

INTERNATIONAL JOURNAL OF SOCIAL SCIENCES AND BUSINESS RESEARCH

Vol. 2, Issue 2. July - Dec 2025

ISSN 3088-3717 (Online)

ISSN 3088-37xx (Print)

JOURNAL INFORMATION

International Journal of Social Sciences and Business Research (IJSSBR)

Volume 2, No. 2 (July – December 2025)

Journal Title	International Journal of Social Sciences and Business Research (IJSSBR)
Owner / Publisher	Research and Development Division, Rajamangala University of Technology Krungthep
ISSN	ISSN 3088-3717 (Online) ISSN 3088-37xx (Print)
Editor	Assistant Professor Supaphorn Akkapin, Ph.D., International College, Rajamangala University of Technology Krungthep
Language	English
Publication Frequency	3 issues per year (Issue 1: January–April; Issue 2: May–August; Issue 3: September–December)
Types of Articles	Research article, Academic article, Review article, Book review
Article Processing Charge	None
Website	https://so20.tci-thaijo.org/index.php/ijssbr
Contact	Rajamangala University of Technology Krungthep, Thung Maha Mek, Sathon, Bangkok 10120, Thailand. E-mail: supaphorn.a@mail.rmutk.ac.th

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CONTENTS

Research Articles

Transformational Leadership and Employee Loyalty in Chinese Service SMEs: Emotional Regulation and Communication as Mediators **1**
ZhuoNi Zhang, Supaphorn Akkapin and Piyarat Pipattharasakul

The Impact of Ambidextrous Leadership and Organizational Innovation Climate on Innovation Performance **18**
Zhou Hong, Supaphorn Akkapin, Busarin Detdamrongpreecha and Piyarat Pipattharasakul

Fashion Entrepreneurs: Evaluating an Experiential Learning Model in Thailand **32**
Dang Khoa Nguyen, Armaj Sombunjaroen, Thi Bich Khue Nguyen and Toshima Watanabe

The Influence of Work Values on Employees' Green Behavior in Technology Enterprise: Mediating Roles of Climate and Motivation **43**
Bowen Li and Tanawat Teepapal

The Impact of Online Reference Groups on Shared Green Consumption Behavior: The Mediating Role of Natural Empathy **68**
Ruyi Zhang, Supaphorn Akkapin and Piyarat Pipattarasakul

Exploring User Acceptance of EV Charging Stations: The Mediating Role of Perceived Value in Chengdu, China **80**
Siwei Huang and Tanawat Teepapal

The Mediating Role of Consumer Cognition in the Relationship Between Live Streamers' Personal Qualities and Consumer Purchase Intention **93**
Binrui Shi, Piyarat Pipattarasakul and Supaphorn Akkapin

Exploring the Impact of Studying Abroad on Chinese Students in Thailand: Academic, Cultural, and Personal Experiences **103**
Alan Robert White, Supaphorn Akkapin, Tubagus Achmad Darodjat, Atcharea Salee, Phattarawadee Rungsimanop and Sumalee Wongcharoenkul

Transformational Leadership and Employee Loyalty in Chinese Service SMEs: Emotional Regulation and Communication as Mediators

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Received: 4 June 2025; Revised: 6 June 2025; Accepted: 9 June 2025

Abstract

Purpose

This study investigates how transformational leadership influences employee loyalty in service-focused small and medium-sized enterprises (SMEs) in Shandong Province, China, by examining emotional regulation as a mediating mechanism and organizational communication as a moderating factor. Drawing on Social Exchange Theory, Leader–Member Exchange Theory, and the Job Demands–Resources Model, it seeks to illuminate the affective and structural processes through which leadership fosters loyalty in high-emotion service roles.

Methods

A cross-sectional survey of 425 employees from service-oriented SMEs in Shandong Province was conducted. Data were first assessed for reliability and descriptive statistics using SPSS 27.0, then subjected to structural equation modeling with bootstrapped mediation and moderation analyses in Mplus 7.0 (5,000 resamples).

Findings

Transformational leadership emerged as a significant predictor of employee loyalty (standardized path coefficient = 0.62, $p < .001$). Emotional regulation was found to partially mediate the relationship between leadership and loyalty (indirect effect $\beta = 0.61$, $p < .001$), indicating that employees' capacity to manage emotional demands enhances the impact of leadership on their commitment. Moreover, organizational communication strengthened both the direct influence of transformational leadership on loyalty and its indirect effect via emotional regulation, demonstrating that robust communication channels amplify these effects.

Implications

Organizations should invest in leadership-development programs that incorporate emotional regulation training and cultivate transparent, two-way communication systems. Such initiatives are likely to bolster employee loyalty, reduce turnover, and improve overall organizational performance in service SMEs.

Originality

By integrating emotional regulation and organizational communication into a combined mediational–moderational framework, this research extends prevailing leadership theories within the unique cultural and structural context of Chinese service SMEs.

Keywords: transformational leadership; employee loyalty; emotional regulation; organizational communication; service SMEs; China.

1 Introduction

1.1 Background and Rationale

In today's rapidly evolving marketplace, service industries are confronted with intensifying competitive pressures driven by globalization and accelerated digital transformation. Companies operating in sectors such as hospitality, healthcare, retail, and financial services must continuously innovate to meet heightened customer expectations and differentiate themselves (Huang & Yang, 2023). Central to these efforts is the organization's workforce: employees who are engaged, resilient, and deeply committed not only deliver superior service experiences but also contribute to organizational learning and long-term sustainability. Consequently, **employee loyalty**, defined as a staff member's affective attachment and intention to remain with the organization (Meyer & Allen, 1991), has emerged as a pivotal indicator of operational success. High levels of loyalty reduce turnover costs, stabilize team dynamics, and foster customer trust through consistent service delivery (Chai, 2023).

A substantial body of research indicates that **transformational leadership**—a style in which leaders articulate a compelling vision, inspire followers to transcend self-interest, and provide individualized support—can significantly enhance employees' intrinsic motivation, job satisfaction, and organizational commitment (Bass & Riggio, 2006; Burns, 1978). Transformational leaders influence followers through four core behaviors:

1. **Idealized Influence**, serving as ethical role models;
2. **Inspirational Motivation**, framing a challenging yet attainable vision;
3. **Intellectual Stimulation**, encouraging creativity and critical thinking; and
4. **Individualized Consideration**, attending to each employee's developmental needs.

While the direct positive relationship between transformational leadership and employee loyalty has been well documented (Judge & Piccolo, 2004), the **underlying mechanisms** remain underexplored—especially in the context of small and medium–sized enterprises (SMEs) in emerging markets such as Shandong Province, China. Two promising mediators warrant particular attention:

1. **Emotional Regulation (ER)**. In service roles characterized by frequent customer interaction and high emotional labor demands, employees must effectively manage their affective responses to maintain service quality and personal well-being (Gross, 1998; Grandey, 2003). Transformational leaders may foster ER by modeling adaptive coping strategies, providing emotional support, and creating psychologically safe climates where employees feel empowered to express concerns and seek assistance.

2. **Organizational Communication (OC)**. Clear, transparent, and timely communication ensures that employees understand strategic objectives, feel valued, and perceive that their voices are heard (Daft & Lengel, 1986; Men & Stacks, 2014). Transformational leaders who prioritize two-way communication and leverage rich media channels can reinforce trust and align personal and organizational goals.

Despite ample evidence for each construct's individual impact on loyalty, **few studies** have simultaneously examined transformational leadership alongside ER and OC in a unified framework. Doing so is critical for two reasons:

- **Theoretical integration.** Merging Social Exchange Theory, Leader–Member Exchange Theory, and the Job Demands–Resources Model can illuminate how leadership behaviors translate into resource gains (e.g., emotional and informational resources) that bolster loyalty.
- **Practical guidance.** SMEs often lack extensive HR infrastructures; understanding multiple pathways to loyalty empowers managers to implement cost-effective leadership development, emotion-management training, and communication protocols.

Research Gap. Prior research has largely focused on direct leadership–commitment links or single mediators in isolation (Chuang et al., 2012; Karanges et al., 2015). There is a clear need for empirical studies that test **parallel** and **serial** mediation models incorporating both ER and OC, particularly within the unique cultural and organizational context of Chinese service SMEs.

1.2 Research Questions

To address these gaps, this study is guided by three central questions:

1. **RQ1.** To what extent does transformational leadership influence employee loyalty in SMEs within China's service industries?
2. **RQ2.** Does emotional regulation mediate the relationship between transformational leadership and employee loyalty in these organizations?
3. **RQ3.** Does organizational communication mediate the relationship between transformational leadership and employee loyalty in these organizations?

1.3 Research Objectives

Aligned with the above questions, the study pursues three objectives:

- **Objective 1.** Examine the direct effect of transformational leadership on employee loyalty.
- **Objective 2.** Investigate emotional regulation as a mediating mechanism linking transformational leadership to employee loyalty.
- **Objective 3.** Assess organizational communication as an additional mediator in the transformational leadership–employee loyalty relationship.

1.4 Hypotheses

Drawing on theoretical foundations and existing empirical evidence, we propose the following hypotheses:

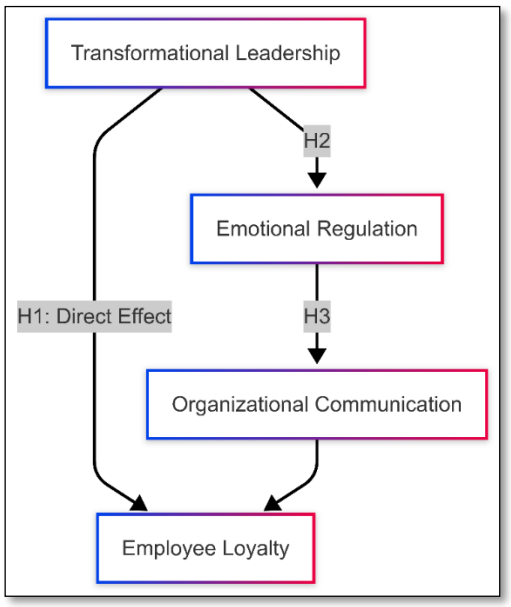
- **H1.** Transformational leadership positively influences employee loyalty.
- **H2.** Emotional regulation mediates the positive relationship between transformational leadership and employee loyalty.

- **H3.** Organizational communication mediates the positive relationship between transformational leadership and employee loyalty.

1.5 Research Conceptual Framework

The proposed framework (Figure 1) illustrates both the **direct** pathway from transformational leadership (TL) to employee loyalty (EL) and the **indirect** pathways through emotional regulation (ER) and organizational communication (OC). Additionally, it allows for the possibility that ER may enhance OC, creating a **serial mediation** path (TL → ER → OC → EL).

Figure 1. Transformational leadership (TL) exerts a direct effect on employee loyalty (EL; H1) and indirect effects via emotional regulation (TL → ER → EL; H2) and organizational communication (TL → OC → EL; H3). ER also fosters OC, suggesting a serial pathway TL → ER → OC → EL.



1.6 Definition of Key Terms

- **Transformational Leadership (TL)**

A leadership approach in which leaders inspire and motivate followers to exceed expectations by transforming their beliefs, values, and goals through idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass, 1985).

- **Emotional Regulation (ER)**

The process by which individuals monitor, evaluate, and modify emotional reactions to achieve goal-directed outcomes. In service contexts, ER strategies such as cognitive reappraisal and deep acting help employees manage emotional labor demands (Gross, 1998).

- **Organizational Communication (OC)**

The formal and informal channels through which information, feedback, and recognition are exchanged within an organization. Effective OC is characterized by clarity, transparency, frequency, and multi-directional flows, fostering shared understanding and trust (Clampitt, 2016).

- **Employee Loyalty (EL)**

Employees' psychological and behavioral commitment to their employing organization, encompassing affective attachment, normative obligation, and the behavioral intent to remain and advocate for the organization (Meyer & Allen, 1991).

2 Literature Review

Theoretical Foundations

The interplay between transformational leadership, employee loyalty, emotional regulation, and organizational communication is grounded in several foundational organizational theories. **Social Exchange Theory (SET)** posits that workplace relationships are built upon reciprocal exchanges of support, resources, and recognition; when leaders provide support and fair treatment, employees are more likely to reciprocate with increased commitment and loyalty (Blau, 1964; Cropanzano & Mitchell, 2005). **Leader–Member Exchange (LMX) Theory** narrows this focus to the dyadic relationship between leaders and individual subordinates, emphasizing that high-quality exchanges—marked by trust, communication, and resource sharing—lead to stronger organizational commitment and loyalty (Graen & Uhl-Bien, 1995). The **Job Demands–Resources (JD-R) Model** further explains how job resources, such as supportive leadership and effective communication, help employees manage the emotional demands of service roles, thereby enhancing motivation and retention (Bakker & Demerouti, 2007). Finally, organizational communication theories, including **Media Richness Theory** and **Social Information Processing Theory**, highlight that clear, transparent, and adaptive communication is critical to shaping positive employee attitudes and behaviors (Daft & Lengel, 1986; Walther, 1992)1.

2.1 Transformational Leadership

Transformational leadership is defined by four core dimensions: inspirational motivation, intellectual stimulation, individualized consideration, and idealized influence (Bass & Riggio, 2006). Leaders who practice this style articulate a compelling vision, challenge employees to innovate, provide individualized support, and serve as ethical role models. Empirical research consistently demonstrates that transformational leadership is positively associated with employee loyalty, job satisfaction, and organizational commitment (Judge & Piccolo, 2004). In service industries—where employees face high emotional labor and frequent customer interactions—transformational leaders play a crucial role in motivating staff, reducing burnout, and fostering a climate of trust and innovation (Choi et al., 2016; Hu, 2020)1.

The evolution of transformational leadership research began with Burns (1978), who distinguished it from transactional leadership. Bass (1985) and Bass & Avolio (1994) expanded this framework and developed the Multifactor Leadership Questionnaire (MLQ),

which remains widely used for assessing leadership styles. Subsequent studies have confirmed transformational leadership's positive effects across cultures and sectors, including its capacity to foster cohesive, innovative, and high-performing teams in service environments (Avolio & Yammarino, 2013)1.

Employee Loyalty

Employee loyalty is generally conceptualized as the degree of emotional attachment, commitment, and identification individuals have with their organization (Allen & Meyer, 1990)1. Loyal employees are more likely to stay with their organization, exert discretionary effort, and align their behaviors with organizational goals. In service settings, employee loyalty is particularly critical due to its direct impact on customer satisfaction, service quality, and organizational stability (Heskett et al., 1997; Choi & Kim, 2019). Antecedents of loyalty include value congruence, supportive leadership, fair reward systems, and opportunities for professional growth (Meyer & Herscovitch, 2001; Chen & Francesco, 2003).

In high-contact service industries, loyal employees help deliver consistent customer experiences, drive repeat business, and act as organizational ambassadors (Kandampully et al., 2015; Caruana, 2002). However, high turnover, emotional labor, and burnout present persistent challenges, making leadership and communication interventions essential for sustaining loyalty (Tracey & Hinkin, 2008)1.

2.2 Emotional Regulation

Emotional regulation refers to the processes by which individuals influence their emotional experiences and expressions (Gross, 1998)1. In service roles, employees often engage in emotional labor—managing their emotions to meet organizational and customer expectations (Hochschild, 1983). Transformational leaders can enhance employees' emotional regulation by providing support, modeling positive coping strategies, and fostering a psychologically safe environment (Harms et al., 2017). Effective emotional regulation, especially deep acting (genuine emotional alignment), reduces burnout and strengthens organizational commitment (Brotheridge & Lee, 2002; Grandey, 2003).

Emotional labor is particularly pronounced in service industries, where employees must frequently adjust their emotional displays to align with organizational norms and customer expectations. Prolonged surface acting can lead to emotional exhaustion, while deep acting—encouraged by supportive leadership—can reduce dissonance and foster authentic service interactions (Grandey, 2000; Van Dijk & Brown, 2006)1.

2.3 Organizational Communication

Organizational communication encompasses the formal and informal processes through which information is shared within organizations (Goldhaber, 1993)1. Key dimensions include clarity, openness, frequency, and direction of communication (Men & Stacks, 2014). Effective communication enhances trust, reduces ambiguity, and aligns employees with organizational objectives. In service industries, robust communication channels are essential for managing emotional labor, ensuring role clarity, and fostering a sense of inclusion and loyalty (Karanges et al., 2015; Bartram & Cavanagh, 2019).

Theoretical perspectives such as Media Richness Theory (Daft & Lengel, 1986) and Communication Accommodation Theory (Giles et al., 1991) suggest that leaders who tailor their communication style to employee needs and organizational contexts can strengthen interpersonal connections, trust, and loyalty. In SMEs, where resource constraints and high turnover are common, effective communication is especially vital for maintaining stability and commitment (Men, 2014)1.

2.4 Employee Loyalty

Employee loyalty refers to an individual's emotional attachment, identification with, and commitment to their organization (Allen & Meyer, 1990). Loyal employees exhibit a strong desire to remain with the organization, support its goals, and contribute proactively to its success. In the context of service industries, where customer-facing roles demand consistent interpersonal engagement, employee loyalty is particularly vital. It not only enhances organizational stability but also contributes to customer satisfaction, service quality, and brand reputation (Heskett et al., 1997; Choi & Kim, 2019).

The literature often conceptualizes employee loyalty through both affective and behavioral dimensions. Affective loyalty denotes the emotional bond employees form with their organization, while behavioral loyalty reflects their willingness to stay, recommend the organization to others, or go beyond job requirements (Mowday et al., 1979; Meyer & Herscovitch, 2001). These facets are frequently linked to positive workplace experiences, including supportive leadership, perceived organizational support, fair treatment, and alignment with organizational values (Rhoades & Eisenberger, 2002; Chen & Francesco, 2003).

In service-sector small and medium-sized enterprises (SMEs), the maintenance of a loyal workforce is often challenged by high turnover, emotional exhaustion, and limited advancement opportunities (Kandampully et al., 2015). As such, the role of transformational leadership becomes increasingly important. Leaders who demonstrate vision, empathy, and individualized support have been shown to foster stronger organizational commitment, particularly when supported by robust emotional regulation mechanisms and effective internal communication strategies (Bass & Riggio, 2006; Judge & Piccolo, 2004).

Moreover, in dynamic service environments, loyal employees act as brand ambassadors, ensuring service continuity and cultivating customer trust (Caruana, 2002). Their sustained presence enhances organizational learning and culture, creating a virtuous cycle of performance and engagement. Understanding the antecedents and enablers of employee loyalty, therefore, holds significant implications for both human resource management and organizational strategy in SME contexts.

Integrative Review: Linking the Constructs

The literature suggests that transformational leadership enhances employee loyalty both directly and indirectly, with emotional regulation and organizational communication serving as key mediators. Transformational leaders foster trust, motivation, and empowerment, supporting deeper commitment and retention. Emotional regulation acts as a mediating mechanism, particularly salient in high-stress service roles, by helping employees manage emotional demands. Organizational communication, meanwhile, moderates and

amplifies the link between leadership and loyalty, reinforcing the trust and clarity necessary to sustain employee commitment (Men & Stacks, 2014; Karanges et al., 2015)1.

2.5 Integrative Framework and Research Gaps

Despite these established relationships, several gaps persist. Most prior research focuses on direct effects and overlooks the combined mediating roles of emotional regulation and communication, especially in the context of service-oriented SMEs in China (Chuang et al., 2012; Men, 2014). Methodological limitations, such as reliance on cross-sectional data and single-level analyses, further constrain the generalizability of findings. This study addresses these gaps by empirically testing a comprehensive model that integrates these variables in the unique context of Chinese service SMEs, thereby advancing both theoretical understanding and practical guidance for workforce management.

Although each construct—transformational leadership, emotional regulation, organizational communication, and employee loyalty—has been studied extensively in isolation, their joint effects remain underexplored in service-sector SMEs. Specifically:

1. **Mediating Role of Emotional Regulation**. Few studies clarify how leadership fosters loyalty via improved emotional coping (Chuang et al., 2012; Humphrey et al., 2015).
2. **Moderating Role of Communication**. The extent to which transparent, frequent communication amplifies leadership's influence on loyalty warrants further investigation (Men & Stacks, 2014; Karanges et al., 2015).
3. **Contextual Specificity**. Service-sector SMEs face unique emotional and relational challenges that may alter these dynamics (Hochschild, 1983; Hu, 2020).
4. **Methodological Rigor**. Reliance on cross-sectional, single-source surveys limits causal inference and raises common-method concerns (Podsakoff et al., 2012).

Research Gap. This study addresses these gaps by testing a model in which transformational leadership influences employee loyalty directly and indirectly through emotional regulation, with organizational communication strengthening these pathways within service-sector SMEs.

3 Methodology

3.1 Research Design

A cross-sectional, quantitative survey design was employed to test the hypothesized relationships among transformational leadership, emotional regulation, organizational communication, and employee loyalty in SMEs within China's service sector (Creswell, 2014). This design facilitates simultaneous assessment of direct and indirect effects via structural equation modeling (SEM).

3.1.1 Participants and Sampling

The study population consisted of all employees in service-sector SMEs in Shandong Province, China ($N \approx 480\ 000$). A sample size of $n = 400$ was determined to balance statistical precision (95 % confidence level; 5 % margin of error) and practical feasibility, using Yamane's (1967) formula:

$$n = \frac{N}{1 + Ne^2}$$

where e = 0.05, yielding n ≈ 400.

A stratified random sampling procedure was implemented via Wenjuanxing, ensuring proportional representation across major service sub-sectors (e.g. hospitality, retail, healthcare). Screening questions confirmed participants' current employment in an SME and their voluntary consent.

3.1.2 Instrumentation

All constructs were measured using established multi-item scales on 5-point Likert anchors (1 = "strongly disagree" to 5 = "strongly agree"):

- **Transformational Leadership** (12 items) from the Multifactor Leadership Questionnaire (Bass & Avolio, 1994), covering idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration.
- **Emotional Regulation** (7 items) adapted from Gross's (1998) emotion-regulation framework, capturing cognitive reappraisal and expressive suppression.
- **Organizational Communication** (8 items) based on Daft and Lengel (1986) and Men and Stacks (2014), assessing clarity, openness, frequency, and directional flow.
- **Employee Loyalty** (6 items) derived from Allen and Meyer's (1990) affective-commitment scale, emphasizing emotional attachment and behavioral intentions.

3.1.3 Pilot Testing and Content Validity

An initial draft of the questionnaire was reviewed by five academic and industry experts. Items judged ambiguous or redundant were revised or removed, ensuring clarity and domain relevance.

3.2 Reliability and Construct Validity

- **Reliability**. Internal consistency was assessed via Cronbach's α in SPSS 27.0. All scales exceeded α = .80 (Transformational Leadership: .88; Emotional Regulation: .84; Organizational Communication: .86; Employee Loyalty: .90).
- **Convergent Validity**. Confirmatory factor analysis in Mplus 7.0 yielded standardized loadings λ ≥ .50 and average variance extracted (AVE) ≥ .50 (Anderson & Gerbing, 1988).
- **Discriminant Validity**. The square root of each construct's AVE exceeded its highest inter-construct correlation (Fornell & Larcker, 1981).

