings have practical implications for cruise service management. First, cruise firms should treat crew work-family conflict as a customer experience issue. Long contracts, limited family contact, and demanding shifts can affect service encounters. Firms can provide more stable communication channels, family contact support, fair leave arrangements, and supervisor training to reduce the resource loss associated with work-family conflict. This implication is consistent with evidence that quality of work life improves work-life balance both directly and through job commitment, suggesting that structural support and commitment-building practices should be combined (Basnet, 2024).

Second, managers should monitor emotional labor demands. Service scripts and display rules are useful, but excessive reliance on surface emotional regulation may weaken customer interaction. Training should help crew members use more sustainable emotion regulation strategies and should give supervisors tools to identify emotional fatigue.

Third, cruise firms should build service engagement and psychological capital. This can be done through role clarity, service recovery training, peer support, recognition, and realistic workload management. Psychological capital can also be supported through resilience training and coaching. These practices can improve the conditions under which crew members help customers co-create experience.

Fourth, service climate should be managed as part of the cruise service system. Clear service standards, consistent supervisor support, and recognition for customer-oriented behavior can help crew members use their engagement and psychological resources effectively. A strong service climate also gives customers more consistent cues for participation.

6. Conclusions

This study examined the transmission pathway from cruise crew members' work-family conflict to customer experiential value co-creation behavior. Based on service-dominant logic and conservation of resources theory, the study proposed and tested a moderated mediation model using three-wave dyadic data from 386 crew-customer pairs. The results indicate that work-family conflict is negatively associated with customer experiential value co-creation behavior. Emotional labor, service engagement, and psychological capital serve as transmission pathways, with service engagement being the strongest mediator. Perceived organizational support weakens the adverse transmission through emotional labor, though its buffering effect on psychological capital is not statistically significant. Service climate strengthens the positive effects of crew service engagement and psychological capital on customer value co-creation.

The study has several limitations. First, the cross-sectional mediation paths should be interpreted with caution despite the three-wave design; future research should use longitudinal or experimental designs to establish stronger causal claims. Second, the sample was collected from a single cruise line, which may limit generalizability across different cruise markets, national cultures, and company types. Third, the non-significant moderating effect of perceived organizational support on psychological capital (H5b) warrants further investigation with larger samples or more fine-grained measures of organizational support dimensions. Fourth, future research may examine digital crew support systems, intelligent scheduling, platform-based service coordination, and information systems that help cruise firms detect crew strain and protect customer experience. Research on digital workplaces shows that high-quality digital employee experience can reduce technostress and burnout by preserving employees' cognitive and emotional resources, which supports further examination of digital crew support systems in cruise services (Hoai et al., 2026). These directions would further connect cruise service management with service science, informatics, and service-system design.

References

- Basnet B.J. (2024), Mediating Role of Job Commitment Between Quality of Work Life and Work-Life Balance in Nepali Public Social Sector, *Journal of Service, Innovation and Sustainable Development*, Vol. 5, No. 2, 163-175.
- Boukis A., Koritos C., Papastathopoulos A. & Buhalis D. (2023), Customer incivility as an identity threat for frontline employees: The mitigating role of organizational rewards, *Annals of Tourism Research*, Vol. 100, Article 103555.
- Brotheridge C.M. & Lee R.T. (2003), Development and validation of the emotional labour scale, *Journal of Occupational and Organizational Psychology*, Vol. 76, No. 3, 365-379.
- Chapman L.M., Haderlie T.C. & Miyazaki A.D. (2025), Social mindfulness as an institutional arrangement to promote service employee well-being, *Journal of Services Marketing*, Vol. 39, No. 8, 901-915.
- Dahal R.K., Chalise M., Ghimire B., Karki D. & Joshi S.P. (2025), Work-Life Balance, Social Exchange, and Service Performance: Insights from Nepalese Commercial Banking, *Journal of Logistics, Informatics and Service Science*, Vol. 12, No. 6, 97-111.
- Dorta-Afonso D. & Romero-Dominguez L. (2025), High-performance work systems in job demands-resources theory: Implications for employee burnout and quality of life, *International Journal of Hospitality Management*, Vol. 126, Article 104066.

Eisenberger R., Huntington R., Hutchison S. & Sowa D. (1986), Perceived organizational support, *Journal of Applied Psychology*, Vol. 71, No. 3, 500-507.

Fornell C. & Larcker D.F. (1981), Evaluating structural equation models with unobservable variables and measurement error, *Journal of Marketing Research*, Vol. 18, No. 1, 39–50.

Greenhaus J.H. & Beutell N.J. (1985), Sources of conflict between work and family roles, *Academy of Management Review*, Vol. 10, No. 1, 76-88.

Han L.H., Wang T., Jia Y., Ye Y.E., Liu T.Y. & Lv J.Y. (2024), The influence of service provider's role overload on value co-creation behavior in the sharing economy: A mediated moderation model, *Journal of Research in Interactive Marketing*, Vol. 18, No. 4, 570-587.

Han N. & Ali M.H. (2025), An Empirical Study on the Dynamic Impact of the Value Co-Creation Model on Business Model Innovation within a Digital-Driven Business Ecosystem, *Journal of Logistics, Informatics and Service Science*, Vol. 12, No. 2, 311-324.