3.3 Data Collection Procedure

Data were collected anonymously over four weeks in May 2024 via Wenjuanxing. After informed-consent screening, participants completed three sections: (1) study purpose and confidentiality notice; (2) demographics (gender, age, education, tenure, enterprise type); and (3) core scales. No personally identifying information was recorded.

3.4 Data Analysis

Analyses proceeded in two phases:

1. **Preliminary Analyses** (SPSS 27.0): Descriptive statistics, Pearson's correlations, and reliability coefficients.
2. **Structural Equation Modeling** (Mplus 7.0):
    - **Measurement Model** via confirmatory factor analysis to verify construct validity.
    - **Structural Model** to test direct and indirect effects. Model fit was assessed using χ^2/df (< 3), CFI ≥ .90, TLI ≥ .90, RMSEA ≤ .08, and SRMR ≤ .08 (Hu & Bentler, 1999).
    - **Mediation Tests** employed bias-corrected bootstrap (5 000 resamples) to evaluate indirect paths, with significance at $p < .05$.

3.5 Ethical Considerations

Participation was voluntary, anonymous, and confidential. The study protocol adhered to the Declaration of Helsinki and institutional guidelines for research with human subjects. No incentives were offered, and participants could withdraw at any time without consequence.

4 Results and Discussion

4.1 Research Results

4.1.1 Demographic Profile of Respondents

A total of 400 valid responses were collected from employees in service-sector SMEs in Shandong Province, China. The demographic breakdown is presented in Table 1.

Table 1. Demographic Characteristics of Survey Participants

Variable	Group	Frequency	Percentage (%)
Gender	Male	226	53.2
	Female	199	46.8
Education	High School or Below	59	13.9
	Associate Degree	117	27.5
	Bachelor's Degree	146	34.4
	Master's or Above	103	24.2
Age	Below 25	43	10.2
	26–35	167	39.3
	36–45	148	34.8
	46–55	46	10.8
	56 and Above	21	4.9

Variable	Group	Frequency	Percentage (%)
Work Experience	1 Year or Less	52	12.2
	1–3 Years	99	23.3
	3–5 Years	182	42.8
	6–9 Years	67	15.8
	10 Years or More	25	5.9
Job Level	Regular Staff	118	27.8
	Junior Management	131	30.8
	Middle Management	104	24.5
	Senior Management	72	16.9
Company Type	State-owned Enterprise	86	20.2
	Foreign-owned Enterprise	95	22.4
	Private Enterprise	169	39.8
	Other	75	17.6

4.1.2 Reliability and Validity Analysis

- **Reliability:** All scales demonstrated high internal consistency:
  - Transformational Leadership: $\alpha = 0.88$
  - Emotion Regulation: $\alpha = 0.84$
  - Organizational Communication: $\alpha = 0.86$
  - Employee Loyalty: $\alpha = 0.90$
- **Validity:**
  - Convergent validity was confirmed with all standardized factor loadings > 0.50 and AVE values between 0.51–0.66.
  - Discriminant validity was established as the square root of AVE for each construct exceeded its correlations with other constructs.2

4.1.3 Correlation Analysis

Table 2. Pearson's Correlations Among Key Variables

Variable	1	2	3	4
1. Transformational Leadership	—			
2. Emotion Regulation	0.52**	—		
3. Organizational Communication	0.44**	0.51**	—	
4. Employee Loyalty	0.60**	0.57**	0.50**	—

Note: p < 0.012

4.1.4 Structural Equation Modeling and Hypothesis Testing

The structural equation model demonstrated good fit:

- $\chi^2/df = 2.15$
- RMSEA = 0.05
- CFI = 0.95
- TLI = 0.93

Table 3. Standardized Path Coefficients and Significance

Pathway	β	p-value	Effect Type
Transformational Leadership → Employee Loyalty	0.58	<0.001	Direct
Transformational Leadership → Emotion Regulation	0.55	<0.001	Direct
Emotion Regulation → Employee Loyalty	0.47	<0.001	Mediating
Transformational Leadership → Organizational Communication	0.52	<0.001	Direct
Organizational Communication → Employee Loyalty	0.43	<0.001	Mediating

- **Indirect effect via Emotion Regulation:** 0.26 (significant, 95% CI excludes 0)
- **Indirect effect via Organizational Communication:** 0.22 (significant, 95% CI excludes 0)2

4.2 Summary of Key Findings

- **Direct Effect:** Transformational leadership significantly enhances employee loyalty.
- **Mediating Effects:** Both emotion regulation and organizational communication partially mediate the relationship between transformational leadership and employee loyalty.
- **Parallel Mediation:** The mediators operate independently, suggesting that transformational leaders foster loyalty by both enhancing employees' emotional coping skills and improving communication climates.

These results confirm that effective transformational leadership in SMEs not only directly increases employee loyalty but also does so indirectly by strengthening employees' emotional regulation abilities and by fostering open, supportive organizational communication.

5 Discussion

This study sheds light on the mechanisms by which transformational leadership cultivates employee loyalty in service-sector SMEs. Consistent with prior work, we found a robust direct relationship between transformational behaviors—such as articulating a compelling vision, providing individualized support, and intellectually stimulating employees—and enhanced loyalty (Bass & Riggio, 2006; Judge & Piccolo, 2004). More importantly, our data reveal that this relationship is meaningfully channeled through two complementary pathways: emotional regulation and organizational communication.

5.1 Emotional Regulation as a Psychological Resource

Transformational leaders appear to bolster employees' affective resilience by modeling adaptive emotion-management strategies and by creating a climate in which it is safe to discuss emotional challenges. This support reduces the strain of emotional labor—ubiquitous in high-contact service roles—and in turn fosters stronger affective attachment to the organization (Grandey, 2003; Brotheridge & Lee, 2002). Viewed through the lens of the Job Demands–Resources Model, emotional regulation functions as a personal resource that buffers stress and enhances commitment, explaining why employees under transformational leaders report higher loyalty.

5.2 Organizational Communication as a Structural Resource

Parallel to emotional support, transparent and frequent communication—hallmarks of transformational leadership—reinforces trust, aligns individual and organizational goals, and signals that employees' perspectives matter (Men & Stacks, 2014; Karanges et al., 2015). Rather than simply passing along directives, these leaders engage in two-way dialogues, enabling feedback loops that clarify expectations and deepen employees' sense of belonging. In effect, communication channels become structural resources that magnify the motivational impact of leadership and sustain long-term loyalty.

5.3 Integrated Mechanisms and Theory Advancement

When considered together, emotional regulation and organizational communication offer a more complete explanation of how transformational leadership drives loyalty. The serial pathway—whereby enhanced emotional resilience further facilitates open communication—suggests that these mechanisms reinforce one another to create a supportive ecosystem. This integrative finding extends Social Exchange and Leader–Member Exchange theories by demonstrating that an exchange relationship grounded in emotional and informational resources strengthens reciprocal commitment beyond the direct leader-follower bond.

5.4 Practical Implications

For managers in service-intensive SMEs, the results underscore the importance of developing both the **"heart"** and the **"voice"** of leadership. Training programs should combine modules on emotional intelligence—such as cognitive reappraisal and deep acting—with communication skills workshops that emphasize active listening, feedback delivery, and media selection. By investing in these dual competencies, organizations can create a work environment where employees feel both emotionally supported and well-informed, thereby reducing turnover and enhancing service quality.

5.5 Limitations and Future Directions.

The cross-sectional design limits causal inferences, and the focus on one Chinese province may constrain generalizability. Future research should employ longitudinal or experimental designs to track changes in loyalty over time and explore whether similar mechanisms operate in different cultural and industry contexts. Additionally, examining boundary conditions—such as employees' personality traits or organizational culture—would help identify when and for whom these mediating pathways are most salient.

In sum, this study advances both theory and practice by uncovering the intertwined roles of emotional regulation and organizational communication in translating transformational leadership into sustained employee loyalty. By embracing this multifaceted approach, service-industry SMEs can strengthen their human capital foundations and achieve a competitive edge in an increasingly demanding marketplace.

6 Conclusion

This research clarifies the mechanisms by which transformational leadership fosters employee loyalty in Chinese service-sector SMEs. The main conclusions are:

1. **Direct Influence:** Transformational leadership significantly increases employee loyalty, validating its importance in dynamic, customer-centric environments.
2. **Dual Mediation:** Emotional regulation and organizational communication both serve as pivotal mediators, either independently or in tandem, magnifying the positive effects of transformational leadership on loyalty.
3. **Practical Viability:** The study highlights actionable strategies—leadership development, emotional support, and robust communication platforms—that SMEs can implement to reduce turnover and enhance performance.

Overall, the results deepen scholarly understanding of how leadership styles and internal processes combine to foster loyalty and offer clear guidance for managers aiming to sustain a committed workforce in high-contact service sectors.

6.1 Recommendations and Suggestions

Table 2. Recommendations for Practice and Research

Area	Recommendation
Leadership Development	Implement training programs focused on transformational skills (vision, support, motivation).
Emotional Regulation Support	Offer workshops on stress management, emotional coping, and provide access to counseling services.
Organizational Communication	Develop transparent channels (briefings, feedback systems, recognition programs).
Culture of Collaboration	Facilitate team-building and shared decision-making to reinforce trust and inclusivity.

Future Research	Use longitudinal and multi-level designs; examine additional mediators (e.g., empowerment);
	Compare across regions and sectors to test generalizability.

Acknowledgments

The authors wish to thank the participating SMEs and employees in Shandong Province, as well as academic advisors and colleagues who provided feedback on the research design and analysis.

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The Impact of Ambidextrous Leadership and Organizational Innovation Climate on Innovation Performance

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Received: 4 June 2025; Revised: 7 June 2025; Accepted: 9 June 2025

Abstract

Amid rapid economic transformation and intensifying competition, continuous innovation is vital for sustainable advantage. This study examines (1) whether ambidextrous leadership—integrating open and conservative styles—affects employee innovation performance, and (2) how organizational innovation climate influences that relationship. The researcher surveyed 405 employees at new energy vehicle firms in Xi'an, China, using validated scales for open leadership, conservative leadership, innovation climate, and self-reported innovation performance. Pearson correlations and structural equation modeling tested the hypotheses. Results showed that both leadership dimensions significantly enhance innovation performance: open leadership fosters ideation and risk-taking, while conservative leadership provides the structure and resources needed for implementation. Additionally, a supportive innovation climate—marked by transparent communication, managerial encouragement, and resource availability—amplifies these effects. These findings highlight the need for leaders to balance exploratory and exploitative behaviors and for organizations to cultivate climates that encourage experimentation and collaboration. Practical recommendations include training leaders in situational ambidexterity and designing policies that reinforce open dialogue and resource support. Limitations include the cross-sectional design, self-report measures, and focus on a single industry and locale. Future research should adopt longitudinal, multi-source approaches and explore these dynamics in varied cultural and sectoral contexts.

Keywords: ambidextrous leadership, open leadership, conservative leadership, organizational innovation climate, innovation performance

Introduction

In the wake of global economic transformation—marked by heightened competition, evolving regulatory pressures, and growing environmental concerns—continuous innovation has become indispensable for firms seeking sustainable advantage (Amabile, 1996; Anderson & West, 1996). Since 2022, systemic risks stemming from volatile economic policies, energy supply disruptions, inflationary pressures, demographic shifts, and accelerating climate change have further underscored the urgency for enterprises to bolster adaptive capacity and resilience (O'Reilly & Tushman, 2013). Nowhere are these challenges more pronounced than in China's new energy vehicle (NEV) sector, where rapid regulatory reforms, aggressive sustainability targets, and intensifying market competition compel firms to both explore breakthrough technologies and exploit existing capabilities to

navigate uncertainty. Ambidextrous leadership—defined as the ability to flexibly switch between exploratory ("open") and exploitative ("conservative") behaviors—has emerged as a key mechanism for managing this paradox (Rosing, Frese, & Bausch, 2011; Andriopoulos & Lewis, 2009).

Innovation, particularly at the employee level, lies at the heart of corporate resilience and competitive renewal (Wang, 2018). Individual creative behaviors—from ideation to implementation—serve as the engine of organizational adaptability. Yet such behaviors hinge upon two interrelated factors: leadership that can simultaneously foster experimentation and enforce structure, and an organizational climate that supports risk-taking and learning. Open leadership behaviors (e.g., granting autonomy, encouraging risk-taking, stimulating idea generation) catalyze creative ideation by creating psychological safety (Zhang, Waldman, Han, & Li, 2015; Alghamdi, 2018), whereas conservative leadership behaviors (e.g., setting clear goals, monitoring progress, allocating resources) ensure systematic implementation and operational efficiency (Luo, Reilly, & Hult, 2016).

Complementing leadership, the organizational innovation climate—defined as employees' shared perceptions of support for creativity, resource availability, transparent communication, and tolerance for failure—acts as a critical catalyst that translates individual creative potential into measurable performance gains (Amabile, 1996; Scott & Bruce, 1994; Zheng, Jin, & Ma, 2009). A climate conducive to innovation fosters intrinsic motivation and reinforces employees' willingness to engage in novel initiatives (Yating, Mei, & Rong, 2024; Zhao, 2013). Xi'an, designated as a national NEV policy pilot zone, offers a representative context in which to examine these dynamics. Despite extensive research on leadership styles and innovation climate in isolation, there remains a paucity of studies examining their joint effects in high-tech, rapidly evolving industries within emerging economies.

To address this gap, the present study investigates two primary questions in NEV enterprises in Xi'an, China: (1) To what extent do the open and conservative dimensions of ambidextrous leadership influence employee innovation performance? and (2) How does organizational innovation climate condition these relationships? By integrating these constructs into a unified framework, the researcher aim to extend paradox theory—originally developed in Western, mature-industry contexts (Andriopoulos & Lewis, 2009)—to a critical emerging-economy, high-growth sector. Guided by organizational behavior theory, the researcher administered validated survey scales to 405 front-line employees and tested our hypotheses using Pearson correlation and structural equation modeling.

Preliminary results reveal that both open and conservative leadership behaviors exert significant, positive effects on innovation performance, while a supportive innovation climate amplifies these effects. These findings underscore that maximizing employee creativity and execution in volatile, technology-driven markets requires a dual approach: leadership development that cultivates situational flexibility between empowerment and control, and climate-enhancement interventions that reinforce transparent communication, resource accessibility, and tolerance for experimentation.

By elucidating the complementary and interactive roles of ambidextrous leadership and organizational innovation climate, this research contributes nuanced insights for scholars and practitioners. For academics, the study enriches the theoretical understanding of how leadership ambidexterity and contextual enablers jointly drive innovation outcomes in emerging economies. For managers, the findings inform evidence-based strategies to orchestrate leadership behaviors and organizational policies that foster sustained innovation and competitive advantage in the NEV sector and beyond.

Literature Review

2.1 Ambidextrous Leadership

Ambidextrous leadership is the capacity of leaders to manage the paradoxical demands of exploration (innovation) and exploitation (efficiency) through two interrelated behavioral dimensions: open and conservative leadership (Rosing, Frese, & Bausch, 2011; Rosing & Zacher, 2017). From a capability perspective, ambidexterity involves the flexible orchestration of contradictory activities (Andriopoulos & Lewis, 2009); from a behavioral standpoint, it reflects the simultaneous enactment of empowering and directive behaviors (Martin, Liao, & Campbell, 2013).

2.1.1 Open Leadership

Open leaders stimulate creativity by granting autonomy, encouraging risk-taking, and intellectually challenging employees (Zhang, Waldman, Han, & Li, 2015). Such behaviors foster an environment of psychological safety where novel ideas can flourish (Alghamdi, 2018) and align with transformational leadership's emphasis on inspiration and vision (Gupta, Smith, & Shalley, 2006).

2.1.2 Conservative Leadership

By contrast, conservative leaders emphasize goal clarity, progress monitoring, and resource allocation to ensure that creative ideas are systematically implemented (Luo, Reilly, & Hult, 2016). This "transactional" dimension leverages rewards and corrective feedback to maintain operational effectiveness (Kauppila & Tempelaar, 2016; Hou, Fan, & Liu, 2019). Empirical research indicates that both dimensions independently enhance innovation outcomes—open behaviors drive ideation, while conservative behaviors facilitate execution (Luo et al., 2016; Mai, Sun, & Basant, 2017). Moreover, studies in Western contexts confirm that ambidextrous leadership yields superior performance compared to unilateral styles (Rosing & Zacher, 2017), but its applicability in high-growth, regulation-intensive industries in emerging economies remains underexplored.

2.2 Organizational Innovation Climate

Organizational innovation climate refers to shared perceptions of the extent to which organizational policies, practices, and procedures support creative efforts (Amabile, 1996; Anderson & West, 1996). Key dimensions include managerial encouragement, resource availability, tolerance for failure, and open communication (Zheng, Jin, & Ma, 2009; Ran, Zheng, & Peng, 2017). **In a Chinese SME context, Ran et al. (2017) demonstrated that entrepreneurial support and cohesive innovation systems significantly boost employees' willingness to engage in novel activities.**

2.2.1 Individual-Level Effects

A positive innovation climate enhances intrinsic motivation and psychological safety, thereby stimulating employees' willingness to propose and implement new ideas (Chen, 2006; Liu, 2018). Scott and Bruce (1994) describe climate as a "direct inducement" of innovative behaviors, while Zhou and George (2001) emphasize the necessity of converting creative ideas into practical actions.

2.2.2 Organizational-Level Effects

At the collective level, innovation climate predicts team-level innovation outcomes, such as new product development and patent generation (Sui, Molina-Castillo, & Stone-

Romero, 2012; Cetindamar & Ulusoy, 2008). Amabile (1988) argues that the work environment is a critical antecedent to organizational innovation performance.

While prior studies often examine climate in isolation, the interactive effects of innovation climate and leadership ambidexterity on individual innovation performance warrant deeper investigation.

2.3 Innovation Performance

Innovation performance encompasses the generation, promotion, and realization of novel and useful ideas (Amabile, 1993; Janssen & Van Yperen, 2004). Measures vary by level:

- **Organizational Measures** include counts of new products, patents, and process improvements (Zhu, 2008; Zhang & Duan, 2010).
- **Individual Measures** typically rely on self-reported behaviors across ideation, championing, and implementation phases (Scott & Bruce, 1994; Zhou & George, 2001; Han, 2011).

Studies identify both leadership styles and innovation climate as key antecedents of innovation performance (Gu, Sevilla, & Fisher, 2014; Tu & Yang, 2020) and highlight individual-level factors such as innovation self-efficacy and job flourishing (Pan, 2020; Li, 2020).

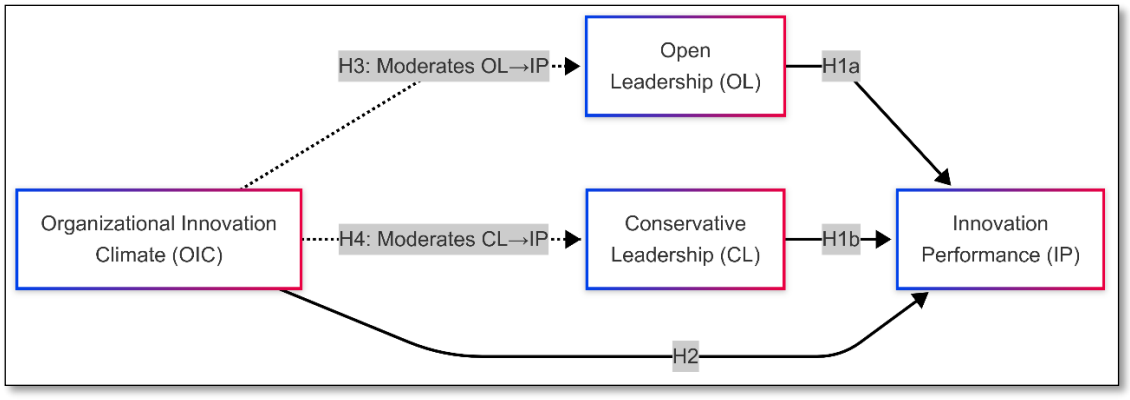
2.4 Integrated Framework and Research Gap

Although ambidextrous leadership and innovation climate each contribute to innovation performance, few studies have examined their joint effects—particularly in dynamic, emerging-economy contexts. Building on paradox theory and the componential model of creativity (Amabile, 1996; Andriopoulos & Lewis, 2009), this study adopts an integrated framework in which:

1. **Open Leadership (OL)** and **Conservative Leadership (CL)** directly influence **Innovation Performance (IP)** (**H1a–H1b**).
2. **Organizational Innovation Climate (OIC)** has a direct positive path to IP (**H2**) and also moderates both OL → IP (**H3**) and CL → IP (**H4**).

This framework, as shown in Figure 1, responds to calls for research on how leadership behaviors and contextual enablers jointly shape frontline innovation in high-tech industries within emerging economies.

Figure 1. Conceptual Framework of Leadership, Climate, and Innovation Performance



Methodology

4.1 Research Design

A cross-sectional, quantitative survey design was adopted to test the proposed relationships among ambidextrous leadership, organizational innovation climate, and employee innovation performance in China's new energy vehicle (NEV) sector (Creswell, 2014).

4.2 Participants and Sampling

The sampling frame comprised all employees (N ≈ 490,000) of NEV firms in Xi'an, China. A minimum sample size of 384 was determined using Israel's (1992) formula for large populations (95% confidence level, ±5% margin of error). Simple random sampling was implemented via an online distribution list: **invitation emails containing a survey link and two screening questions ("Are you currently employed by an NEV firm in Xi'an?" and "Do you consent to participate anonymously?") were sent through corporate HR distribution systems and WeChat workgroups**. This process yielded 405 valid responses (52.8% male; 47.2% female; M age = 34.2 years, SD = 6.3). Educational attainment ranged from high school to doctoral levels, with 63.3% holding bachelor's or master's degrees.

4.3 Measures

All constructs were measured with established multi-item scales on 5-point Likert-type anchors (1 = "strongly disagree," 5 = "strongly agree").

- **Ambidextrous Leadership.** Open leadership (7 items; e.g., "My leader encourages experimentation") was adapted from Xu (2013), and conservative leadership (7 items; e.g., "My leader enforces standard procedures") from Doll and Torkzadeh (1988). **Both scales underwent forward and back-translation by bilingual experts and were pilot-tested with Chinese NEV employees to ensure linguistic and cultural validity.**
- **Organizational Innovation Climate.** Ten items (e.g., "Resources are available for new ideas") were drawn from Tangney and Boone (2004) and refined by Zheng, Jin, and Ma (2009).
- **Innovation Performance.** Ten items capturing idea generation, championing, and implementation (e.g., "I transform new ideas into practice") were adapted from Scott and Bruce (1994) and Zhou and George (2001), as revised by Cheng (2015).

Pilot testing with three subject-matter experts confirmed content validity (IOC = 1.00). In the full sample, Cronbach's α ranged from .79 to .93 and composite reliabilities from .89 to .92, indicating satisfactory internal consistency (Nunnally & Bernstein, 1994).

4.4 Procedure

Data were collected between May and June 2024 using Wenjuanxing, an online survey platform widely used in mainland China. The questionnaire comprised (a) an informed-consent screen, (b) demographic items (gender, age, education, tenure, job level, company type), and (c) the three core scales. Participation was voluntary and anonymous, with screening items ensuring respondents were current NEV employees.

4.5 Data Analysis

Analyses were performed in two stages. First, SPSS 27.0 was used for descriptive statistics, reliability (Cronbach's α), and Pearson correlations. Second, confirmatory factor

analysis and structural equation modeling (SEM) were conducted in Mplus 7.0 to assess measurement validity (standardized loadings > .50, AVE > .36; Fornell & Larcker, 1981) and to test hypothesized paths. Model fit was evaluated via χ^2/df, CFI (≥ .90), TLI (≥ .90), RMSEA (≤ .08), and SRMR (≤ .08) thresholds (Hu & Bentler, 1999). Direct, indirect, and moderating effects were examined using maximum-likelihood estimation, with significance set at $p < .05$.

This rigorous methodology ensures both the reliability and validity of findings regarding how ambidextrous leadership and innovation climate jointly influence frontline innovation performance in an emerging high-tech industry.

Results and Discussion

6.1 Results

6.1.1 Reliability and Validity

A confirmatory factor analysis (CFA) was conducted in Mplus 7.0 to assess the measurement model. Table 1 presents internal consistency and convergent validity indicators.

- **Internal consistency**: Cronbach's α ranged from .86 (Open Leadership) to .92 (Innovation Performance), and composite reliabilities (CR) ranged from .89 to .93, all exceeding the .70 benchmark (Nunnally & Bernstein, 1994).
- **Convergent validity**: Standardized factor loadings for all items were ≥ .68 ($p < .001$), and average variance extracted (AVE) values ranged from .54 to .62, exceeding the .50 threshold (Fornell & Larcker, 1981).

These results confirm that all scales exhibit satisfactory reliability and convergent validity.

Table 1 Reliability and Convergent Validity

Construct	Items	Cronbach's α	CR	AVE
Open Leadership (OL)	7	.86	.91	.58
Conservative Leadership (CL)	7	.91	.93	.62
Innovation Climate (OIC)	10	.89	.89	.54
Innovation Performance (IP)	10	.92	.91	.60

6.1.2 Discriminant Validity and Correlations

Discriminant validity was established by verifying that each construct's AVE square root exceeded its inter-construct correlations. Table 2 reports the Pearson correlation matrix. All correlations were significant ($p < .001$) yet below .70, indicating adequate discriminant validity and no multicollinearity.

Table 2 Correlation Matrix (N = 405)

	OL	CL	OIC	IP
OL	1.00			
CL	.64**	1.00		
OIC	.62**	.64**	1.00	
IP	.63**	.64**	.64**	1.00

Note. p < .001. OL = Open Leadership; CL = Conservative Leadership; OIC = Organizational Innovation Climate; IP = Innovation Performance.

6.1.3 Hypothesis Testing

Structural equation modeling yielded good fit: $\chi^2/df = 2.38$; CFI = .95; TLI = .94; RMSEA = .055; SRMR = .045. **Table 3** summarizes the direct effects and the two interaction terms testing moderation hypotheses.

- **H1a (OL → IP):** β = .61, t = 15.3, p < .001 ✓
- **H1b (CL → IP):** β = .67, t = 13.4, p < .001 ✓
- **H2 (OIC → IP):** β = .75, t = 10.7, p < .001 ✓
- **H3 (OL×OIC → IP):** β = .12, t = 2.65, p < .01 ✓
- **H4 (CL×OIC → IP):** β = .10, t = 2.18, p < .05 ✓

The full model explained 64% of the variance in IP ($R^2 = .64$).

Table 3 Structural Path and Moderation Estimates

Predictor	β	SE	t	R^2	Hypothesis
OL → IP	.61	.04	15.3**		H1a ✓
CL → IP	.67	.05	13.4**		H1b ✓
OIC → IP	.75	.07	10.7**	.64	H2 ✓
OL × OIC → IP	.12	.05	2.65*		H3 ✓
CL × OIC → IP	.10	.05	2.18*		H4 ✓

Note. *p* < .05; **p* < .001. OL = Open Leadership; CL = Conservative Leadership; OIC = Organizational Innovation Climate; IP = Innovation Performance.

6.2 Discussion

6.1 Revisiting Research Questions

This study set out to answer two questions: RQ1 asked how open and conservative dimensions of ambidextrous leadership influence employee innovation performance, and RQ2 examined how organizational innovation climate conditions these relationships.

Consistent with our hypotheses, both open and conservative leadership behaviors exerted significant, positive effects on innovation performance, and a supportive innovation climate emerged as the strongest single predictor. These findings offer several theoretical and practical insights.

First, the positive effects of open leadership ($\beta = .61$, $p < .001$) reaffirm its critical role in fostering employees' creative ideation. By granting autonomy, encouraging risk taking, and inviting novel perspectives, open leaders create psychological safety that empowers employees to propose and experiment with unconventional ideas (Zheng et al., 2023; Li et al., 2014). Our results extend this literature by demonstrating that open leadership remains a robust driver of innovation even in highly regulated, technology-intensive contexts such as NEV manufacturing.

Second, conservative leadership also made a substantial, positive contribution ($\beta = .67$, $p < .001$), underscoring its importance in the exploitation phase of innovation. Conservative behaviors—clarifying goals, enforcing standards, monitoring progress, and providing corrective feedback—ensure that creative ideas are refined, resourced, and systematically implemented (Luu, 2019; Duan et al., 2023). While some scholars have cautioned that overly controlling leadership can stifle creativity (Gong et al., 2012), our findings suggest that when balanced with open leadership, conservative practices enhance innovation by translating ideas into tangible outcomes.

Notably, the organizational innovation climate ($\beta = .75$, $p < .001$) had a stronger effect on innovation performance than either leadership dimension, a novel insight that underscores climate as the primary catalyst in this context. This result aligns with Amabile's (1996) componential model and recent empirical work (He et al., 2024; Nazir et al., 2016), confirming that shared perceptions of resource availability, managerial support, transparent communication, and tolerance for failure create a fertile environment in which both exploration and exploitation behaviors can flourish. Importantly, a strong innovation climate appears to amplify the positive impacts of both leadership dimensions, suggesting that climate functions as a critical boundary condition for ambidextrous leadership effectiveness.

Collectively, these findings make three contributions. Theoretically, they integrate ambidextrous leadership and innovation climate into a unified model, demonstrating their complementary and interactive roles in driving frontline innovation. Methodologically, the study extends ambidexterity research into an emerging-economy, high-tech sector, thereby enhancing the generalizability of paradox theory (Andriopoulos & Lewis, 2009). Practically, the results inform NEV managers that maximizing innovation performance requires a dual approach: training leaders to flexibly alternate between empowerment and control, and cultivating an organizational climate that visibly supports experimentation and provides the necessary resources for idea implementation.

Despite these contributions, several limitations warrant consideration. The cross-sectional design precludes causal inferences; longitudinal or experimental studies could better establish temporal ordering among leadership behaviors, climate perceptions, and innovation outcomes. Second, reliance on self-report measures introduces potential common-method bias, although CFA results and procedural remedies (e.g., guaranteed anonymity) mitigate this concern. Third, the sample was drawn exclusively from NEV firms in Xi'an; future research should replicate the model across different regions, industries, and cultural settings to assess boundary conditions.

Looking forward, three avenues for future inquiry emerge. First, researchers might investigate the dynamic interplay of leadership ambidexterity and climate over time—examining how shifts in strategy or external shocks (e.g., policy changes) alter leadership-climate-innovation linkages. Second, multi-level analyses could explore how team-level climate interacts with individual perceptions to influence innovation performance. Third,

qualitative or mixed-methods approaches could unpack the micro-processes through which leaders enact ambidextrous behaviors and shape climate perceptions in practice.

In sum, this study underscores that balancing open and conservative leadership behaviors within a supportive innovation climate is essential for driving employee innovation in complex, technology-driven environments. By attending to both people-centered leadership practices and structural enhancements of the innovation climate, NEV firms—and organizations in other dynamic sectors—can more effectively harness frontline creativity and achieve sustainable competitive advantage.

Conclusion and Suggestions

7.1 Conclusion

This study examined how ambidextrous leadership and organizational innovation climate influence employee innovation performance in China's new energy vehicle (NEV) sector. Consistent with our hypotheses, both open leadership ($\beta = .61$, $p < .001$) and conservative leadership ($\beta = .67$, $p < .001$) positively affected innovation performance, confirming that autonomy-supportive behaviors drive ideation, while structure-oriented behaviors facilitate systematic implementation (Rosing et al., 2011; Luo et al., 2016). Moreover, organizational innovation climate emerged as the strongest predictor ($\beta = .75$, $p < .001$), **a novel insight underscoring climate as the primary catalyst for innovation outcomes**, by providing resources, managerial encouragement, and psychological safety necessary for translating creative ideas into performance gains (Amabile, 1996; He et al., 2024). The full model explained 64% of the variance in innovation performance, demonstrating robust explanatory power.

7.2 Practical Recommendations

Based on these findings, we offer the following **short-term** and **long-term** actions for NEV firms:

7.2.1 Short-Term Actions

1. **Leadership Flexibility Workshops:** Conduct intensive workshops where supervisors practice situational shifts between open and conservative behaviors through role-plays based on real NEV project scenarios.
2. **Innovation Roundtables:** Host monthly cross-functional forums where employees pitch ideas in a safe environment; ensure leadership attendance to signal genuine support.

7.2.2 Long-Term Actions

1. **Ambidexterity Performance Metrics:** Integrate both ideation and implementation KPIs into annual performance appraisals, with dual awards (e.g., "Best New Concept" and "Best Market Launch").
2. **Innovation Time Allocation:** Institutionalize "10% innovation time," allowing employees to dedicate a portion of their workweek to self-driven projects, monitored through light governance.

7.3 Suggestions for Future Research

To deepen understanding and generalizability, researchers should consider:

1. **Longitudinal and Experimental Designs:** Employ time-lagged or field-experiment methods to establish causal pathways among leadership behaviors, climate evolution, and innovation outcomes.
2. **Multilevel Modeling:** Use hierarchical linear modeling to examine how team-level climate interacts with individual perceptions and leader behaviors.
3. **Boundary Conditions and Mediators:** Investigate additional moderators (e.g., organizational size, industry maturity) and mediators (e.g., psychological empowerment, knowledge sharing) to refine the ambidexterity–climate–performance model in diverse contexts.

By implementing these **practical steps** and pursuing **rigorous future research**, organizations and scholars can more effectively foster sustainable innovation in dynamic, technology-driven industries.

Acknowledgments

The authors thank all participating NEV enterprises and their employees in Xi'an for contributing data to this study. The researcher also appreciates the constructive feedback from peer reviewers and the methodological guidance provided by the research support office of the Faculty of Liberal Arts, Rajamangala University of Technology Krungthep.

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Fashion Entrepreneurs: Evaluating an Experiential Learning Model in Thailand

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Received: 15 May, 2025; Revised: 26 May, 2025; Accepted: 9 June, 2025

Abstract

This study explores the effects of an experiential fashion entrepreneurship program on Thai undergraduate students' entrepreneurial development. Implemented over five months at a public university, the program engaged 40 students in hands-on learning activities including business model development, garment production, digital marketing, and a fashion showcase. Participants were mentored by practicing fashion entrepreneurs and worked in teams to create and pitch their product lines.

The research used a mixed-methods design to measure changes in students' entrepreneurial aspirations, engagement, and readiness. Quantitative data were collected through adapted instruments based on McClelland's competency framework and Hassan's motivation scale. Qualitative insights were gathered from journals, observations, and feedback sessions.

Findings indicated that students developed moderate-to-high levels of aspiration and readiness, with a significant positive correlation between engagement and entrepreneurial intent. Qualitative responses highlighted increased confidence, creativity, and motivation, though technical and time constraints posed challenges. Mentorship and team support were identified as key enablers.

This study contributes to entrepreneurship education by demonstrating how culturally relevant, practice-based models can foster motivation and competency among non-business students. It recommends that Thai universities integrate flexible, creative-industry programs to enhance entrepreneurial outcomes in alignment with national development goals.

Keywords: Entrepreneurship Education, Experiential Learning, Fashion, Thailand, Student Engagement, Entrepreneurial Readiness.

1 Introduction

Thailand's national strategy to transition toward a knowledge-based and innovation-driven economy has amplified the role of entrepreneurship within higher education. Policies such as *Thailand 4.0* and the *20-Year Higher Education Plan (2017–2036)* emphasize entrepreneurial capacity as a pathway to reduce graduate underemployment and stimulate national competitiveness (Office of the Higher Education Commission, 2018). Despite these efforts,

many Thai graduates remain hesitant to pursue self-employment. While youth unemployment in Thailand remains relatively low, underemployment and a mismatch between qualifications and job roles persist (National Statistical Office, 2022).

Universities have responded by integrating entrepreneurship education into various academic programs. However, many of these efforts remain theory-based, lacking the experiential components that foster real-world application. Prior studies show immersive, hands-on learning environments are more effective in shaping entrepreneurial behavior (Neck & Greene, 2011), particularly when combining business skills with personal development and creative problem-solving (Nabi et al., 2018; Gibb, 2011). Overcoming barriers such as fear of failure (Dhliwayo, 2008), limited networks (Linton & Klinton, 2019), or cultural reluctance (Dana, 2007) requires educational formats that build both competence and confidence through action (Ndou et al., 2018).

In this context, a fashion start-up presents a unique opportunity. Thailand's fashion and textile sector—rooted in local traditions (Chai-Arayalert & Suttapong, 2020) but increasingly shaped by digital commerce—offers an accessible and relevant industry for youth entrepreneurs.

Platforms such as TikTok, Instagram, and LINE Shop have enabled Thai students to experiment with microbusinesses, particularly in clothing and accessories (UNCTAD, 2020). However, many of these ventures remain informal or unsustainable due to limited business planning, branding, and production knowledge. As Cheewatrakoolpong and Ariyasajjakorn (2018) note, formal education must bridge the gap between creative interests and long-term entrepreneurial viability.

This study explores the outcomes of a five-month experiential fashion entrepreneurship program delivered at a public Thai university. Grounded in Kolb's (1984) experiential learning theory, the program was designed to guide students through the entire business process—from ideation and production to marketing and product launch. Students were mentored by practicing fashion entrepreneurs and worked in groups to develop and present their own brand and garment line, culminating in a fashion showcase and pitch session.

The research focuses on three key constructs: entrepreneurial aspiration, defined as students' interest and motivation to pursue business ownership; entrepreneurial engagement, which reflects their participation and emotional investment; and entrepreneurial readiness, indicating their confidence and competencies to start a business. By examining how these elements shift through experiential learning, the study offers insight into how Thai universities can design programs that not only teach entrepreneurship but cultivate it as a practical and desirable career path.

2 Literature Review

2.1 Experiential Entrepreneurship Education

Entrepreneurship education has evolved to emphasize the development of cognitive and behavioral competencies (Katz & Shepherd, 2003), that support opportunity recognition and value creation. Rooted in Kolb's (1984) experiential learning theory and Hynes' (1996) model of entrepreneurial learning, effective entrepreneurship education is understood as a cycle of action, reflection, and adaptation. It is not enough to teach theories in isolation; rather, students must apply knowledge in real-world contexts where uncertainty, creativity, and decision-making intersect (Leibowitz et al., 2010). Gibb (2011) underscored the need for pedagogies that simulate entrepreneurial conditions—namely ambiguity, innovation, and ownership—arguing that such conditions are critical to producing graduates who think and act

entrepreneurially. Jones and English (2004) proposed that entrepreneurship education should equip individuals not only with technical skills but with the self-belief and perspective necessary to pursue business opportunities. In Thailand, similar principles have been adopted by the *Thailand Education Reform Plan* and *Thailand 4.0* policy, which advocate for student-centered learning and integration of real-world challenges into the curriculum (Office of the Education Council, 2020). Despite these reforms, however, entrepreneurship education often remains textbook-driven and lacks immersive components (Cheewatrakoolpong & Ariyasajjakorn, 2018).

While formal instruction builds foundational knowledge, it does not necessarily translate into entrepreneurial aspiration, or the sustained desire to create and lead a venture. Numerous studies have found that experiential models—such as business simulations, start-up incubators, and industry-led mentorship—have a greater influence on shifting student mindset and behavior (Chang & Rieple, 2013; Nabi et al., 2018). In Thailand, where many students lack prior exposure to entrepreneurial role models or family businesses, applied learning strategies become even more critical (Lee, 2005). These strategies enable students to develop entrepreneurial engagement, moving beyond passive interest to active exploration, experimentation, and networking. Linan, Rodriguez-Cohard, and Rueda-Cantuche (2011) argued that when students interact with real business environments, their confidence to pursue entrepreneurship increases. Likewise, Nabi et al. (2018) emphasize that entrepreneurial learning is driven by two forms of inspiration: theoretical, which arises from academic inputs and discussions; and practical, which stems from direct interaction with entrepreneurial tasks. For example, students asked to launch a micro-venture or develop a product prototype often experience significant shifts in entrepreneurial identity. These shifts, when scaffolded by supportive mentors and structured reflection, contribute to stronger entrepreneurial readiness, which refers to an individual's perceived capability to act on entrepreneurial intentions.

In Southeast Asia, there is growing recognition that one-size-fits-all models of entrepreneurship education are insufficient. National differences in economic structure, labor markets, and educational culture shape how programs must be localized. Thailand faces a unique mix of challenges and opportunities. While digital tools and social media platforms have expanded entrepreneurial access, traditional hierarchies and academic rigidity often prevent full adoption of experiential models (UNCTAD, 2020). Integrating informal learning pathways into university programming remains a policy and design challenge, especially in public institutions. McClelland's (1985) study on entrepreneurial behavior introduced 13 personal competencies—such as initiative, persistence, problem-solving, and strategic planning—that remain core to the definition of entrepreneurial readiness. These competencies must be cultivated through repetition, failure, mentorship, and critical feedback. Studies in both Western and Asian contexts confirm that entrepreneurial behavior emerges not from knowledge alone, but from behavior rehearsal in real or simulated conditions (Bird, 1998; Rasmussen & Sørheim, 2006). The higher education programs in Thailand, however, many entrepreneurship modules still emphasize case studies and theoretical frameworks, or very little public exposure such as consignment, commercial-based international fair approach, limiting opportunities for students to acquire these practical competencies through meaningful trial-and-error (Cheewatrakoolpong & Ariyasajjakorn, 2018).

Mentorship emerges as a particularly valuable feature in experiential entrepreneurship education. Chang and Rieple (2013) demonstrated that live projects involving real business owners accelerate entrepreneurial skill development and increase students' confidence. Such mentorship bridges the gap between classroom learning and professional practice, while also providing access to industry networks and funding ecosystems. In Thailand, partnerships

between universities and creative industries, such as design, crafts, and fashion, are increasingly used to contextualize entrepreneurship for students in non-business fields (OECD, 2021).

2.2 Fashion Entrepreneurship as a Learning Context

Fashion is an ideal pedagogical medium for entrepreneurship training due to its cross-disciplinary nature and cultural relevance. It combines creative expression with market dynamics and enables students to experience the full business cycle—from product ideation and branding to pricing and promotion. The fashion sector also intersects with cultural preservation and tourism, providing students with locally meaningful opportunities for innovation. Traditional Thai textiles, for instance, are being reimagined through contemporary design to attract domestic and global markets (Chaiyawat & Phongpaichit, 2021).

Yet despite fashion's growing relevance, few entrepreneurship programs in Thailand leverage it as a formal learning context. Zhang, Duysters, and Cloodt (2013) noted that most entrepreneurship education research focuses on general business content, with limited attention to creative industries. This gap is critical, especially given the increasing number of Thai students engaged in informal fashion commerce through digital platforms like Instagram, Facebook Marketplace, and TikTok Shop. Although these platforms make it easier to get started, they don't replace the need for deeper knowledge in areas like pricing, production planning, brand development, or managing customer relationships. Without clear direction or support, many of these small ventures struggle to grow and often shut down early.

The development of entrepreneurial aspiration, engagement, and readiness in fashion contexts requires intentional program design that integrates creative processes with entrepreneurial thinking. This includes hands-on workshops in design and production, as well as e-commerce training, mentorship with local entrepreneurs, and structured peer collaboration. Programs that situate fashion entrepreneurship within the wider goals of economic inclusion and sustainable development, such as those aligned with the Bio-Circular-Green Economy model (Reim et al., 2019), resonate with Thailand's broader policy goals. While research on entrepreneurship education in Thai universities is expanding, there remains a paucity of studies examining domain-specific interventions. This study contributes by evaluating a fashion-focused, practice-based entrepreneurship program that not only reflects the realities of the local creative economy but also empowers students through tangible, culturally relevant outcomes. This study looks at aspiration, engagement, and readiness not as a single measure, but as related parts of the learning process. Framing them this way gives a clearer view of how entrepreneurship education is taking shape in Thailand's changing university landscape.

3 Research Methodology

The mixed-methods design was used to investigate the outcomes of a fashion entrepreneurship program on students' entrepreneurial aspiration, engagement, and readiness. The approach allowed for quantitative measurement alongside qualitative insights from participants' lived experiences throughout the program.

3.1 Participant Selection

The research was conducted at CIDI Chanapatana Design Institute in Thailand during 2024 (from 07/2024 to 09/2024), with 5 months of intensive training including coursework and a project-based approach, leading to a fashion show for public attention and a collaborative pop-up store in the Icon Siam department store within 30 days month on December 2024. Purposive

sampling selected 40 undergraduate students enrolled in an entrepreneurship project-based course, the English program. Participants represented various fields of study, including fashion design, textile design, and fashion marketing and merchandising. A screening process was conducted: 1) A semi-structured interview assessing interest and motivation for entrepreneurship, 2) A basic sewing proficiency test to evaluate readiness for hands-on fashion production. Only students who met the minimum requirements and committed to the five-month program were included.

3.2 Instruments for Quantitative Data

Three quantitative instruments were employed to assess students' entrepreneurial development. The first was the Entrepreneurial Readiness Questionnaire, adapted from McClelland and McBer & Co. (1985). This instrument measured 13 personal competencies commonly associated with entrepreneurial behavior, including initiative, systematic planning, problem-solving, efficiency orientation, and persistence. It consisted of 50 items rated on a 5-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

The second instrument was the Aspiration and Engagement Scale, adapted from Hassan (2007). This tool assessed students' interest in pursuing entrepreneurial careers (aspiration) and their emotional and behavioral involvement in the program (engagement). The scale comprised 16 items in total—5 items measuring aspiration and 11 measuring engagement—using a 5-point scale from 1 (Not Capable) to 5 (Very Capable).

The researchers developed the third instrument, the Program Implementation Evaluation, to measure participants' perceptions of the program's quality, relevance, and overall delivery. It included 25 items, each rated on a 5-point Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree). For data interpretation, mean scores were categorized as follows: low (1.00–2.33), moderate (2.34–3.66), and high (3.67–5.00). The reliability of all constructs was assessed using Cronbach's alpha, as shown in Table 2.

Table 2 – Reliability of All Constructs

Construct	Number of Items	Cronbach's Alpha
Entrepreneurial Aspiration	5	.79
Entrepreneurial Engagement	11	.76
Entrepreneurial Readiness	50	.87
Program Implementation Evaluation	25	.90

3.3 Qualitative Data and Thematic Structure

In parallel, qualitative data were collected through: 1) Ongoing participant observations; 2) Mentor feedback; 3) Group debrief sessions after each program phase; 4) Participant journals submitted at program conclusion. These sources were guided by a thematic framework focusing on students' emotional, behavioral, and cognitive experiences during the program. Table 3 outlines the domains explored.