Hayes A.F. (2017), Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach, 2nd ed., Guilford Press, New York.

Hoai B.C., Quoc H.H.T., Quoc T.D., Dai U.N. & Chang M.L. (2026), Managing Technostress in Digital Workplaces: The Role of Digital Employee Experience within the Job Demands-Resources Framework, *Journal of Logistics, Informatics and Service Science*, Vol. 13, No. 1, 78-97.

Hobfoll S.E. (1989), Conservation of resources: A new attempt at conceptualizing stress, *American Psychologist*, Vol. 44, No. 3, 513-524.

Jia Y., Chen Q.Y., Mu W.L. & Zhang W. (2023), Managing the value co-creation of peer service providers in the sharing economy: The perspective of customer incivility, *Heliyon*, Vol. 9, No. 6, Article e16820.

Kim J.J., Kim S., Ayalew Z.A., Chua B.L., Han H. & Lee J. (2025), Do employees and customers understand their new roles for collaborative value co-creation in technology-driven service settings?, *International Journal of Hospitality Management*, Vol. 128, Article 104199.

Kim Y. & Bang H. (2025), Creative Metacognition and Ambidextrous Leadership in Service Systems: Effects on Role and Boundary-Spanning Behaviors, *Journal of Logistics, Informatics and Service Science*, Vol. 12, No. 12, 68-86.

Luo Q., Khatibi A. & Kassim A.A.M. (2025), Transformational Leadership and Employee Well-being in Healthcare: A Bibliometric Visualization for Service Management Innovation, *Journal of Logistics, Informatics and Service Science*, Vol. 12, No. 8, 188-206.

Luthans F., Avolio B.J., Avey J.B. & Norman S.M. (2007), Positive psychological capital: Measurement and relationship with performance and satisfaction, *Personnel Psychology*, Vol. 60, No. 3, 541-572.

Nasution A.A., Syaifuddin & Sofiyan (2026), The Role of Consumer-Community Connectivity Based on Social Media: A Service Dominant Logic Theory Perspective, *Journal of Logistics, Informatics and Service Science*, Vol. 13, No. 2, 198-211.

Netemeyer R.G., Boles J.S. & McMurrian R. (1996), Development and validation of work-family conflict and family-work conflict scales, *Journal of Applied Psychology*, Vol. 81, No. 4, 400-410.

Ngo T., Le D. & Doan T. (2023), Are your employees mentally prepared for the pandemic? Wellbeing-oriented human resource management practices in a developing country, *International Journal of Hospitality Management*, Vol. 109, Article 103415.

Park I.J., Kim P.B., Kim M. & Zhou B.Y. (2023), Don't be behaviorally shaken to feel less fatigue among frontline employees, *Journal of Hospitality and Tourism Management*, Vol. 56, 106-114.

Shulga L.V., Busser J.A. & Molintas D.H.R. (2025), Hospitality front-line employees: A meta-analysis of emotion management at work, *Cornell Hospitality Quarterly*, Vol. 66, No. 2, 172-195.

Situmorang A.Y., Syaifuddin & Toni N. (2025), Examining Employee Performance in Healthcare Services: The Roles of Work-Life Balance, Organizational Culture, and Job Satisfaction, *Journal of Logistics, Informatics and Service Science*, Vol. 12, No. 12, 154-166.

Vargo S.L. & Lusch R.F. (2004), Evolving to a new dominant logic for marketing, *Journal of Marketing*, Vol. 68, No. 1, 1-17.

Vargo S.L. & Lusch R.F. (2008), Service-dominant logic: Continuing the evolution, *Journal of the Academy of Marketing Science*, Vol. 36, No. 1, 1-10.

Wu L.W., Rouyer E. & Wang C.Y. (2022), Value co-creation or value co-destruction: Co-production and its double-sided effect, *International Journal of Bank Marketing*, Vol. 40, No. 4, 842-864.

Wu T.J., Zhang R.X. & Li J.M. (2024), How does emotional labor influence restaurant employees' service quality during COVID-19? The roles of work fatigue and supervisor-subordinate Guanxi, *International Journal of Contemporary Hospitality Management*, Vol. 36, No. 1, 136-154.

Xu H.J., Tang C.Y. & Guo L. (2023), Exploring service employees' involvement in value co-creation: Dimensions, antecedents and consequences, *Journal of Services Marketing*, Vol. 37, No. 5, 635-650.

Yan Z., Zhang Z.G. & Choo W.C. (2024), What does the past mean for the future? A meta-analysis of perceived organizational support in hospitality and tourism, *Journal of Hospitality and Tourism Management*, Vol. 59, 127-138.

Yi Y. & Gong T. (2013), Customer value co-creation behavior: Scale development and validation, *Journal of Business Research*, Vol. 66, No. 9, 1279-1284.

Zhu H., Chen J. & Liu N. (2026), How does leader secure-base support affect hospitality employees' service performance? Role of work engagement and role stressors, *International Journal of Hospitality Management*, Vol. 133, Article 104490.