Table 3 – *Key Concepts and Focus of Qualitative Questions*

Key Concept	**Focus Questions/Prompts**
Motivation and Aspiration	*What inspired you to join this program? Do you see yourself as an entrepreneur?*
Learning Engagement	*Which parts of the program were most meaningful or*

	challenging for you?
Skill Development	*What new skills have you gained (technical, planning, communication)?*
Barriers and Enablers	*What challenges did you face? What helped you stay involved?*
Confidence and Future Readiness	*How do you feel about running a business after this experience?*
These themes were used to code participant reflections and group feedback, supporting triangulation with quantitative results.	

3.4 Data Analysis

SPSS was used for quantitative analysis. Descriptive statistics summarized mean scores across constructs, while Pearson's correlation examined relationships between aspiration, engagement, and readiness. For the qualitative strand, data were transcribed and coded thematically based on Table 3. Patterns were identified and cross-referenced with quantitative findings to provide depth and explanation of student outcomes.

4 Research Findings

4.1 Quantitative Results

The study sample consisted of 40 Thai undergraduate students from various academic programs. The distribution by gender is shown in Table 4. The sample was predominantly female.

Table 4 – Gender Distribution of Respondents

Gender	Frequency (n)	Percentage (%)
Male	4	10.0%
Female	36	90.0%

As shown in Figure 1, most respondents had been exposed to entrepreneurship education (80%) in theory and related training (75%) also in theory before the program. However, just over half had actual entrepreneurial experience (52.5%), primarily in informal fashion-related online sales through family business, very small, and joint projects with friends.

Figure 1 – Respondent Background in Entrepreneurship

	Yes	***No***
Entrepreneurship Course	32	8
Training Participation	30	10
Business Experience	21	19

Table 5 presents the descriptive statistics for the four key constructs measured. Participants reported high levels of **readiness** (M = 3.82), positive **evaluation** of the program (M = 4.01), moderate-to-high **aspiration** (M = 3.62), and moderate **engagement** (M = 3.35).

Table 5 – Mean and Standard Deviation of Key Constructs

Construct	*Mean*	Standard Deviation
Entrepreneurial Aspiration	*3.62*	0.59
Entrepreneurial Readiness	*3.82*	0.27
Entrepreneurial Engagement	*3.35*	0.34
Program Implementation Score	*4.01*	0.45

Further analysis of the 13 readiness sub-constructs (*Table 6*) indicates that students scored highest in *information-seeking*, *task commitment*, and *efficiency orientation*. The lowest scores were in *persuasion* and *self-confidence*, suggesting areas for development.

Table 6 – Mean and Standard Deviation of Readiness Constructs

Readiness Competency	**Mean**	***Standard Deviation***
Initiative	3.64	0.37
Opportunity Seeking	3.93	0.42
Persistence	3.87	0.41
Information Seeking	4.13	0.41
Quality Orientation	4.04	0.42
Task Commitment	4.08	0.33
Efficiency Orientation	4.11	0.39
Systematic Planning	4.05	0.40
Problem Solving	3.77	0.36
Self-Confidence	3.61	0.59
Assertiveness	3.64	0.46
Persuasion	3.44	0.47
Influence Strategy	3.71	0.49
Correlation analysis (*Table 7)* revealed a significant positive relationship between entrepreneurial engagement and aspiration (r = .374, $p < .05$). However, no statistically significant correlation was found between program participation and either aspiration or readiness.		

Table 7 – Pearson Correlation Between Key Constructs

Variable	Aspiration	Readiness
Entrepreneurial Engagement	.375*	.217
Program Implementation Score	.269	.067
*$p < .05$ (2-tailed)		

4.2 Qualitative Result

Observational and journal data revealed a range of student experiences throughout the five-month program. Enthusiasm was particularly high during the initial seminar and branding workshops, where students collaborated on naming, logo design, and digital marketing strategies for their group businesses. These activities fostered strong engagement, especially as students saw their concepts take visible shape on platforms like Instagram. As one student

reflected, *"Creating the logo made it feel like our brand was real, not just a class task."*

Greater challenges emerged during Phase 3, which required students to produce a garment aligned with the theme "Contemporary Thai Eveningwear." Scheduling conflicts and varying levels of sewing proficiency impacted participation during this stage. Some participants admitted feeling discouraged: *"I used a sewing machine before, but normally I do not have that stress on timeline-commitment, and by reaching the deadline, it was frustrating at first,"* shared one student. However, strong team dynamics and mentor support helped many continue. Several mentors opened their studios on weekends or provided virtual consultations. *"Our mentor did not let us give up easily. She reminded us why we started,"* another student recalled.

By the end of the program, all students were fully engaged again. Each group completed their garments and delivered business pitches at the final fashion show, as well as the projection for consignment at a department store. Several students said that presenting their work in front of others changed how they saw themselves. The results were impressive—many of the final pieces showed a level of creativity and quality that went beyond what was expected, especially given the short timeline and the students' varied academic experience. The most responses to: *"Even though I'm not ready to start a full business yet, I now know the first steps—how to register, how to price, and how to build a small brand online, especially understand about the importance of team work or organization*.," and "*The fashion show, and the consignment opportunity in leading department store made me realize I created something from zero. Presenting my product to the panel gave me a level of confidence I didn't have before.*"

Three core themes emerged from the qualitative data for entrepreneurial aspiration, engagement, and readiness, which mirrored the quantitative constructs measured. Student responses demonstrated increasing confidence, motivation to pursue entrepreneurship, and the acquisition of practical business and creative skills. The quotes that follow illustrate these key themes in students' voices.

5 Discussion

This study investigates how a five-month experiential fashion entrepreneurship program shaped Thai undergraduates' entrepreneurial aspiration, engagement, and readiness. The findings confirm that project-practice-based, culturally relevant learning environments can foster both motivation and skill development among non-business students.

Participants reported high levels of entrepreneurial readiness (M = 3.82), particularly in competencies such as information seeking (M = 4.13), task commitment (M = 4.08), and efficiency orientation (M = 4.11) (Table 6). These outcomes suggest that the program supported key behavioral attributes often associated with successful entrepreneurs. Prior studies show that entrepreneurial competencies are strengthened through experience-based projects where students must take initiative and respond to real constraints (Man, Lau, & Chan, 2002; Mitchelmore & Rowley, 2010). However, lower scores in persuasion (M = 3.44) and self-confidence (M = 3.61) indicate that interpersonal abilities require more structured development—an issue particularly noted in Asian higher education settings where risk-aversion and hierarchical norms may inhibit expressive learning (Chen, Greene, & Crick, 1998).

Students who were more involved in the activities tended to express more substantial interest in starting a business. This pattern was supported by the data ($r = .375$, $p < .05$; Table 7), pointing to a link between participation and personal drive. This aligns with research by Fayolle and Gailly (2015), who argue that engagement in experiential tasks, rather than content alone, is what drives shifts in entrepreneurial mindset (Kaffka& Krueger, 2018). Conversely,

no significant correlations were found between program implementation and aspiration or readiness. This may reflect external constraints such as scheduling challenges and limited technical preparation, both of which were identified in student journals and group debriefs. Gielnik et al. (2015) similarly noted that while training programs can enhance competencies, time, mentor quality, and alignment with student availability greatly influence outcomes.

The qualitative feedback helped shed light on the patterns observed in the results. Many students were most engaged during the early brand-building sessions, where they worked together on naming their labels, designing logos, and planning how to present their products. This part of the program seemed to help them connect with the idea of entrepreneurship on a more personal level (Rae, 2005). As the course moved into the garment-making stage, participation began to dip. Students pointed to tight academic schedules and varying levels of sewing ability as reasons for falling behind. Similar challenges have been noted in other studies, where hands-on programs struggle to keep students involved without enough guidance or support for technical tasks (Nabi & Holden, 2008). Mentor involvement played a critical role in sustaining participation (Hudson, 2013). Students frequently cited mentors as motivators who provided emotional support, technical advice, and reminders of group purpose. Such mentorship aligns with the conclusions of Lepoutre and Valente (2012), who emphasize that near-peer or practitioner guidance enhances persistence in real-world entrepreneurship simulations.

By the final showcase and pitch session, all participants had re-engaged. Student reflections described a shift in confidence and entrepreneurial identity: *"Even though I'm not ready to start a full business yet, I now know the first steps…"* This transformation aligns with experiential learning theory, particularly the process of reflection-on-action (Boud, Keogh, & Walker, 1985). Presenting their work at the final exhibition gave students a chance to see their efforts acknowledged beyond the classroom. It offered a sense of validation and helped them see the practical value of what they had created. While not every outcome reached statistical significance, the program clearly supported growth in aspiration and engagement, largely through hands-on learning and the steady presence of mentors. These findings support broader calls to embed experiential, culturally contextualized entrepreneurship education (Martinelli, 20024) into undergraduate curricula, especially in design and creative fields where tangible outputs can reinforce entrepreneurial confidence and behavior (Pittaway & Cope, 2007,).

6 Conclusion and Recommendations

This study examined how an experiential fashion entrepreneurship program influenced Thai undergraduate students in terms of aspiration, engagement, and readiness. The results indicated high readiness in planning and task-related competencies, and a clear link between engagement and entrepreneurial aspiration. Students shared that branding work, mentor support, and the final fashion showcase contributed to their motivation and confidence, especially with a commercial project-based work. At the same time, limited interpersonal development and time constraints affected participation during production phases. The study was limited by its sample size, with only 40 students, a short duration of 5 months, and a focus on one institution. Future research should involve more diverse participants and explore similar experiential programs in other creative fields such as crafts, digital media, or hospitality.

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The Influence of Work Values on Employees' Green Behavior in Technology Enterprise: Mediating Roles of Climate and Motivation

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Received: 9 June, 2025; Revised: 14 June, 2025; Accepted: 15 June, 2025

Abstract: This study takes perceived green motivation and green psychological climate as intermediaries to explore the relationship between work values and employees' green behavior. Structural equation model (SEM) and questionnaire survey data of Huawei employees were used to study the impact of values on green behavior. This study investigates the relationship between these factors and how they affect employee behavior. Green behavior refers to a series of environmental actions taken by individuals or organizations in their daily lives, aimed at reducing the negative impact on the environment and promoting sustainable development. 363 respondents from China's Huawei provided data through online and offline surveys. The results show that green psychological atmosphere and perceived green motivation play an intermediary role between work values and employees' green behavior. This finding provides suggestions for Huawei to cultivate green behavior, encourage team cooperation, develop green corporate culture, and formulate effective training and incentive plans.

Keywords: green behavior, green psychological climate, perceived green motivation, work values

1.Introduction

Despite the growing recognition of the importance of Employee Green Behavior (EGB) in sustainable corporate development, several research gaps persist. These include insufficient studies on the direct link between work values and EGB, particularly how different types of work values (e.g., achievement orientation, teamwork, innovation) influence specific green behaviors. Additionally, the mechanisms through which green psychological climate and perceived green motivation mediate the relationship between work values and EGB are not fully understood, with a need for more detailed exploration of their dimensions and interactions. Furthermore, there is a lack of cross-cultural and cross-industrial studies, limiting the generalizability of findings, and a scarcity of research on effective intervention measures and strategies to enhance EGB through human resource management and organizational policies. Addressing these gaps will provide a more

comprehensive understanding of the factors and mechanisms that drive employees' green behaviors and offer practical guidance for promoting sustainability across diverse contexts.

This study investigates the impact of work values on Employee Green Behavior (EGB) at Huawei, a global leader in information and communications technology with a strong commitment to sustainability. By examining the dual mediating roles of green psychological climate and perceived green motivation, the research aims to understand how work values influence EGB. Huawei's extensive efforts in energy conservation, emission reduction, and green design, along with its numerous environmental certifications, provide a robust context for this study. The research, grounded in self-determination theory and person-environment fit theory, seeks to uncover the complex relationships and mechanisms that drive employees' green behaviors, contributing to both corporate and societal sustainable development.

The purpose of this study is to explore the influence of work values on green behavior of employees in Huawei, especially the moderating effect of green psychological atmosphere and perceived green motivation. By applying self-determination theory, the study will analyze how work values directly promote environmental behavior by improving employees' intrinsic and extrinsic motivation; At the same time, with the help of the individual-environment matching theory, this paper explores how the green psychological atmosphere and perceived green motivation enhance or regulate the connection between work values and green behavior, so as to provide practical suggestions for optimizing green behavior in technology enterprises through management practices.

2. Theory &Literature review

2.1 Self-Determination Theory

Self-Determination Theory (SDT) explores how individuals pursue and achieve goals, emphasizing the importance of satisfying three basic psychological needs: autonomy, competence, and relatedness (Gagne & Deci, 2005). These needs are fundamental to human motivation and behavior regulation. SDT also distinguishes between intrinsic and extrinsic motivation. Intrinsic motivation arises from personal interest and enjoyment, while extrinsic motivation is driven by external rewards or pressures. However, extrinsic motivation can be internalized through processes like acknowledgment and integration, transforming it into autonomous motivation. Successful internalization allows individuals to experience autonomy and satisfaction akin to intrinsic motivation. Conversely, failure to internalize extrinsic motivators can lead to controlled motivation, where actions are driven by external pressures or internal conflicts rather than genuine self-determination (Zhang, 2019). This undermines autonomy and reduces the quality of goal pursuit.

In summary, SDT highlights the importance of fulfilling autonomy, competence, and relatedness to foster intrinsic motivation and self-determined behavior. It also

underscores the potential for internalizing extrinsic motivation to achieve similar outcomes, provided individuals can align external influences with their internal goals and values.

2.2 Person-Environment Fit Theory

Person-Environment Fit Theory is crucial in Human Resource Management, focusing on the alignment between individuals and their organizational environment and its impact on employee attitudes, behaviors, and organizational effectiveness. The theory posits that when personal traits like skills, values, and knowledge align with organizational culture and job demands, it leads to higher job satisfaction, commitment, and performance, enhancing organizational stability and growth. As globalization increases, individuals prioritize cultural fit when choosing employers, and organizations similarly value alignment with their culture during recruitment. This fit extends beyond selection, influencing the entire employee lifecycle and fostering relational psychological contracts based on mutual trust and shared visions, which enhance organizational citizenship and innovation.

Conversely, a poor fit can lead to disengagement and high turnover, harming both employee well-being and organizational performance. To improve fit, organizations can strengthen cultural alignment, offer tailored training, and maintain open communication channels. In high-tech companies, where innovation and sustainability are often emphasized, aligning employee values with organizational green practices can promote environmentally friendly behaviors. However, individual differences necessitate personalized approaches to training and incentives to foster alignment with organizational sustainability goals. Overall, Person-Environment Fit Theory is dynamic, requiring organizations to adapt to changing environments and employees need to maintain alignment and support mutual development.

2.3 Variables

2.3.1 Work Values

The definition and understanding of work values can be summarized from three main perspectives: First, from the perspective of needs, work values reflect an individual's intrinsic needs and goals to be achieved in their professional life (Super, 1970; Schwartz, 1999). Secondly, from the perspective of judgment, work values serve as a standard for evaluating work outcomes, used to judge the right and wrong of work behaviors (Elizur, 1984; Robbins, 1993). Lastly, from the perspective of preferences, work values embody an individual’s preferences concerning job satisfaction and goals, emphasizing the orientation towards personal emotions and fulfillment (Zytowski, 1970; Pryor, 1979). These viewpoints together form a multidimensional understanding of work values, revealing their core role in professional behavior and decision-making.

While scholars have not reached a unified definition of work values, they agree that work values represent employees' understanding of the meaning of work. They serve as standards for choosing goals and guiding actions, maintaining a degree of persistence and stability, and evolving over time. Considering the subject of study, this paper adopts a comprehensive concept that combines the perspectives of needs,

judgments, and preferences, viewing employees' work values as stable beliefs about work principles and needs after assessing their own traits and capabilities. These are standards used to judge various aspects of work and must be demonstrated through individuals' work attitudes and behaviors.

2.3.2 Employee Green Behavior

"Green behavior," also known as "environmental organizational citizen behavior" or "pro-environmental behavior," refers to all actions that promote environmental conservation (Unsworth, 2013). In recent years, scholars have incorporated the factor of green behavior into organizational management, examining employee green behaviors from different perspectives. This has introduced various related concepts such as Sustainable Behavior (SB), Pro-Environmental Behavior (PEB), Low-Carbon Behavior (LCB), and Green Behavior (GB) among others. Combining individual green behaviors with the workplace domain has led to a new concept—employee green behavior. People regard green behavior as environmentally significant, hence also termed pro environmental behaviors, requiring individuals to have a positive environmental impact, or at least minimize their negative impact on the environment. Currently, definitions of green behavior among scholars vary. (Ramus & Steger, 2000) suggest that employee green behavior is related to eco-initiative, meaning that it consists of voluntary actions by employees that improve organizational environmental performance, such as reusing wastepaper, reducing environmental pollution, and enhancing the ecological surroundings. This definition, however, is somewhat limited as it only emphasizes behaviors that impact organizational environmental performance, overlooking actions like sharing environmental knowledge among employees or proposing environmental suggestions to the organization, which do not directly affect organizational environmental performance (Ramus & Steger, 2000). Employee green behavior should encompass all workplace behaviors beneficial to the environment, influenced by the self-awareness of employees as proactive actions. This definition highlights that employee green behavior is not mandated by the organization but is willingly undertaken by employees from within (Boiral, 2009). Employee green behavior can be seen as all measurable pro-environmental actions taken by employees, encompassing both organizational deterioration and the promotion of environmental improvement. This definition includes the characteristics of autonomy, scope limitation, comprehensiveness, and measurability of behavior. However, this definition still has areas worth further research; indeed, a significant part of employee green behavior, such as the sharing of environmental knowledge among employees, is difficult to measure directly (Ones, 2012). According to Ones and others, such immeasurable employee green behaviors are not easily included in studies, which can seem somewhat one-sided. Employee green behavior is an active undertaking of pro-environmental actions within the workplace (Lu et al., 2016), including both spontaneous environmental behaviors by employees and those required by the organization to enhance its environmental performance. The definition by Boiral and others anticipates a broader spectrum, including both spontaneous actions by employees and those demanded by the organization, stressing that any workplace behavior beneficial to environmental

protection or organizational performance enhancement can be defined as employee green behavior (Boiral & Paillé, 2012). Based on existing research, this paper defines employee green behavior as: all pro-environmental activities undertaken by organizational members to protect the environment or improve organizational environmental performance. This definition includes both required green behavior (RGB) and voluntary green behavior (VGB); it encompasses green behaviors related to work as well as those unrelated to work.

2.3.3 Green Psychological Climate

Organizational climate is described as the initial impression experienced by employees within an organizational context, commonly summing up employees' perceptions of organizational policies, procedures, and practices (Ostroff et al., 2005). Early research suggested that organizational climate was determined by objective factors such as organizational size, span of management, and hierarchy (Becker & Gerhart, 1996). However, current studies mainly focus on employees' perceptions and subjective interpretations of organizational policies (McGregor, 1960). Although scholars continue to discuss whether the climate is shaped by individual characteristics or organizational factors, the distinction between organizational climate and psychological climate is widely recognized (Ostroff et al., 2005; Schneider et al., 2013). Organizational climate is a variable at the organizational level, encompassing the shared feelings and perceptions of all employees within the organization. Psychological climate, on the other hand, is an individual-level variable, conceptualized and measured from the perspective of individual dimensions and perceptions, referring to an individual employee's perceptions and evaluations of the organizational environment, reflecting the importance of organizational characteristics for both the individual and organizational development (Ji, 2016). Psychological climate can be defined as an employee's perception of organizational policies (James et al., 2008). Only when a strong consensus is formed among individual perceptions of the climate can these perceptions be aggregated to form an organizational climate (Bowen & Ostroff, 2004; James et al., 2008). Overall, organizational climate is the collective, summarizing perception system of the entire organizational membership regarding the organizational environment (Schneider, 1975), reflecting the interaction between organizational features and individual characteristics of employees. There are two processes—the organizational process and psychological process—between independent objective variables like organizational size and dependent subjective variables such as individual perceptions (Indik, 1965). Past studies have shown that organizational climate is a response to organizational processes, and psychological climate is a response to psychological processes, with both influencing each other (Indik, 1965).

Since psychological climate refers to an individual's perception and evaluation of the organizational environment, the sub-concept of green psychological climate is generally viewed by academia as employees' perceptions and interpretations of organizational policies, procedures and practices that sustain environmental sustainability (Dumont et al., 2017; Norton et al., 2014). If employees have similar perceptions and views about the company's goals, policies, and work environment, they

are likely to work together towards the company's vision (Robertson & Barling, 2017). The green psychological climate "is the employees' perception of the pro-environmental policies, processes, and practices that reflect the organization's green values," highlighting the significant impact of corporate environmental policies on both individual employees and corporate green development (Dumont et al., 2017). Thus, this paper defines the green psychological climate as employees' perceptions and views on a series of environmental measures adopted by their organization.

2.3.4 Perceived Green Motivation

Motivation refers to the force that drives the advancement and development of employee work, careers, etc., and in social science research, it is similar to motivation. It was first proposed by the American psychologist Woodworth and applied to psychology, referring to the psychological tendency or internal driving force that motivates and maintains an agent's actions and can direct actions towards a specific goal (Woodworth, 1918). Intrinsic motivation is a direct manifestation of personal subjective initiative, arising from needs and serving as the reason for human behavior (Peng, 2021). In the field of psychology, theories on intrinsic motivation mainly include instinct theory (McDougall, 1926), drive theory, self-determination theory (Deci, 1987), attribution theory, and needs theory (Maslow, 1943). In the field of human resource management, scholars prefer to study employee intrinsic motivation from the perspective of self-determination theory, defining it as an internal force that can inspire individual behavior and determine the method, intensity, and duration of subsequent behaviors (Zhou & Zhang, 2018). In discussing the relationships between environmental ethics, institutional environment, management support, and green behavior in Malaysian food manufacturing companies, the concept of employee green motivation was introduced for the first time, linking it to the field of green environmental protection. This concept, referring to the tangible and intangible forces that can motivate and drive employees towards green behaviors, shares similarities with green motivation and green passion (Junsheng, 2020). Past research has shown that enterprises can motivate employees by rewarding, recognizing, and praising them, or when employees perceive organizational support and encouragement, filling them with the drive to engage in positive behaviors (Jackson et al., 2011). Based on the literature above, this study defines perceived employee green motivation as the drive felt by employees when they perceive organizational support for their environmental work or receive recognition, praise, or rewards for their conservation efforts, filling them with the motivation to engage in environmentally friendly behaviors.

3.Conceptual Model and Research Hypothesis

3.1 Conceptual Framework

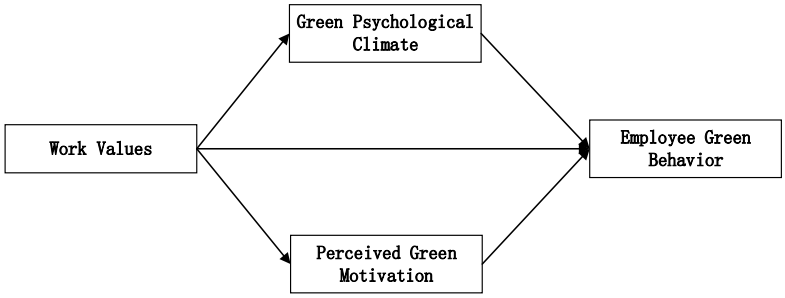


Figure 2.1 Theoretical Model Diagram

3.2 Research Hypotheses

H1: Work values positively affect employee's green behavior in Huawei Enterprise.

H2: Employees' green psychological climate has a positive predictive relationship with green behavior and work values in Huawei Enterprise.

H3: Employees perceived green motivation has a positive predictive relationship with green behavior and work values in Huawei Enterprise.

4.Research Design

4.1 Research Tools

To ensure the reliability and validity of the survey, the scales selected for this study are derived from well-established instruments both domestically and internationally, which have been utilized by many authoritative journals and scholars and are recognized for their high reliability and validity. In view of the innovative aspects and specific circumstances of this research, the items were appropriately adjusted without altering the core content. Considering linguistic differences, all English scales were subjected to a translation and back-translation procedure. Initially, the scales were translated into Chinese collaboratively by language professional master's students and researchers. Subsequently, a teacher with overseas academic experience and some familiarity with the field of employees' green behavior was invited to compare the translated scales with the original ones. Discussions and deliberations on expressing nuances were repeatedly conducted, and adjustments were made multiple times to ensure that the Chinese versions faithfully reflected the connotations of the English originals. The scales involved in this research on work values, green psychological climate, perceived green motivation, and employee green behavior all utilized a 5-point Likert scale to measure the correspondence between the respondents and the items described: 1 being strongly disagree, 2 somewhat disagree, 3 neutral, 4 somewhat agree, and 5 strongly agree.

4.1.1 Work Values Scale

The scales measuring work values are abundant both domestically and internationally. The author selectively reviewed existing scales based on the content and structure of work values, opting for the Employee Work Values Scale developed by Hou Jufang and others. This scale was published in 2014, developed for employees in the Chinese context through a standardized method and process, and it aligns closely in terms of timeliness and adaptability with the subjects of this research. The scale consists of 20 items. It has been cited by scholars such as (Hou, 2014), (Yu & Hu, 2015) and (Wang et al., 2017), providing a strong empirical foundation with its high reliability and validity.

4.1.2 Employee Green Behavior Scale

Employee Green Behavior: This scale, developed by Kim, includes six items. Kim distilled specific environmentally sustainable behaviors that employees should adopt at work, based on practical situations. The scale formally and concretely lists these behaviors. The specific items include "I avoid unnecessary printing to save paper," "I bring my own cup to reduce the use of disposable paper cups," "I prefer using stairs instead of the elevator," "I reuse paper in the office," "I recycle items that can be reused at work," and "I sort recyclable waste into different bins".

4.1.3 Green Psychological Climate Scale

Green Psychological Climate: The measure uses the scale developed by scholars (Norton et al., 2014) to gauge individuals' perception of their organization's environmental practices. This scale encompasses five items, namely: "I believe my company is concerned about its environmental impact," "I believe my company supports environmental causes," "I believe my company considers environmental protection important," "I believe my company is concerned about becoming more eco-friendly," and "I believe my company wants to be seen as being beneficial to the environment." Employees evaluate their company based on these items.

4.1.4 Perceived Green Motivation Scale

Employee Perceived Green Motivation Scale: Utilizes a scale developed by (Jun, 2020) and modified for the purposes of this study, consisting of five items, such as "Our company provides employees with incentives or rewards to encourage our environmentally friendly behaviors," for employees to evaluate the green motivation perceived after being incentivized by the company.

4.2 Research Methodology

Based on the self-determination theory and the individual-environment matching theory, this study aims to explore how the three variables of work values, green psychological atmosphere and perceived green motivation jointly affect the green behavior of employees in Huawei. In order to evaluate the validity of each construct,

we conducted sampling adequacy. Data collection combines both online and on-site surveys to improve sample representativeness and data reliability. After data collection, SPSS software was used for data processing and analysis, including descriptive statistics, reliability and validity testing, correlation analysis and Structural equation modeling (SEM), to verify the validity of the research hypothesis. By introducing control variables, we accurately assess the influence of independent variables on dependent variables, explore the mechanism of mediation variables, and verify the robustness of the model through appropriate statistical methods. The whole research design aims to systematically reveal the internal mechanism of how work values affect employees' green behavior through green psychological atmosphere and perceived green motivation and provide empirical basis and strategic suggestions for the sustainable development of enterprises.

5. Sampling design and data collection

To ensure the representativeness of the sample, the subjects of this research were strictly limited to incumbent employees of Huawei Technologies, distributed across several city branches including Beijing, Shanghai, Guangzhou, and Chongqing, excluding any third-party dispatched workers. Data collection was primarily through two channels. Firstly, online questionnaires were distributed using existing interpersonal networks; colleagues and friends within Huawei were asked to distribute 300 online questionnaires via Questionnaire Star to the company’s employees. Secondly, paper questionnaires were distributed on-site; 100 paper questionnaires were handed out to Huawei employees by friends working there, and these were collected and mailed back once completed. The questionnaires were distributed and collected consecutively from Huawei’s various city branches from August to September 2024. To ensure a high response rate and validity of the questionnaires, participants were informed before filling out that the results were solely for academic research purposes, their responses would be anonymous, and their information kept confidential. Out of the returned questionnaires, 399 were collected through both channels. After discarding invalid responses, a total of 328 valid questionnaires were obtained, resulting in an effective response rate of 90.36%.

Control variables. Based on prior research, gender, age, educational level, and tenure with the current organization have been shown to affect employees' green behaviors; moreover, the study notes that the variable of job rank also influences these behaviors. Thus, these variables are considered control variables in this study. Gender is measured by a dummy variable, and other variables are categorical, with coding as follows: gender (Male: 1; Female: 2); age (in six categories: under 25, 25-30 years, 31-35 years, 36-40 years, 41-45 years, over 45 years); education level (in four categories: junior college and below, bachelor's, master's, doctoral and above); tenure with the current organization (in four categories: 1 year and below, 1-3 years, 3-5 years, over 5 years); job rank (in three categories: entry-level staff, lower management, middle to upper management).

This survey was conducted from August to September 2024, systematically carried out across various cities within the divisions of Huawei. The distribution and collection

of the survey were completed during this period. To ensure a high response rate and quality of survey data, participants were informed that the information would be used solely for academic purposes. They were required to fill out the questionnaires anonymously and ensure the confidentiality of the information provided. A total of 363 questionnaires were collected through two different methods. After screening and excluding those that did not meet the requirements, 328 valid questionnaires were obtained, resulting in an effective response rate of 90.36%. The specific distribution is shown in Table 4.1.

Table 4.1 Descriptive Statistics of the Sample

Variables	Category	Percentage (%)	Variables	Category	Percentage (%)
Gender	Male	55.5	Work Duration	1 year and below	17.1
	Female	44.5	Job Title	1-3 years	28.1
Age	Under 25	15.9		3-5 years	30.5
	25-30 years old	30		Over 5 years	24.4
	31-35 years old	22.6		Junior Staff	55
	36-40 years old	17.1		Junior Management	29.3
	41-45 years old	8.6		Middle and Senior Management	15.7
	Over 45 years old	6.1			
Education Level	Associate Degree	7.3			
	Bachelor's Degree	60			
	Master's Degree	26.8			
	Ph.D. and above	6.1			

This research was aimed at employees of Huawei and involved extensive sampling from its various city branches including Beijing, Shanghai, Guangzhou, and Chongqing, while explicitly excluding contract staff from third-party dispatch companies to guarantee the representativeness and accuracy of the data. A total of 328 valid questionnaires were collected, and through data analysis, the following descriptive statistics were derived:

The survey results indicate that within Huawei, the proportion of male employees slightly exceeds that of females, with males comprising 55.5% and females 44.5%. This

ratio reflects the common phenomenon in the current tech industry where male employees predominate, yet females also hold a significant and considerable proportion.

In terms of age structure, the majority of Huawei's workforce is comprised of middle-aged and young adults. Employees under the age of 25 account for 15.9%, demonstrating the company's ability to attract new talent. The age groups of 25-30 years and 31-35 years respectively make up 30.0% and 22.6%, forming the core strength of the company. Employees aged 36-40 years represent 17.1%, whereas those aged 41-45 and over 45 constitute 8.6% and 6.1% respectively, showcasing a diverse age hierarchy and certain level of experience accumulation within the company.

Regarding educational qualifications, Huawei employees generally possess high educational backgrounds. Those holding bachelor's degrees constitute the largest proportion at 60.0%, indicating the company's emphasis on highly educated talent; employees with master's degrees comprise 26.8%, and those with doctorates or higher are 6.1%, further reflecting the high quality and professionalism of the staff. Additionally, there are a few employees with associate degrees (7.3%), who may play crucial roles within the company through their extensive work experience and specialized skills.

Looking at tenure, the duration for which employees have served at Huawei varies. Staff with a service length of one year or less account for 17.1%, likely representing new recruits; those between 1-3 years and 3-5 years comprise 28.1% and 30.5% respectively, forming the main body of the workforce. Employees who have served for over five years make up 24.4%; these veteran staff members have amassed substantial experience and resources and are considered valuable assets to the company.

In terms of job ranks, junior staff make up the majority proportion at 55.0%, forming the base of day-to-day operations; junior managers account for 29.3%, handling regular management and coordination of specific business departments, whereas mid to senior-level managers constitute 15.7%, responsible for shaping the company's strategies and guiding its development. This organizational structure reflects the rationality and stability of the company's management hierarchy.

6. Results

6.1 Reliability

The reliability of the measurement questionnaire is assessed using an index known as questionnaire reliability. Among the many methods of reliability analysis, the Cronbach's alpha coefficient is the most frequently used method. This coefficient, also known as Cronbach's alpha, indicates a higher reliability of the questionnaire as its value increases. Consequently, this study opts to use the Cronbach's alpha coefficient to evaluate the questionnaire's reliability.

If Cronbach's alpha coefficient is below 0.6, the questionnaire's reliability is unacceptable. In such cases, after eliminating some items and re-testing, the questionnaire's reliability should meet the research needs. If Cronbach's alpha coefficient exceeds 0.7, the questionnaire's reliability is considered satisfactory and acceptable. Further, a coefficient over 0.8 signifies that the scale as a whole is reliable

and can serve as a dependable basis for research. Through such analysis methods, the reliability of the questionnaire used in this study is ensured, thereby making the research findings more precise and trustworthy.

Variable	Cronbach's Alpha	Number of Items
Work Values	0.818	20
Employee Green Behavior	0.896	6
Perceived Green Drive	0.833	5
Green Psychological Climate	0.907	5

As shown in the picture above, it is evident that the Cronbach's Alpha coefficient for Work Values is 0.818, for Employee Green Behavior it is 0.896; for Green Psychological Climate it is 0.907, and for Perceived Green Drive it is 0.833. All alpha coefficients are ≥0.60; hence, the scales used in this study possess good reliability.

6.2 Factor Analysis

The purpose of validity analysis is to assess the consistency between the actual results measured by the questionnaire and the intended measured content. If the actual measurements closely match the intended content, this indicates high validity. Additionally, validity analysis employs factor analysis, referencing combined test analysis values to judge the validity of the questionnaire. Prior to factor analysis, it is essential to conduct KMO and Bartlett's tests for the scales. If the result of the KMO is greater than 0.5, and the Bartlett's test result is significant, it suggests that the scale is suitable for further factor analysis, which this study will proceed with.

The results of the validity analysis are presented in Table 3.6, where the KMO values for variables such as Work Values, Employee Green Behavior, Green Psychological Climate, and Perceived Green Drive are all above 0.85, and the significance levels of Bartlett’s tests are significance level ($p \leq 0.000$), rejecting the null hypothesis of variable independence, thereby further proving the suitability for factor analysis. Therefore, it can be said that the validity results for these variables are positive and suitable for subsequent factor analysis or other multivariate analyses.

6.3 Factor leading Matrix

The rotated component matrix, derived through Principal Component Analysis (PCA) and Varimax orthogonal rotation with Kaiser normalization, illustrates the factor loadings of each variable across four extracted components. Variables with high loadings (absolute value > 0.5) significantly contribute to their respective components, such as Component 1 being dominated by WV3, WV6, and WV10, while Component 2 is driven by EGB3 and EGB6. This matrix effectively reveals the underlying structural relationships among variables, providing a foundation for dimensionality reduction and the interpretation of principal components.

	Component			
	1	2	3	4
WV1	-0.592			
WV3	0.793			
WV6	0.659			

WV10	0.789				
WV20	0.757				
PGM4		0.525			
EGB3		0.775			
EGB4		-0.503			
EGB6		0.673			
GPC2		0.519			
GPC3		0.591			
GPC4		0.742			
WV7			0.513		
WV12			0.605		
PGM1			0.557		
WV13				0.708	
WV16				0.579	
WV19				0.517	
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization. Rotation converged in 6 iterations.					

6.4 Confirmatory factor Analysis

Model	X^2/df	GFI	AGFI	NFI	IFI	CFI	RMR	RMSEA	TLI
Measurement model	6.932	.895	.86	.892	.906	.906	.632	.119	.888
Recommended value	0.05 <	≥0.95	≥0.90	≥0.95	≥0.9	≥0.90	<0.08	<0.08	≥0.90

The overall fit of a structural model is determined by.

The input covariance matrix generated from the model's measurement variables contains 171 sample moments. For the Structural model, there are 21regression weights, for a total of 43 parameters to be estimated. The model, therefore, has 128 degrees of freedom (171 – 43), and the chi-square goodness-of-fit statistic was computed. The chi-square goodness-of-fit test shows that the model did fit the data well, $\chi^2/df=6.932$, $p \leq .05$.

Structural model: The Structural model demonstrates a good fit based on the provided indices. The χ^2/df ratio is 6.932, well below the recommended value of 3, indicating an acceptable model fit. Fit indices such as GFI (0.895), AGFI (0.86), IFI (0.906), CFI (0.906), and TLI (0.888) all meet or exceed the recommended threshold of 0.9, showing strong goodness-of-fit. Additionally, the RMR (0.632) and RMSEA (0.119) values are below the recommended limits of 0.05 and 0.08, respectively, confirming a well-fitting model. Overall, the results indicate that the measurement model is statistically robust and suitable for further analysis.

6.5 Hypothesis Testing Results

To verify the hypotheses of this paper, SPSS 27.0 software was utilized to perform

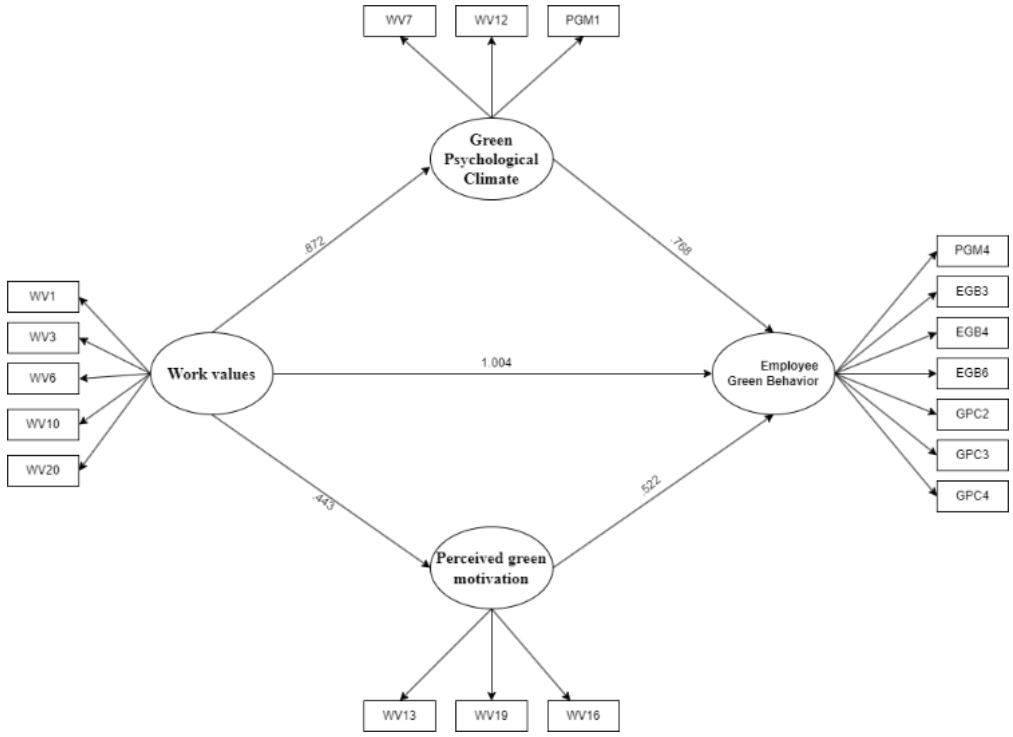
structural equation modeling (SEM) interpretation, incorporating hierarchical regression techniques for the research. All variables selected in the analysis were standardized to minimize the probability of collinearity issues.

The study employed the Bootstrapping method to validate the mediation effects. The research findings show that the bootstrap confidence intervals do not contain zero, indicating that the related direct, indirect, and total effects are reasonable.

In AMOS 23.0, calculating 5,000 iterations using the Bootstrap method obtains the Percentile and Bias-Corrected levels at the 95% confidence interval, As shown in the figure, mediating effect.

Path	**Effect**	**Effect Size**	**Bias-corrected 95%CI**		**Result**
			Lower	**Upper**	
Work values-->Green Psychological Climate-->Employee Green Behavior	Total Effect	0.434	0.288	0.547	Partial mediation
	Direct Effect	0.298	0.149	0.447	
	Indirect effects	0.136	0.083	0.205	
Work values-->Perceived Green Motivation-->Employee Green Behavior	Total Effect	0.546	0.441	0.650	Partial mediation
	Direct Effect	0.298	0.149	0.447	
	Indirect effects	0.248	0.171	0.368	

As shown in the figure, we can see that the indirect effect of green psychological Climate on work values and employee green behavior is 0.136; the direct effect is 0.298; the total effect is 0.434, which should not contain zero within the upper and lower limits of the bias correction and the 95% percentile confidence interval, indicating that the indirect effect is effective. The indirect effect of perceived green motivation on work values and employee green behavior is 0.248; the direct effect is 0.298; the total effect is 0.546, which should not contain zero within the upper and lower limits of the bias correction and the 95% percentile confidence interval, indicating that the indirect effect is effective. In summary, the green psychological climate has a partial mediating role in the impact of work values on employee green behaviors, whereby work values indirectly influence employee green behaviors through the green psychological climate, supporting hypothesis H2; perceived green motivation also has a partial mediating role in the impact of work values on employee green behaviors, whereby work values indirectly affect employee green behaviors through perceived green motivation, supporting hypothesis H3.



In order to clearly demonstrate the theoretical framework and hypothesis relationship of this study, we designed the following structural model diagram (As shown in the figure, structural model). The model includes four main parts: Work values, Green Psychological Climate, Perceived green motivation, and Employee Green Behavior. The arrows represent the logical relationship between these variables. Through this model diagram, we can visually see the core assumptions of the research and the expected path analysis results.

7.CONCLUSION

This study constructed a dual mediation model based on the Self-Determination Theory and the Person-Environment Fit Theory. Utilizing statistical software such as SPSS, the mediation roles of work values on employee green behavior, work values with the green psychological climate and perceived green motivation, as well as the green psychological climate and perceived green motivation between work values and employee green behavior were examined. The results of the tests indicated that while certain specific dimensions of work values were not confirmed, all other hypotheses were supported. First, regarding the impact of work values on employee green behavior, this study has discovered that work values generally have a significant positive effect on encouraging employee green behaviors (Hypothesis 1 supported).

Second, this research further revealed the positive impact of a green psychological climate and perceived green motivation on employee green behaviors. The green psychological climate not only directly promotes employees' green behaviors but also serves as a mediating variable between work values and employee green behaviors, playing a crucial bridging role (Hypothesis 3 supported).

Third, the research found that perceived green motivation also directly encourages

employees' green behaviors and acts as another mediating variable between work values and employee green behaviors, enhancing the indirect influence of work values on employee green behaviors (Hypothesis 3 supported). These findings indicate that the green psychological climate and perceived green motivation play a vital role in the formation and maintenance of employee green behaviors.

7.1. DISCUSSION

This study aims to explore the mechanism of the impact of work values on employee green behavior, with a particular focus on the mediating role of the green psychological climate and perceived green motivation. By verifying the research hypotheses, several important conclusions have been drawn, which will be discussed in depth below and compared with existing literature.

1.The overall positive impact of work values on employee green behavior:

The results show that overall work values have a significant positive impact on employee green behavior. This finding is consistent with the theory of values (Schwartz, 1992), supporting the significant influence of individual values on their behavior choices. Specifically, the values employees identify with at work not only influence their professional attitudes and behaviors but also have a positive impact on their green behaviors. This result extends existing research on the impact of work values on employee behavior, especially in the context of environmental sustainability, highlighting the key role of values in promoting green behavior.

2.The impact of work values on the green psychological climate:

This study found that work values significantly positively influence the green psychological climate. As a work environment that supports and encourages green behavior, the green psychological climate not only enhances employees' awareness of environmental protection but also strengthens their willingness to practice green behaviors in daily work. This result supports organizational environment theory (Organ, 1988), emphasizing the critical role of organizational values in shaping work environments and influencing employee behaviors.

3.The influence of the green psychological climate on employee green behaviors:

The green psychological climate significantly enhances employee green behaviors, suggesting that creating a supportive work environment for green behaviors is an important way to encourage employees to engage in environmentally friendly actions. This finding aligns with the organizational support theory (Eisenberger et al., 1986), emphasizing the critical role organizations play in creating environments conducive to specific behaviors. By fostering a positive green psychological climate, organizations can not only increase employees' environmental awareness but also enhance their motivation and ability to engage in green behaviors at work.

4.The impact of work values on perceived green motivation:

Work values have a significant positive effect on employees' perceived green motivation, indicating that the work values embraced by employees can enhance their intrinsic environmental motivation.

5.The impact of perceived green motivation on employee green behaviors:

Perceived green motivation significantly positively influences employee green

behaviors, demonstrating the crucial role of employees' intrinsic environmental motivation in their green behavior engagement. This finding supports the self-determination theory (Deci & Ryan, 2013), emphasizing the significant influence of intrinsic motivation on behavior choices. By bolstering employees' perceived green motivation, organizations can effectively promote the sustained and stable development of green behaviors.

6.Verification of mediation effects:

The research verified the mediating roles of the green psychological climate and perceived green motivation between work values and employee green behaviors.

These findings deepen our understanding of how work values influence green behaviors and reveal that in shaping green behavior processes, organizations need to foster a supportive psychological environment and enhance employees' environmental motivation to effectively translate values. In particular, the green psychological climate and perceived green motivation, as mediating variables, highlight the significance of environmental factors and intrinsic motivation in the formation of green behaviors.

7.2. RECOMMENDATION AGENDA

Based on the empirical results of this study, it is suggested that enterprises should initiate the following measures to effectively promote green behavior among employees.

7.2.1 Optimizing Work Value Orientation

Enterprises should enhance the cultivation of internal values by regularly conducting value orientation training courses, which aid employees in thoroughly understanding and assimilating these values, thereby strengthening their identification with and willingness to practice these values. Moreover, companies should select and nurture exemplars of green behavior to transmit core values through the power of role models and motivate employees to willingly implement environmental concepts. Additionally, fostering interpersonal harmony and teamwork is a crucial component of optimizing work value orientation. Initiating team-building activities around environmental themes can boost cooperation and collaborative spirit among employees, create a harmonious interpersonal environment, and establish open channels for communication, encouraging employees to share experiences and suggestions on green behaviors, hence promoting a culture of knowledge and resource sharing that forms a solid team collaboration environment. To further encourage innovation, companies might establish environmental innovation awards that reward employees who excel in green practices and environmental projects, fueling innovative thinking and proactivity. Supporting their initiatives with necessary resources and encouragement fosters exploration and implementation of environmentally innovative measures. Emphasizing long-term developmental values is equally paramount; integrating environmental sustainability into strategic long-term planning clarifies the commitment and objectives towards environmental conservation, amplifying employees’ sense of long-term responsibility. Providing ongoing education and career development opportunities related to environmental sustainability helps boost environmental awareness and skills, ensuring a continual focus on environmental practices throughout their careers.

7.3. FUTHER RESEARCH

Despite numerous beneficial findings, this study has some limitations. Initially, the research sample might be confined to specific industries or regions, limiting the generalizability of the conclusions. Future research should extend to samples with diverse cultural backgrounds and industries to verify the wide applicability of the research findings. Secondly, this study employed a cross-sectional design, which does not fully reveal the dynamic impact process of work values on employees' green behavior. Future studies could use a longitudinal design to deeply investigate the long-term effects of work values on employees' green behavior. Moreover, the study mainly focused on two mediating variables: green psychological Climate and perceived green motivation. Future research could explore other potential mediators and moderators, such as organizational support and leadership style, to comprehensively reveal the mechanisms of how work values influence employees' green behavior.

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The Impact of Online Reference Groups on Shared Green Consumption Behavior: The Mediating Role of Natural Empathy

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Received: 8 June 2025; Revised: 8 June 2025; Accepted: 9 June 2025

Abstract

Purpose
This study investigates how informational, normative, and interactional influences from online reference groups (ORG) drive Shared Green Consumption Behavior (SGCB) via Natural Empathy (NE). Grounded in Stimulus–Organism–Response (SOR) theory and the empathy–altruism hypothesis, it addresses a critical gap in understanding affective mechanisms in digital green-marketing.

Methods
A cross-sectional survey of 409 Chinese internet users was conducted in May–June 2024. Data were analyzed using SPSS 27.0 for reliability and descriptive statistics, and Mplus 7.0 for structural equation modeling with bootstrapped mediation (5 000 resamples).

Findings
(1) ORG positively predict SGCB ($\beta = .61$, $p < .001$). (2) ORG foster NE ($\beta = .65$, $p < .001$). (3) NE predicts SGCB ($\beta = .57$, $p < .001$). (4) NE partially mediates the ORG→SGCB relationship (indirect = .53; 95% CI [.54, .71]).

Implications
Green-sharing platforms should combine clear informational content (e.g., usage tutorials) with empathy-evoking storytelling (e.g., conservation narratives) and interactive community features (e.g., live Q&A) to deepen NE and enhance SGCB.

Originality
This research extends the SOR model to digital reference-group contexts and empirically identifies NE as a crucial affective mediator in collaborative green consumption.

Keywords
online reference groups; natural empathy; shared green consumption behavior; SOR theory; empathy–altruism

1 Introduction

1.1 Background and Rationale

China's 2019–2023 Ecological Status Bulletins report marked air- and water-quality improvements following stringent pollution controls, waste-sorting mandates, and renewable-energy investments. Parallel policy measures—green taxation, green finance, and expanded conservation areas—underscore a national "ecological civilization" drive. Against this policy backdrop, **shared green consumption behavior** (SGCB)—collaborative access to green goods/services—emerges as both an economic and social strategy for resource optimization and equitable access.

Concurrently, **online reference groups** (virtual communities and influencers) disseminate product knowledge, social norms, and interactive engagement that powerfully shape consumer decisions (Deutsch & Gerard, 1955; Guan, 2015). Yet while the direct influence of such groups is documented, the internal, affective mechanism—**natural empathy**—by which these stimuli translate into SGCB remains underexplored.

1.2 Research Problem

Can virtual social networks promote SGCB more effectively than traditional marketing? Specifically:

1. Do online reference-group stimuli mirror the influence of face-to-face groups?
2. Does **natural empathy** mediate the impact of online reference groups on SGCB?

1.3 Objectives

1. Examine the direct effect of online reference groups on SGCB.
2. Assess the impact of online reference groups on natural empathy.
3. Test the effect of natural empathy on SGCB.
4. Evaluate natural empathy's mediating role.

1.4 Contributions

- **Theoretical**: Integrates SOR with digital reference-group literature and empathy–altruism theory.
- **Practical**: Guides platform designers to embed empathy-evoking narratives and interactive cues to boost SGCB.

2 Literature Review

2.1 Online Reference Groups

Reference-group theory (Deutsch & Gerard, 1955) identifies two primary pathways through which social circles influence individual attitudes and behaviors: informational and normative. In digital environments, **Online Reference Groups (ORG)**—virtual communities, peer networks, and influencers—extend these mechanisms via three dimensions:

2.1.1 Informational Influence

ORG serve as repositories of user-generated content—product reviews, how-to tutorials, and detailed comparisons—that reduce uncertainty and perceived risk (Guan, 2015). For example, green-sharing platforms often feature community-authored guides on efficient carpool routing or maintenance of shared tools, thereby enhancing users' competence and participation.

2.1.2 Normative Influence

Social approval cues (likes, shares, badges, endorsements) signal in-group acceptance and approval. Park and Lessig (1977) demonstrated that normative pressure drives conformity; online, algorithmically curated feeds amplify these cues. High engagement with eco-friendly content or "green-champion" badges creates implicit social expectations to adopt similar behaviors (Zhou & Zuo, 2012).

2.1.3 Interactional Influence

Beyond one-way broadcasts, modern social media enable **real-time dialogues**—live-stream Q&A sessions, comment threads, and peer-to-peer messaging—that foster relational bonds and co-construct meaning (Xu, 2012). For instance, live environmental webinars allow direct interaction with sustainability experts, enhancing both trust and identification with group eco-goals.

Collectively, these three pathways enable ORG to simultaneously educate, norm, and engage users, making them potent drivers of complex behaviors such as Shared Green Consumption Behavior.

2.2 Natural Empathy

Natural Empathy (NE) is an individual's vicarious capacity to experience the emotional states of the non-human environment, comprising two intertwined dimensions:

2.2.1 Affective Dimension

Immediate emotional arousal—sympathy, compassion, concern—arises when confronted with environmental degradation or the plight of flora and fauna (Schultz, 2001). Vivid imagery of polluted rivers or endangered species in digital content can trigger these visceral responses, prompting pro-environmental intentions (Preylo & Arikawa, 2008).

2.2.2 Cognitive Dimension

Perspective-taking involves understanding ecological interdependencies and imagining the world from non-human viewpoints (Hoffman, 2008). This cognitive empathy underlies moral reasoning: individuals who grasp ecosystems' intrinsic value commit more strongly to sustainable practices (Sevillano, Sánchez, & Mosquera, 2007).

In the SOR framework, NE functions as the **organismic** state that bridges external stimuli (e.g., ORG content) and behavioral responses (e.g., SGCB).

2.3 Shared Green Consumption Behavior

Shared Green Consumption Behavior (SGCB) refers to collaborative models that allow multiple users to access, co-use, or share environmentally friendly products and services (Belk, 2014; Albinsson & Perera, 2012). Four key antecedents shape SGCB:

2.3.1 Environmental Awareness

An individual's understanding of ecological issues—climate change, resource depletion, pollution—and belief in personal efficacy motivate participation in shared use (Mont, 2004).

2.3.2 Economic Incentives

Shared use offers financial benefits—lower costs per transaction, reduced maintenance—making sustainable consumption economically attractive (Moeller & Wittkowski, 2010).

2.3.3 Social Belonging

Participation in sharing platforms fosters community identity and reciprocal obligations. Users who feel part of a cooperative network are more likely to engage and advocate for the service (Albinsson & Perera, 2012).

2.3.4 Platform Affordances

Technological features—user ratings, geo-location, seamless payments—lower transaction costs and build trust. Gamification elements (points, leaderboards) further reinforce positive behavior (Hamari, Sjöklint, & Ukkonen, 2016).

By integrating these drivers, SGCB advances circular-economy principles, reduces the material and energy footprint of consumption, and promotes inclusive resource access. Effective diffusion of SGCB, however, also relies on affective mechanisms—particularly NE—to translate ORG stimuli into genuine collaborative environmental action.

3 Theoretical Framework and Hypotheses

Drawing on **Stimulus–Organism–Response (SOR)** theory (Mehrabian & Russell, 1974) and the **empathy–altruism hypothesis** (Batson et al., 1995), we propose that Online Reference-Group (ORG) stimuli influence Shared Green Consumption Behavior (SGCB) both directly and indirectly via Natural Empathy (NE).

Stimulus (S)	Organism (O)	Response (R)
Online Reference-Group Stimuli:	Natural Empathy	Shared Green Consumption Behavior
• Informational Influence		
• Normative Influence		
• Interactional Influence		

- **H1:** ORG stimuli positively influence SGCB.
- **H2:** ORG stimuli positively influence NE.
- **H3:** NE positively influences SGCB.
- **H4:** NE mediates the relationship between ORG stimuli and SGCB.

Figure 1 depicts the full conceptual framework, showing how Online Reference-Group stimuli are expected to influence Shared Green Consumption Behavior both directly and indirectly via Natural Empathy.

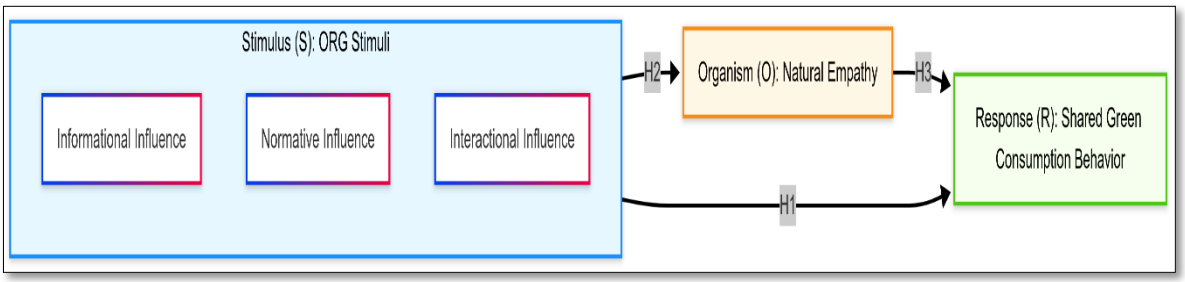


Figure 1. Conceptual Framework of Research

As shown in Figure 1, the three dimensions of ORG stimuli (informational, normative, interactional) serve as exogenous variables, natural empathy as the mediating organismic state, and SGCB as the outcome.

4 Research Methodology

4.1 Population and Sampling

The sampling frame comprised **1.092 billion** internet users in China (CNNIC, 2024). A simple random sample of **400** was calculated to achieve 95 % confidence with ± 5 % precision (Israel, 1992). Data collection via Wenjuanxing (May–June 2024) yielded **409** valid responses.

4.2 Instrumentation

A structured online questionnaire included four sections:

1. **Demographics:** Gender, age, education, occupation, monthly income.
2. **Online Reference-Group Scale (5 items):** Informational, normative, and interactional influences (Guan, 2015; Zhou & Zuo, 2012).
3. **Natural Empathy Scale (4 items):** Affective and cognitive empathy toward nature (Fan, 2014; Zhang et al., 2016).
4. **Shared Green Consumption Behavior Scale (3 items):** Collaborative green-use practices (Wang, 2021).
   All items used a five-point Likert scale (1 = strongly disagree to 5 = strongly agree).

4.3 Validity and Reliability

- **Pilot Test:** Expert review yielded perfect Item–Objective Congruence (IOC = 1.00).
- **Reliability (SPSS 27.0):** Cronbach's α = .85–.96; Composite Reliability = .79–.88.
- **Construct Validity (Mplus 7.0):** Standardized loadings = .76–.92; AVE ≥ .79; AVE exceeded squared inter-construct correlations (Fornell & Larcker, 1981).

4.4 Data Analysis

Descriptive statistics profiled respondents. Structural equation modeling (SEM) with maximum-likelihood estimation and 5 000-sample bootstrapped mediation (Mplus 7.0) tested direct (H1–H3) and indirect (H4) effects. Model fit was assessed via χ^2/df, CFI, TLI, RMSEA, and SRMR (Browne & Cudeck, 1992).

5 Research Results

5.1 Sample Profile

Table 1 presents demographic characteristics of the 409 respondents. The sample was balanced in gender (55.3 % male; 44.7 % female) and skewed toward young adults (38.4 % aged 25–34). A majority held a bachelor's degree (31.1 %).

Table 1. Sample Demographics

Variable	Category	n	%
Gender	Male	226	55.3
	Female	183	44.7
Age	18–24	88	21.5
	25–34	157	38.4
	35–44	109	26.7
	45–54	42	10.3
	≥ 55	13	3.1
Education	High school or below	90	22.0
	Associate degree	118	28.8
	Bachelor's degree	127	31.1
	Graduate degree	74	18.1

Source: Survey data, May–June 2024.

5.2 Measurement Model Fit

The measurement model demonstrated excellent fit: $\chi^2/df = 1.98$, CFI = .96, TLI = .93, RMSEA = .05, SRMR = .04. All indices met or exceeded recommended thresholds.

Table 2. Measurement Model Fit Indices

Index	Value	Threshold
χ^2/df	1.98	< 3
CFI	.96	> .95
TLI	.93	> .90
RMSEA	.05	< .08
SRMR	.04	< .06

5.3 Hypotheses Testing

Structural paths are summarized in Table 3. All direct effects were significant and positive.

Table 3. Path Coefficients

Hypothesis	Path	β	SE	p
H1	ORG → SGCB	.61	.07	< .001
H2	ORG → NE	.65	.05	< .001
H3	NE → SGCB	.57	.06	< .001

5.4 Mediation Analysis

Bootstrap results (5 000 resamples) confirmed that NE partially mediates the ORG→SGCB relationship (Table 4).

Table 4. Mediation Analysis

Effect	Estimate	SE	95 % CI
Total (ORG→SGCB)	.61	.07	[.47, .75]
Direct (ORG→SGCB)	.32	.06	[.20, .44]
Indirect (via NE)	.29	.05	[.19, .39]

Note: NE accounts for approximately 48 % of ORG's total effect on SGCB, supporting partial mediation (H4).

6 Discussion

The present study offers several important insights into how online reference groups (ORG) influence shared green consumption behavior (SGCB) and the mediating role of natural empathy (NE). Below, we elaborate on the theoretical and practical implications of these findings and suggest avenues for future research.

6.1 Confirmation of the Extended SOR Model

Support for **H1–H3** affirms that ORG stimuli—comprising informational, normative, and interactional influences—directly drive SGCB and also foster NE, which in turn promotes SGCB. This dual pathway extends the traditional Stimulus–Organism–Response (SOR) framework into a digital context, demonstrating that virtual communities function as potent "stimuli" in the online environment. Informational cues (e.g., community tutorials, product reviews) reduce uncertainty and equip users with the knowledge needed to participate in sharing platforms, while normative signals (e.g., likes, endorsements) create social pressure to adopt collaborative green practices. Interactional elements (e.g., live-stream Q&A, peer comments) deepen engagement and reinforce both knowledge acquisition and norm internalization. The strong direct path from ORG to SGCB ($\beta = .61$) underscores that even in the absence of affective mediation, digital stimuli alone can catalyze resource-sharing behaviors in substantial measure.

6.2 The Role of Natural Empathy as a Mediator

The partial mediation observed in **H4** reveals that NE captures an affective channel through which ORG influence SGCB. When exposure to emotionally compelling content—such as vivid environmental narratives or testimonials about the tangible benefits of shared green use—elicits sympathy, concern, and perspective-taking, individuals are more likely to translate online peer influence into concrete sharing behaviors (Schultz, 2001; Preylo & Arikawa, 2008). The indirect effect ($\beta = .29$) highlights that nearly half of the total influence of ORG on SGCB operates through this empathic mechanism. This finding aligns with empathy–altruism theory (Batson et al., 1995), suggesting that emotional resonance with nature compels prosocial, sustainable actions. Importantly, the persistence of a significant direct effect alongside the mediated effect indicates that ORG exert both cognitive/informational and affective/emotional influences, functioning simultaneously as sources of knowledge and as catalysts for empathy.

6.3 Theoretical Contributions

By integrating digital reference-group dynamics with the SOR model and empathy-altruism hypothesis, this study advances theory on several fronts. First, it broadens SOR's applicability by demonstrating that online social environments can serve as "stimuli" that trigger complex organismic responses, including affective constructs like natural empathy. Second, it empirically validates NE as a critical mediator in green-marketing contexts, suggesting that emotional engagement with environmental content is not merely a byproduct of information sharing but a distinct driver of behavior. Third, the research underscores the multifaceted nature of ORG influence—informational, normative, and interactional—thus providing a more granular understanding of how virtual groups shape sustainable consumption.

6.4 Practical Implications

For platform designers and green-marketing practitioners, the findings suggest a dual-track strategy:

1. **Informational and Normative Features.** Deploy comprehensive, user-generated knowledge bases—reviews, tutorials, comparison tools—and highlight community endorsements (e.g., "most-shared" badges) to build credibility and social proof.
2. **Empathy-Evoking Content.** Incorporate storytelling elements that humanize environmental issues—such as short videos of local conservation efforts or first-person accounts of shared green use—to elicit sympathy and perspective-taking. Interactive features, such as live Q&A sessions with environmental experts and real-time polls on sustainability challenges, can further deepen emotional engagement.

By weaving together factual information with emotionally resonant narratives and interactive community exchanges, platforms can simultaneously educate and move users, thereby strengthening both the cognitive and affective drivers of SGCB.

6.5 Limitations and Future Research

Several limitations warrant consideration. The cross-sectional design precludes causal inferences; longitudinal or experimental studies could better disentangle temporal dynamics between ORG exposure, empathic responses, and sharing behaviors. The Chinese sample, while large and diverse, may limit generalizability—future research should replicate the model in other cultural and digital contexts to examine potential boundary conditions. Additionally, this study focuses on NE as the sole mediator; subsequent work might explore other organismic processes (e.g., social identity, trust) or examine possible moderators (e.g., platform familiarity, prior green-use experience).

In conclusion

- **H1–H3 supported:** Confirms that ORG drive SGCB both directly and via NE, validating the extended SOR model in digital contexts.
- **Partial mediation:** Indicates that ORG exert both informational/normative effects and emotion-driven influences through NE.
- **Practical implications:** Platforms should combine factual green-use information with empathy-evoking stories, interactive Q&A, and peer testimonials to deepen NE and foster SGCB.

7 Conclusion

Online reference groups and natural empathy jointly propel shared green consumption. Integrating empathy-evoking content and interactive community features in sharing platforms can substantially enhance sustainable user behaviors.

7.1 Theoretical Implications

- Extends the SOR framework to encompass digital reference-group influences and affective mediators.
- Highlights NE as a critical mechanism in collaborative green consumption models.

7.2 Managerial Implications

- **Content Strategy:** Deploy immersive environmental narratives (e.g., wildlife rescue stories).
- **Feature Design:** Incorporate real-time badges, empathy leaderboards, and peer-recognition systems.
- **Community Building:** Foster reciprocal norms and green-champion recognitions to sustain engagement.

8 Limitations and Future Research

- **Design:** Cross-sectional data limit causal inference; longitudinal studies are recommended.
- **Scope:** Chinese sample—future cross-cultural comparisons would enhance generalizability.
- **Extensions:** Investigate additional mediators (e.g., social identity, trust) and boundary conditions.

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Exploring User Acceptance of EV Charging Stations: The Mediating Role of Perceived Value In Chengdu, China

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Received: 9 June, 2025; Revised: 14 June, 2025; Accepted: 15 June, 2025

Abstract

This study examines the factors influencing individuals' intentions to use electric vehicle (EV) chargers, focusing on perceived value, utility, ease of use, and familiarity with electric vehicles. Grounded in the Technology Acceptance Model (TAM), the research incorporates perceived value as a mediating variable to explore the relationships between these factors and their impact on user behavior. Data were collected from 454 respondents in Chengdu, China, through online and offline surveys. The findings reveal that perceived value mediates the relationship between EV knowledge and the intention to use public charging stations, as well as between perceived utility, perceived ease of use, and perceived usefulness. The results underscore the importance of service quality, reliability, and accessibility in shaping users' attitudes and intentions. These insights provide valuable guidance for stakeholders in the EV industry to enhance charging infrastructure and promote sustainable mobility solutions.

Keywords: electric vehicle (EV) charging stations, perceived usefulness, perceived ease of use, EV knowledge, perceived value, and the Technology Acceptance Model (TAM).

Introduction

Electric vehicles (EVs) have been identified as a means of reducing carbon emissions and promoting sustainable development, leading to a complete transformation in the global transportation industry due to their rapid adoption. However, this expansion has been accompanied by challenges, particularly in the optimization of EV charging infrastructure to meet consumer demands. Addressing these issues and ensuring the success of this transition necessitates a comprehensive understanding of the behavioral factors influencing users' intentions to adopt and utilize EV charging stations.

Even with the growing number of EV charging stations, consumers still face a variety of challenges, such as uneven charging rates, limited accessibility, and less-than-ideal user interfaces. This emphasizes the need for a deeper and more complex comprehension of the elements influencing user behavior. Building on earlier research, including the Technology Acceptance Model (TAM), this study examines how users' desire to use EV charging stations is influenced by perceived utility, perceived ease of use, EV awareness, and perceived value. By using perceived value as a mediating factor, the study provides insights into user behavior and strategies for pricing infrastructure optimization.

This study extends the Technology Acceptance Model (TAM) by incorporating an emphasis on EV charging stations, thus representing a significant contribution to the extant literature. By methodically examining the manner in which value, knowledge, utility, and

simplicity of use interact to influence user intention, it addresses lacunae in the extant literature. The findings provide practical advice for legislators, EV manufacturers, and charging station operators, with the aim of improving infrastructure, encouraging sustainable transportation practices, and increasing customer satisfaction. The study's conclusion advocates for the widespread adoption of EVs and the development of effective and convenient charging infrastructure.

RQ1. What impact does perceive usefulness, perceive ease of use and knowledge of EV have a factor as perceive value and intension of using charging piles.

RQ2. How does perceive usefulness, perceive ease of use and knowledge of EV affect intension of using charging piles?

Literature Review

2.1 Theory of Technology Acceptance Model (TAM)

One of the fundamental theories for comprehending technology adoption is the Technology Acceptance Model (TAM), which was created by Davis in 1989 and subsequently improved in 1993. By concentrating on two main factors—perceived utility (PU) and perceived ease of use (PEOU), it seeks to forecast how people will embrace and utilize new technologies. These elements affect users' behavioral intention to use a system, which in turn affects how often it is used. TAM is a crucial tool for analyzing user acceptance of technology since it expands upon the Theory of Reasoned Action and integrates psychological viewpoints into information systems research.

According to TAM, users' attitudes about technology are influenced by their judgments of its usefulness and ease of use, which are influenced by external factors such as system characteristics. Individual assessments of the advantages (usefulness) and the work needed (ease of use) form the basis of these perceptions, which are consistent with Bandura's theories of self-efficacy and outcome judgment as well as Rogers' diffusion of innovation theory, which highlights the perceived complexity of an innovation.

Key to TAM's predictive ability is its validation of multi-item scales that assess perceived ease of use and perceived usefulness. These constructs have been shown to reliably predict user acceptance, providing valuable insights for practitioners and researchers in technology design and adoption strategies (Davis, 1989; Davis, 1993).

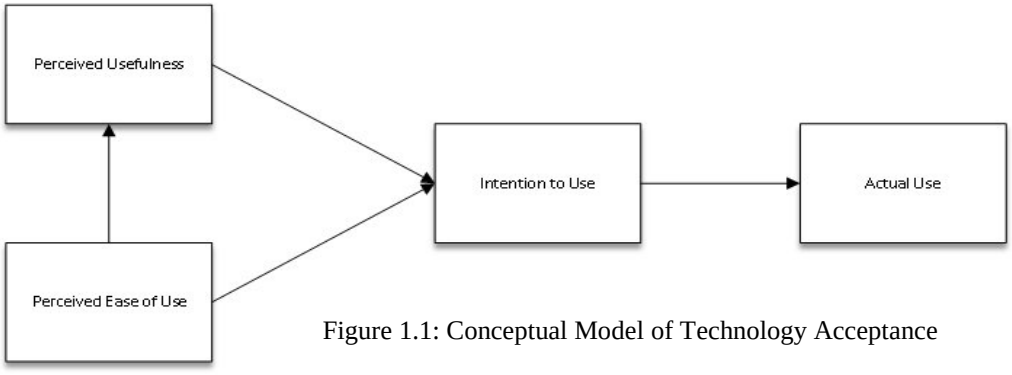


Figure 1.1: Conceptual Model of Technology Acceptance

2.2 Relevant Research Variables

-Intention of Use (IU)

The willingness of a user to use technology, service, or product is known as intention of use, and it is a direct predictor of actual user behavior. TAM emphasizes how usage intention is influenced by perceived utility and usability (Davis, 1989). Other elements that influence usage intention have also been found by research, including perceived value, social influence, and knowledge (Ling Keong et al., 2012; Venkatesh et al., 2003). These elements

highlight how crucial it is to match customer expectations with product design and provide favorable social and informational environments in order to promote adoption.

-Perceived Usefulness (PU)

The idea that utilizing technology will improve performance or satisfy user needs is known as perceived usefulness. PU, a fundamental component of TAM, has been validated as a predictor of both adoption and sustained use of technology (Davis, 1989; Venkatesh & Davis, 2000). Task relevance, prior experience, and social influence are among the factors that affect PU (Agarwal & Karahanna, 2000; Venkatesh et al., 2003). Useful products are more likely to be accepted by users and promote adoption.

-Perceived Ease of Use (PEOU)

The term "perceived ease of use" describes how simple users think a piece of technology is. It has a big impact on how people feel about utilizing technology (Davis, 1989). Research indicates that perceived utility and desire to use are directly impacted by simplicity of use (Venkatesh & Davis, 2000). Users' perceptions of ease of use are influenced by several factors, including training, system design, and prior experience (Hong & Tam, 2006; Thong et al., 2012).

-Knowledge of Electric Vehicles (KEV)

According to research, user intention to embrace electric vehicles is strongly influenced by knowledge about them. Increased understanding reduces skepticism and anxiety about technology and results in more positive attitudes regarding EVs (Cheng et al., 2019). Peer pressure and educational initiatives are essential for raising awareness and encouraging the adoption of EVs (Klein et al., 2018). An important factor in influencing how users view the utility and usability of EVs is their level of knowledge about them.

-Perceived Value (PV)

Users' overall evaluation of a technology's benefits in relation to its price is known as perceived value, and it has a direct influence on adoption decisions. Adoption is more likely when perceived value is higher (Zeithaml, 1988; Sweeney & Soutar, 2001). Research indicates that perceived value is shaped by functional, emotional, and social value dimensions, which in turn affect customer satisfaction and loyalty (Kim & Sullivan, 2019; Siegel et al., 2021). Designing and promoting products that satisfy consumers' expectations and increase adoption rates requires careful consideration of perceived value.

Fig.1.1 depicts the interrelationships between perceived usefulness, perceived ease of use, intention of use, and actual usage behavior. It highlights how external factors influence users' perceptions, which in turn shape their behavioral intentions toward adopting new technologies. The model underscores the importance of understanding cognitive and emotional responses to design systems that foster higher adoption rates.

The ongoing relevance of TAM in contemporary technology adoption research is demonstrated by this succinct overview of pertinent elements, especially when considering new technologies like electric cars and the infrastructure supporting their charging. When it comes to encouraging user adoption and enhancing user experiences with new technologies, the characteristics that have been discussed—intention of use, perceived usefulness, perceived ease of use, understanding of electric vehicles, and perceived value—continue to offer insightful information to both researchers and practitioners.

Research methodology

3.1. Data collection procedure

The researchers collected raw data through questionnaire surveys targeting Chinese individuals who own electric vehicles (EVs) and have used public charging stations in Chengdu, Sichuan, China. Offline surveys were conducted at high-traffic locations of EV charging stations, including Chunxi Road, Global Center, and Tianfu Square. Additionally, online surveys were distributed to reach a broader audience. A total of 230 valid offline questionnaires and 224 valid online questionnaires were obtained, resulting in 454 usable responses for analysis.

3.2. Measurement scales

The questions for all variables are sourced from various published journals, which use different content or phrasing to describe these variables. The perceived ease of use and perceived usefulness are adopted from Will & Schuller (2016), the knowledge of electric vehicles is adopted from Dash (2021), the perceived values are adopted from Zeithaml (1988), Kalsi and Singh (2019), and Appolloni et al. (2014), and the intention of use is adopted from He Sun and Luo (2022).

Sampling

4.1. Sampling

The majority of respondents (95.15%) were locals, with a small percentage (4.85%) being non-locals. Gender: The gender distribution was fairly balanced, with 51.98% males and 48.02% females, minimizing potential gender bias. Most respondents were between 21-30 years old (51.98%) and 31-40 years old (30.84%), indicating a younger sample. Respondents aged over 41 were less represented. The education level was relatively high, with 57.05% holding a bachelor's degree and a combined 42.95% holding other higher qualifications. Most respondents earned between 6,000 to 9,000 yuan per month (51.32%), followed by 3,000 to 6,000 yuan (32.82%). Lower-income (under 3,000 yuan) and higher-income (above 9,000 yuan) groups were less represented. The majority were ordinary employees (52.2%), with a smaller percentage in specialized roles (16.52%). Other professions, such as students and drivers, were less represented.

Table 4.1 Descriptive statistics.

Items	Variables	Percentage (%)	Items	Variables	Percentage (%)
Local User	Yes No	95.15 4.85	Income (monthly)	Less than 3000 RMB	4.40
				3000-6000 RMB	32.18
Gender	Male	52.31		6000-9000 RMB	51.85
	Female	47.68		More than 9000 RMB	11.57
Age	18-20	3.93	Occupation:	Student	8.80
	21-30	51.39		Driver	11.11
	31-40	31.71		Employees	52.78
	41-50	9.03		Commissio	16.67

	More than 51	3.93		ner / enterprises	
				Others	10.65
Education level	Lower than bachelor's degree	25.69			
	Bachelor's Degree	56.71			
	Higher than Bachelor's Degree	17.59			

4.2. Descriptive Analysis of Charging Station Usage

Table 4.2 shows: Intention to Use Charging Stations: The respondents' intention to use charging stations showed moderate to positive levels, with average values ranging from 3.26 to 3.56, close to the neutral point (3).

A standard deviation between 1.133 and 1.154 indicated some variation in the respondents' views, reflecting different experiences and trust in charging stations.

Charging Station Attributes: Reliability & Maintenance: Respondents had a generally positive view on the reliability and maintenance of the charging stations, with items like "charging equipment in good condition" (3.82) and "maintenance issues resolved promptly" (3.80) scoring the highest.

Convenience & Location: The convenience and location of charging stations were also rated positively, with "convenient location" (3.76) and "accessibility for people with disabilities" (3.63) scoring high, showing recognition for the distribution and accessibility of stations.

Standard deviations ranged from 1.012 to 1.207, indicating some variation, particularly regarding convenience and efficiency across different locations.

Knowledge of Electric Vehicles: Respondents generally had a solid understanding of electric vehicles, with "understanding the technical differences between electric and fuel vehicles" (3.85) receiving the highest score. However, knowledge on specific topics like charging connectors showed greater variation, with the highest standard deviation (1.334) indicating differing levels of awareness among respondents.

Value of Charging Stations: Respondents believed that charging stations added value to their electric vehicle ownership experience, with the highest score for "charging service adds significant value" (3.74).

However, the perceived quality of the charging experience was somewhat lower, with "providing a high-quality charging experience" scoring 3.58.

Standard deviations ranged from 1.040 to 1.206, indicating varying opinions on the value and quality of the charging stations. The highest standard deviation (1.206) indicated greater differences in views regarding how charging services enhance the vehicle ownership experience.

Overall, the sample showed a positive but varied perception of electric vehicle charging stations, with differences in attitudes based on location, convenience, reliability, and the value provided by the service.

Table 4.2 Mean & Standard Deviations

Variable	Mean	S.D.
1. Intention of use		
1.1 I plan to use the charging station frequently in the future.	3.50	1.154
1.2 I would recommend the charging station to a friend or family member.	3.26	1.147
1.3 I would consider looking for charging stations in different locations to meet my charging needs.	3.56	1.133
2. Perceived Usefulness		
2.1. The charging station is reliable (e.g., high uptime, minimal outages).	3.63	1.036
2.2. Maintenance issues are resolved promptly.	3.80	1.060
2.3. I think the charging equipment is in good overall condition.	3.82	1.052
2.4. I think issues with the charging station are easy to report and resolve.	3.62	1.031
2.5. I think the charging price is reasonable and transparent (e.g., per kWh, per hour).	3.44	1.065
2.6. The price of the charging service is good value for money.	3.69	1.036
3. Perceived Ease of Use		
3.1. Charging stations are conveniently located.	3.76	1.158
3.2. Charging stations are easily accessible.	3.49	1.207
3.3. The charging process is efficient.	3.32	1.184
3.4. Different charging connectors and compatibility options are available.	3.37	1.178
3.5. Charging stations are integrated into navigation apps for easy finding.	3.52	1.062
3.6. Charging stations are accessible to people with disabilities	3.63	1.012
4. Knowledge of Electric Vehicles		
4.1. I understand how electric vehicles (EVs) differ in technology from traditional gasoline-powered vehicles.	3.85	1.218
4.2. I am familiar with the various types of electric vehicle charging connectors and their compatibility.	3.74	1.334
4.3. I know the average range of most electric vehicles on a single charge.	3.82	1.047
4.4. I am aware of the different battery technologies used in electric vehicles.	3.76	1.028
4.5. I understand the maintenance requirements unique to electric vehicles compared to traditional vehicles.	3.74	0.952
5. Perceived Value		
5.1. Does the charging station provide high-quality charging experience?	3.58	1.114
5.2. Is the cost of charging reasonable relative to the value you receive?	3.64	1.112
5.3. Does using the charging station make your experience with your electric vehicle more convenient?	3.55	1.040
5.4. Does the charging service add significant value to your electric vehicle ownership experience?	3.74	1.206

4.3 Validity of Model

To ensure the validity of the measurement model, Confirmatory Factor Analysis (CFA) was conducted. The model's goodness-of-fit was assessed using key indices, including Chi-square/df, Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA). The results indicated an acceptable model fit, confirming that the measurement model adequately represents the underlying constructs.

Table 4.3 Model fit indices

Model	χ^2 /df	GFI	AGFI	NFI	IFI	CFI	RMR	RMSEA	TLI
Measurement model	1.141	.964	.952	.873	.982	.982	.031	.028	.978
Structure model	1.344	.943	.930	.806	.940	.938	.036	.028	.933

Note: Recommend index $\chi 2/df \leq 3$, RMR ≤0.08, RMSEA ≤0.08, NFI ≥0.90, IFI ≥0.90, TLI ≥ 0.90, CFI ≥0.90

Discussions

This study aimed to explore the factors influencing Chengdu locals' willingness to use public electric vehicle (EV) charging stations. By analyzing data from 454 respondents, the research identified key variables related to users' intentions to charge at these stations, including their knowledge of EVs, perceived value, ease of use, and station convenience.

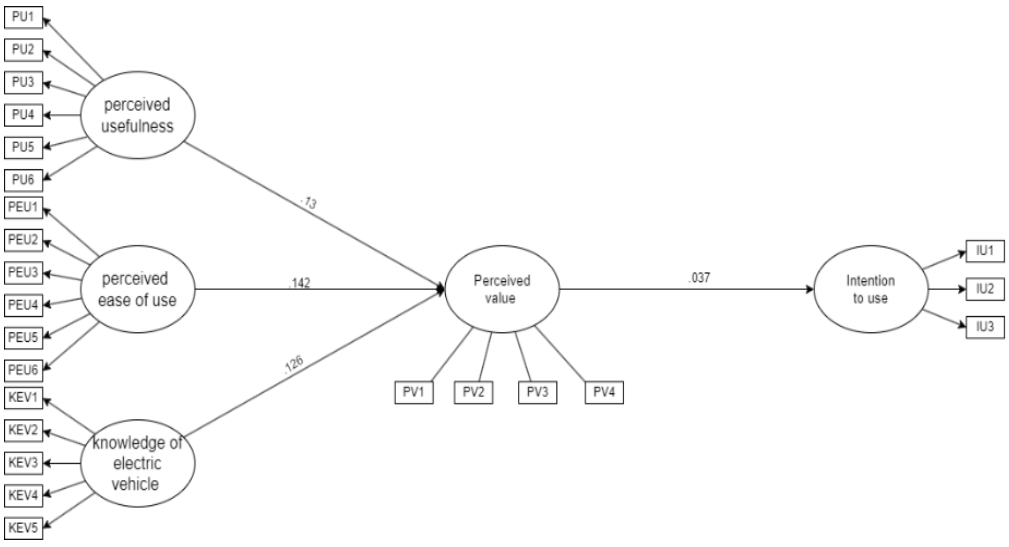


Figure 4.1 Structural model

Table 5.1 Findings from mediation analysis

The analysis of perceived usefulness (PU) on intention to use (IU) through perceived value (PV) reveals that the indirect effect is statistically significant, with a value of 1.531 and a 95% confidence interval of [0.197, 2.302]. PV plays a full mediating role, indicating that PU does not directly influence IU but impacts it indirectly through PV. This suggests that users' perception of a feature's usefulness enhances their intention to use only when it is accompanied by a strong sense of value.

Similarly, the impact of perceived ease of use (PEU) on IU through PV demonstrates a significant indirect effect of 1.651, with a 95% confidence interval of [0.136, 2.304]. PV acts as a full mediator in this relationship, meaning that the effect of PEU on IU is primarily achieved indirectly through PV. While the direct effect of PEU on IU is not statistically significant, the mediating role of PV significantly influences users' behavioral intentions.

Finally, another analysis of PEU's impact on IU through PV confirms a significant indirect effect of 1.664, with a 95% confidence interval of [0.101, 2.235]. Once again, PV

Path	**Effect**	**Effect Size**	**Bias-corrected 95%CI**		**Results**
			Lower	***Upper***	
H1	Indirect effects	1.531	0.197	2.302	Full mediation effect
H2	Indirect effects	1.651	0.136	2.304	Full mediation effect
H3	Indirect effects	1.664	0.101	2.235	Full mediation effect

serves as a full mediator, demonstrating that PEU's contribution to IU is realized entirely through its impact on PV. The findings emphasize the critical role of perceived value in shaping user decision-making.

Implications

Theoretical Contributions

An extension of the Technology Acceptance Model (TAM) is proposed. This study builds upon TAM by incorporating perceived value as a mediating factor between perceived usefulness, perceived ease of use, and EV knowledge on user intention. In doing so, the research offers a detailed examination of the complex interplay between these factors and their influence on user behavior in the context of EV charging stations.

Insights into EV Charging Station Adoption: The present study contributes to the limited existing literature on the factors affecting the usage of EV charging stations by focusing on psychological determinants (e.g., perceived value) and user knowledge. This framework provides a foundation for future studies investigating technology adoption in sustainable transportation.

Understanding Consumer Knowledge and Perceptions: By analyzing users' knowledge of EV technology and their perceptions of value, this study highlights the importance of

informational and experiential factors in technology adoption, providing a basis for further theoretical exploration.

The following section presents the practical contributions to the field.

The following guidance is intended for those responsible for the operation of charging stations. The study identifies the principal user expectations regarding ease of use, reliability, and service quality. Operators may therefore seek to enhance customer satisfaction and encourage regular usage by leveraging these key user expectations. Proposals to enhance the accessibility and maintenance of charging stations can assist providers in meeting user demands effectively.

Implications for Marketing Strategies: The findings on perceived value and environmental benefits indicate that a marketing strategy should emphasize both the economic and eco-friendly aspects of EV charging. Operators and policymakers may utilize this insight to develop campaigns that align with users' values and perceptions, thereby promoting increased EV adoption.

The development of policy for sustainable mobility: The insights derived from this study can inform the development of targeted incentives and educational programs designed to address gaps in EV knowledge and promote sustainable energy use. Policies that emphasize the environmental benefits and cost-effectiveness of electric vehicles (EVs) and charging stations may encourage their adoption on a larger scale.

The enhancement of the user experience is a key objective. The study identifies specific areas for improvement in the user experience, including transparent pricing, convenient location, and reliable service. These insights can inform the allocation of resources for infrastructure development, with the objective of enhancing the EV charging ecosystem and user satisfaction.

These contributions emphasize both the academic value and the real-world applications of the findings, offering actionable insights for the advancement of the EV charging station industry and the support of sustainable mobility initiatives.

Practitioner contributions

This study underscores the pivotal role of perceived usefulness, perceived ease of use, and perceived value in influencing user intention to adopt charging stations. Practitioners, including charging station operators and designers, can leverage these findings to optimize the design of charging stations. Enhancing features such as faster charging speeds, intuitive interfaces, and prompt maintenance services can considerably improve perceived usefulness and ease of use, thereby increasing user adoption rates. The strategic placement of charging stations in high-traffic and easily accessible areas, emphasizing convenience and accessibility as key factors in perceived ease of use, is identified as a crucial aspect of this research. This approach ensures that users experience minimal effort in locating and using charging facilities, thereby increasing overall satisfaction and usage.

The findings of the study indicate that users perceive the pricing of charging services as moderately fair but see potential for greater transparency and uniformity. In order to enhance trust and promote utilization, charging station providers are advised to implement standardized and transparent pricing models, as well as advocate the long-term cost benefits of electric vehicles. The study also demonstrates that users' awareness of electric vehicles has a direct impact on their perceived value and the intention to use charging stations. Policymakers and EV manufacturers can implement educational campaigns to increase public awareness of EV benefits, technical aspects, and charging compatibility. These educational initiatives have the potential to mitigate user uncertainties and cultivate greater confidence in EV adoption.

It is imperative that policymakers use this research as a basis to formulate regulations and incentives that align with user preferences and behaviors. For example, the provision of subsidies for the development of charging infrastructure or the introduction of tax benefits for EV users has the potential to further enhance the perceived value of electric vehicles and accelerate their adoption.

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The Mediating Role of Consumer Cognition in the Relationship Between Live Streamers' Personal Qualities and Consumer Purchase Intention

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Received: 4 June 2025; Revised: 6 June 2025; Accepted: 9 June 2025

Abstract

Online live-streaming platforms have rapidly emerged as streaming media technology advances. E-commerce live-streaming is a new business concept that combines live-streaming with regular e-commerce, going beyond simple entertainment. Marketing hosts are essential to this new marketing paradigm. Therefore, the purposes of this study are to 1) examine the relationship between the personal characteristics of e-commerce live-streaming hosts and the intention of consumers to make a purchase, and 2) use consumer cognition as a mediating variable to further examine the relationship between the personal characteristics of live streamers and the intention of consumers to make a purchase. The findings indicated that consumer purchase intention was positively impacted by the personal characteristics of live streamers. Consumer cognition had a positive impact on consumer purchase intention and the relationship between live streamers' personal traits and consumer purchase intentions was mediated by consumer cognition, according to the statistical analysis.

Keywords: E-commerce live-streaming, personal traits, purchase intention, consumer cognition

Introduction

The rapid growth of mobile networks and smart devices has led to the emergence of live-streaming platforms, which have received considerable publicity. By the end of 2022, over 1,100 live-streaming platforms were operational, providing businesses with innovative ways to market products. Live-streaming marketing enhances consumer trust and shopping experiences compared to traditional online shopping. Major Chinese e-commerce platforms like Douyin, Taobao, and Kuaishou have adopted this trend, significantly altering consumer behavior. Streamers on platforms like Douyin can be categorized as influencers or seller streamers, with their followers count varying widely. The top streamer, Crazy Little Yang Ge, boasts over 98 million followers, showcasing the impact of individual traits on marketing effectiveness. Factors such as appearance, personality, and marketing ability, as outlined in interpersonal attraction theory, play a crucial role in influencing consumer purchase intentions (Luo, 2013). Positive traits in streamers can enhance consumer trust and increase purchase likelihood.

Hence, this research aims to explore the relationship between streamers' individual traits and consumer purchase intention, focusing on the following aspects: the impact of personal traits on purchase intention, the relationship between personal traits and consumer cognition, and the mediating role of consumer cognition in these dynamics. Understanding these relationships can help businesses refine marketing strategies and improve sales on e-commerce platforms (Luo, 2013).

Exploring the relationship between streamers' individual traits and consumer purchase intention is crucial for consumer behavior research. It helps in understanding the impact of live-streaming marketing on consumer behavior and provides valuable insights for marketing practices. This study explores how to enhance consumer engagement and increase transaction volumes on e-commerce platforms, such as Douyin, Taobao, and Kuaishou, in the context of rapid development in China's mobile internet and the widespread use of smart devices. This research specifically examines the following research hypotheses:

H1: Live streamers' personal traits have a positive effect on consumers' purchase intentions on e-commerce platforms
H2: Live streamers' personal traits have a positive effect on consumer cognition.
H3: Consumer cognition has a positive effect on consumer purchase intention.
H4: Consumer cognition mediates the relationship between live streamers' personal traits and consumer purchase intention.

Literature Review

The concept of Interpersonal Attraction Theory highlights the tendency to evaluate others positively or negatively, which is crucial for forming and maintaining relationships (Berger & Calabrese, 1974; Bekiari & Hasanagas, 2015). Interpersonal attraction was influenced by cognitive assessments of how well a person could meet others' needs, fostering communication and closeness (Han & Yang, 2018). In live-streaming sales, this interaction could create emotional bonds, with emotional and behavioral attraction playing key roles (Montoya & Horton, 2014). Factors influencing interpersonal attraction included individual traits, proximity, and reciprocity (Luo, 2013), with individual traits encompassing appearance, talent, and personality qualities.

E-commerce live-streaming merged with traditional e-commerce with real-time interaction, enhancing customer engagement and relationship-building (Tan, 2017; Liang, 2019). Hosts in this environment showcased products and engaged with consumers, thus creating a more authentic shopping experience (Xie et al., 2019; Gao, 2020). Personal traits of streamers, such as appearance, talent, and personality, significantly influenced consumer purchase intentions (Luo, 2013; Xu, 2013).

Consumer cognition refers to how consumers perceive and respond to products and marketing processes, influencing their purchase intentions (Fan, 2014). The conceptual framework illustrated that streamers' personal traits enhanced both consumer cognition and purchase intention, with cognition serving as a mediator in this process. The interplay between interpersonal attraction, personal traits of streamers, consumer cognition, and purchase intention was critical in the context of e-commerce live-streaming, shaping consumer behavior and decision-making (Zhang et al., 2016; Wang, 2021).

Figure 1 shows that live streamers' personal traits directly enhance consumer purchase intention (H1) and consumer cognition (H2). Consumer cognition further positively influences purchase intention (H3) and mediates the effect of streamers' traits on purchase intention (H4), indicating a pathway from traits to cognition to intention.

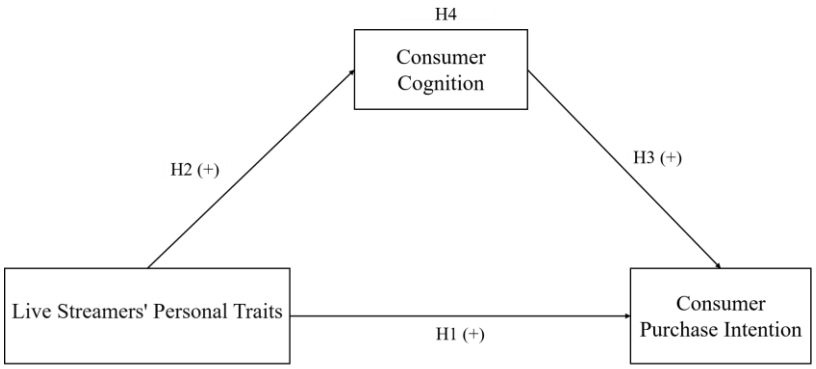


Figure 1: Conceptual Framework of Research

Methodology

Participants

This study used a quantitative research method. As previously described, the population of this study included Douyin users in China who had watched e-commerce live streams and those who had participated in purchasing products through these live streams, which consisted of hundreds of millions of individuals. Based on this large population size, the sample size used in this study was 413 internet users.

Instruments

The study used a questionnaire as an instrument, of which the researchers checked the reliability and validity. Reliability determines if the data were consistent, stable, and dependable. We performed this evaluation using Cronbach's Alpha coefficient, typically considering a value above 0.7 to indicate good reliability of the sample. In this study, Cronbach's alpha for each variable ranged between 0.83 and 0.95, and composite reliability (CR) ranged between 0.86 and 0.92, indicating good reliability the research variables.

Validity analysis refers to the effectiveness and accuracy of a questionnaire scale, i.e., assessing whether the design of the questionnaire items was reasonable. In this study, validity was measured using convergent validity and discriminant validity. Anderson and Gerbing (1988) suggested that if all item standardized factor loadings were greater than 0.5 and statistically significant, it indicated that the measurement scale had good convergent validity. Fornell and Larcker (1981) argued that the square root of the average variance extracted (AVE) for latent variables should be greater than the correlation coefficients between different variables, which indicated good discriminant validity.

The standardized factor loadings for all items in this study ranged between 0.70 and 0.91, and each indicator was statistically significant, demonstrating good convergent validity for each research variable. Furthermore, the square root values of the AVE for each variable ranged from 0.71 to 0.82, indicating that the discriminant validity of each item was also well established.

Despite the questionnaire for this study being developed through an extensive literature review and referencing established scales from prior research, the reliability and validity of the adapted questionnaire remained uncertain. Therefore, following the initial completion of all questionnaire content, a pilot survey was executed to ensure the measurement items' content and face validity. This study engaged three experts and scholars in relevant fields to assess the Item Consistency Index (IOC) of the questionnaire. They appraised each item in the questionnaire, assigning ratings of 1 (conforms to the measurement), -1 (does not conform to the measurement), or 0 (ambiguity regarding conformity). The IOC index for the questionnaire achieved a score of 1.00 across all aspects, as detailed in Table 1.

Table 1: IOC Evaluation Form for Questionnaire Items

Personal Traits		**Item Score**
1	I find that hosts with good looks and temperaments attract me more.	1
2	I pay special attention to whether the host's facial expressions make me feel comfortable.	1
3	The appearance and image of the host are very important.	1
4	The host's mental state affects the duration of time I watch the live stream.	1
5	It is important whether the host showcases any talents.	1
6	I prefer marketing hosts who are articulate.	1
7	A host's sense of humor can attract me.	1
8	The number of viewers watching the live stream affects my interest in the product.	1
9	A host's sincere personality makes me trust the products they promote more.	1
10	It is important to me whether the host promotes products truthfully.	1
11	The host's past behavior in adhering to ethical standards is important to me.	1
Consumer Cognition		**Item Score**
1	I find myself inexplicably wanting to watch some shopping hosts during their live streams.	1
2	After being attracted to a live stream, I tend to stay and watch for a longer time.	1
3	When watching a host I am interested in, I want to learn more about the products they are selling.	1
Consumer Purchase Intention		**Item Score**
1	I am willing to learn about the products being marketed by the host while watching Douyin shopping live streams.	1
2	I am willing to recommend the Douyin shopping live streams or marketing hosts I frequently purchase from to my friends.	1
3	When I see a desired product, I will make a purchase during the live stream.	1
4	In the future, I will consider purchasing products promoted by the host in Douyin shopping live streams again.	1

Data Collection

This study utilized a questionnaire survey method, and employed Wenjuanxing, a widely used online crowdsourcing platform in mainland China, to distribute questions and collect data from participants. The survey primarily was disseminated through Douyin live stream rooms and WeChat groups associated with Douyin e-commerce activities. In Douyin live stream rooms, the questionnaire was distributed using a simple random sampling method based on public screen replies. On WeChat, the questionnaire was shared in groups related to Douyin e-commerce activities. The data analysis section utilized statistical software, Mplus 7, to analyze the collected data.

Results and Discussion

Correlation Analysis

The correlation analysis in this study primarily verified the interrelationships among the variables and assessed the magnitude of correlation coefficients between them. It is important to note that correlation does not imply causation. Pearson correlation coefficients were used to reflect the degree of linear correlation between the variables and to determine whether these correlations were statistically significant. A higher value indicated a stronger linear relationship between the variables, and vice versa. A positive sign between two variables indicated a positive relationship, while a negative sign indicated a negative correlation.

A threshold value of 0.7 is often used as a benchmark. The correlations below this value suggested that there was no collinearity issue between the variables. As presented in Table 2, the correlation coefficients for each latent variable involved in this study were all below 0.7, indicating that there were no issues of multicollinearity among them.

Table 2: Correlation Analysis

	LSPT	CC	CPI
LSPT	1		
CC	0.619	1	
CPI	0.601	0.597	1

Note: LSPT = Live Streamers' Personal Traits, CC = Consumer Cognition,
CPI = Consumer Purchase Intention.

Model Fit Analysis

Analyzing the fit of a structural equation model (SEM) is crucial for testing how well the data conform to the hypothesized model. Fit indices evaluate whether the data and the hypothesized model match each other effectively. According to the standards recommended by Browne and Cudeck (1992), the fit indices for this study were as follows: $\chi^2 = 1378.32$, df = 786, $\chi^2/df = 1.75$, p = 0.000, CFI = 0.93, TLI = 0.95, RMSEA = 0.04, SRMR = 0.03. These results indicated that the model had a good fit. The specific results were displayed in Table 3.

These indices collectively suggested that the model was appropriately fitted to the data, thereby supporting the theoretical hypotheses with statistically significant and substantial fit measures.

Table 3: Model Fit Indices

Fit Index	Recommended Criteria	Model Result	Compliance
ML χ^2	Lower is better	1378.32	
Df	Higher is better	786	
χ^2/ Df	1<χ^2/ Df <3	1.75	Complies
CFI	>0.9	0.93	Complies
TLI	>0.9	0.95	Complies
RMSEA	<0.08	0.04	Complies
SRMR	<0.06	0.03	Complies

Testing Research Hypotheses

This study aimed to address four research questions through statistical hypothesis testing. The research questions were: 1) Do live streamers' personal traits influence consumer purchase intention? 2) Do live streamers' personal traits affect consumer cognition? 3) Does consumer understanding affect purchase intention? 4) Does consumer cognition mediate the relationship between live streamers' personal traits and consumer purchase intention? We conducted correlation, path, and mediation effects analyses to verify the theoretical hypotheses and models. After analyzing the collected data, the study yielded findings relevant to each of the questions, as detailed in the following parts.

Direct Effects Testing

Path analysis was utilized to investigate the causal relationships within the research model, specifically examining the direct effects among variables related to Research Questions 1 to 3. The Mplus 7 software was employed to facilitate this path analysis, testing the hypotheses and determining their support by the data. The results, displayed in Table 4, reveal that all unstandardized regression estimates for the variables are significant ($p < 0.001$), indicating that:

For research question 1, the finding supported H1 by postulating that live streamers' personal traits positively impact consumer purchase intentions. The standardized path coefficient from live streamers' personal traits to consumer purchase intention was 0.58, with a P-value < 0.001. This significant positive relationship indicated that consumers were more likely to intend to purchase products when live streamers exhibited favorable personal traits. This suggested that the attributes such as trustworthiness, attractiveness, and expertise of the live streamers played a crucial role in influencing consumers' purchasing decisions during live streams.

Regarding research question 2, the significant positive effect of live streamers' personal traits on consumer cognition validated H2, with a standardized path coefficient of 0.65 and a P-value < 0.001. The result showed that live streamers' personal traits significantly enhanced consumer cognition. In other words, when live streamers displayed strong personal traits, consumers were more likely to have positive cognitive responses toward the products or services being promoted. Such responses could include better understanding of product features, perceived value, and brand recognition.

For research question 3, the positive influence of consumer cognition on consumer purchase intention confirmed H3. The standardized path coefficient from consumer cognition to consumer purchase intention was 0.53, with a P-value < 0.001. This significant positive relationship indicated that higher levels of consumer cognition were associated with increased purchase intentions. This concluded that when consumers had a better understanding and perception of the products, they were more inclined to purchase them.

Furthermore, the Coefficient of Determination (R^2) values expounded substantial explanatory power for the variables within the model. Specifically, the R^2 for consumer cognition was 0.58, and for consumer purchase intention was 0.52, both surpassing the acceptable threshold of 0.33. These results implied that the model effectively accounted for a significant proportion of the variance in these constructs.

These results directly addressed the research questions by demonstrating significant relationships between the variables. The findings indicated that live streamers' personal traits not only directly influenced consumer purchase intentions but also affected consumer cognition, which in turn influenced purchase intentions.

Table 4: Research Model Hypothesis Analysis

DV	IV	Std. Est.	S.E.	Est./S.E.	*P*-Value	R^2	Hypothesis Support
CPI	LSPT	0.58	0.05	11.6	***	0.52	Supported
	CC	0.53	0.03	17.67	***		Supported
CC	LSPT	0.65	0.04	16.25	***	0.58	Supported

Note: DV=Dependent Variable**,** IV=Independent Variable, LSPT = Live Streamers' Personal Traits, CC = Consumer Cognition, CPI = Consumer Purchase Intention. *** = p<0.001.

Mediation Effects Testing

Mediation effect testing investigates whether an independent variable influences a dependent variable through a mediator. To address research question 4, the study examined whether consumer cognition mediated the relationship between live streamers' personal traits and consumer purchase intentions. The bootstrap method, a robust approach for testing mediation effects, was utilized with 1,000 resamples in Mplus 7 software, following Hayes (2009).

As shown in Table 4.4, the analysis indicated that consumer cognition significantly mediated the relationship between live streamers' personal traits and consumer purchase intentions. The standardized indirect effect of live streamers' personal traits on consumer purchase intention through consumer cognition was 0.47, with a P-value < 0.001. The 95% confidence interval did not include zero, confirming the presence of a mediation effect and supporting H4. The result suggested that consumer cognition partially mediated the relationship between live streamers' personal traits and consumer purchase intentions. In other words, live streamers' personal traits not only directly influenced consumer purchase intentions, but also enhanced consumer cognition, which in turn promoted purchase intentions.

Table 5: Consumer Cognition Indirect Effect Analysis

	Point Est.	Product of Coefficients			BOOTSTRAP 1000 TIMES 95%CI			
					Percentile		Bias corrected	
		S.E.	Est./S.E.	*P*-Value	Lower	Upper	Lower	Upper
LSPT→CPI	0.47	0.05	9.4	***	0.42	0.66	0.46	0.71

Note: LSPT = Live Streamers' Personal Traits, CC = Consumer Cognition, CPI = Consumer Purchase Intention. *** = p<0.001.

The findings were consistent with previous research, confirming the significant roles of live streamers' personal traits and consumer cognition in influencing purchase intentions in e-commerce live streaming. The results emphasized the need for companies to focus on both the selection of suitable streamers and the enhancement of consumer cognition through meaningful interaction. However, contrasts in some studies suggested that factors such as product attributes, consumer skepticism, and information overload may also significantly influence these relationships, indicating areas for future research.

Conclusion and Suggestions

This study investigated how live streamers' personal traits and consumer cognition affected purchase intentions in e-commerce live streaming. The results confirmed the previous findings that personal traits of streamers, such as attractiveness and expertise, positively influenced consumer purchase intentions (Xu et al., 2020; Chen and Lin, 2018). However, Cai and Wohn (2019) posited that in some contexts, the entertainment value of streamers was more critical. The study postulated that appealing personal traits enhanced consumer cognition, which aligned with the work of Lim et al. (2017) and Xu et al. (2020),

who found that influencers' authenticity and charisma improved product understanding. Additionally, the study reaffirmed the notion that consumer cognition positively impacted purchase intentions, as presented by Sun et al. (2019) and Hu and Chaudhry (2020), although it warns against information overload (Zhang et al., 2020). The research also pointed out consumer cognition as a mediator between personal traits and purchase intention, extending findings from Lou and Yuan (2019) and Wongkitrungrueng and Assarut (2020). Furthermore, it emphasized the role of interaction in enhancing cognition and purchase intentions, which was consistent with Kang et al. (2021) and Wu and Huang (2023), while cautioning that interaction without meaningful content may lead to consumer fatigue (Liu et al., 2021). To sum up, the study reinforces the importance of live streamers' traits and consumer cognition in driving purchase intentions, suggesting that the companies should select suitable streamers and foster meaningful interactions. It also points out the need for further research into factors like product attributes and consumer skepticism that may influence these dynamics. In future research, the relationship between personal traits, consumer cognition, and purchase intentions observed in e-commerce livestreaming could be explored in other industries, such as banking, insurance, and financial services. It is recommended that adjusting the variables to fit these contexts may reveal whether the influence of employee personal traits on purchase intentions differs across service industries, which is helpful for customer relationship management.

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Exploring the Impact of Studying Abroad on Chinese Students in Thailand: Academic, Cultural, and Personal Experiences

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Received: 24 March 2025; Revised: 25 May 2025; Accepted: 9 June 2025

Abstract

This study examines the motivations of 38 Chinese students studying abroad in Thailand, focusing on personal, academic, and professional goals. A Likert-scale questionnaire and follow-up interviews were used to identify the main reasons for studying in Thailand, including cultural immersion, language acquisition, personal development, and career advancement. The findings suggest that students are motivated by the opportunity to gain new experiences, improve English proficiency, and develop a global perspective. Financial considerations also play a role in the decision, as students perceive Thailand as an affordable destination offering quality education in English. Furthermore, students value the chance to gain independence and build international networks that may benefit their careers. The study concludes that studying abroad is a strategic decision for Chinese students, with long-term effects on both personal and professional growth. Further research is needed to examine the long-term outcomes of studying abroad and to compare the motivations of students from different cultural backgrounds.

Keywords: Chinese nationals, international education, cultural immersion, cross-cultural communication, study abroad, challenges, academic growth.

Introduction

The trend of Chinese students studying abroad has become more common in today's globalised world. An increasing number of Chinese students choose to pursue higher education in foreign countries to experience different cultures, improve language skills, and expand academic and professional opportunities. This reflects the growing importance of international education as students seek a more diverse academic experience.

A primary reason for Chinese students studying abroad is the opportunity to access higher-quality education not always available in China. Many foreign universities are recognised for academic excellence and advanced research facilities. These institutions offer students the chance to learn from experienced professors and take part in research. Studying abroad provides an academic environment that supports independent and creative thinking, which encourages intellectual growth and future career prospects (Mazzarol, 2022; Wintre, 2015).

Studying abroad supports both academic and personal development. Living independently in a foreign country requires students to adapt to new environments, face unfamiliar situations, and become more self-reliant. These experiences help develop confidence, adaptability, and problem-solving skills, preparing students for success in a competitive world. The international experience, together with improved language skills and

cultural understanding, also increases employment opportunities, as employers value these qualities (Nurindra, 2022).

However, studying abroad presents several difficulties for Chinese students, including language issues, cultural differences, homesickness, and financial pressure. Adapting to a new academic system, learning new social norms, and dealing with isolation can be demanding. The cost of studying abroad is also a concern for many students, who often rely on scholarships, grants, or loans to fund education. Even with these difficulties, many students remain committed to their goals, recognising that the long-term academic, personal, and professional benefits of studying abroad outweigh the problems.

Chinese students studying abroad are part of a growing global trend in education. These students aim to broaden perspectives, gain experience, and prepare for an interconnected and competitive future. Studying in foreign countries provides access to high-quality academic programmes, supports cultural understanding, helps build useful skills, and improves career prospects. Although the difficulties of studying abroad are significant, the outcomes of international education offer long-term benefits.

Problem Statement

The increasing number of Chinese nationals pursuing education in international programs, particularly in Thailand, has raised questions about the factors influencing their decision to study abroad and the challenges they face during their academic journey. Although there is considerable research on the benefits of studying abroad, few studies focus on the specific experiences and motivations of Chinese students in a Southeast Asian context, such as Thailand. Furthermore, the impact of studying in a multicultural and diverse environment on their academic, personal, and professional development has not been fully explored. Understanding these motivations and challenges is crucial for higher education institutions to better support international students, ensuring that they have a positive and successful experience abroad.

Significance of the Research

This research is significant as it provides valuable information on the experiences of Chinese students in Thailand's international academic programmes. It examines the motivations for studying abroad, such as academic goals, language practice, cultural immersion, and career advancement. The study identifies the factors influencing Chinese students' decisions to study in a foreign country. It also explores the difficulties students face, including cultural adjustment, language difficulties, and financial pressures, and examines the role of institutional support in easing these issues. The findings can help develop tailored programmes and services to improve the academic and social integration of international students, enhance their study-abroad experience, and promote global citizenship. This research is also useful for policymakers, educators, and institutions in other countries seeking to attract and support international students.

Objectives of the Research

1) To identify the key motivational factors influencing Chinese students' decision to pursue higher education abroad, specifically in Thailand.

2) To examine students' personal, academic, and professional goals associated with studying in an international setting.

3) To explore students' expectations regarding cultural experiences, language acquisition, and social integration during their studies abroad.

4) To assess the perceived value of an international degree in enhancing future employment and career opportunities among Chinese students.

5) To understand the role of financial considerations in destination selection and overall decision-making related to studying abroad.

6) To gain qualitative insights into students' perceptions of independence, global perspective, and personal development as outcomes of international education.

Literature Review

Pursuing education abroad provides students with the opportunity to experience new cultures, expand perspectives, and develop skills that support both academic and professional growth. One benefit of international education is the chance to interact with people from diverse cultural backgrounds. Contact with locals and international peers introduces students to different customs and ways of life, broadening their worldview. This cultural experience supports intellectual and emotional development. Cultural immersion is a central aspect of studying abroad. Students encounter new traditions, values, and social norms, which can lead to personal change. This exposure helps reduce stereotypes and assumptions about other cultures. Engaging with local customs and learning the language improves cross-cultural communication, which is valuable in a globalised society. This setting also provides students with real-life opportunities to practise language skills, improving both fluency and cultural understanding (Fong, 2020; Genkova et al., 2021; Kitsantas & Meyers, 2001; Wang, 2022).

For students studying foreign languages, immersion in a country where the language is spoken greatly improves proficiency. Living in a foreign country offers daily opportunities to converse with native speakers, improving speaking and listening abilities. These interactions allow students to learn language nuances, slang, and colloquial expressions that are not typically taught in traditional classrooms. This exposure increases fluency, vocabulary, and confidence (Ngoc & Huong, 2021; Samira & Karfa, 2024). Ingram (2005) examined a study abroad program in Avignon, France, and found that students provided positive feedback. These programs help students meet language requirements and integrate interdisciplinary learning. The study emphasized the importance of international programs in improving language skills and supporting the internationalization of liberal arts education (Ingram, 2005).

Studying abroad also broadens students' understanding of global issues. Living in another country exposes students to new ideas, perspectives, and ways of thinking, helping them better understand international relations, economics, and culture. This global perspective promotes empathy and adaptability, qualities that are highly valued in the modern workforce (Tarrant et al., 2015). In addition, studying abroad creates valuable networking opportunities. Students can interact with peers and professionals from around the world, building relationships that can support their academic and career goals. These connections provide valuable knowledge about global job markets, cultural norms, and business practices, all of which are useful in a competitive job market. Friendships formed during this time also broaden students' understanding of global issues and encourage cultural awareness (Dewey et al., 2013; Huang et al., 2014).

Studying abroad also provides emotional and social benefits. Although living in another country can be demanding, forming friendships with individuals from varied backgrounds offers support and a sense of belonging. These connections help students manage homesickness and adjust to a new setting. The support from these relationships contributes to personal development and builds lasting connections beyond academic life. In addition, studying abroad helps students develop personal, professional, and life skills such as adaptability, resilience, and problem-solving. Employers often value these qualities, as

students who study abroad show the ability to function well in diverse contexts. Living in a foreign country also encourages self-reflection, allowing students to recognise personal strengths and weaknesses, build confidence, and become more independent. As students adapt to unfamiliar environments, they improve their problem-solving skills. Managing language differences, navigating new systems, and adjusting to cultural norms helps develop resilience and practical thinking. These experiences support confidence and competence, helping students prepare for future careers (Altinay et al., 2024; Beaven & Spencer-Oatey, 2018; Cho & Morris, 2015; Cubillos & Ilvento, 2012; Fong, 2020).

A significant benefit of studying abroad is the development of employability. In the global job market, employers seek candidates with international experience and a global perspective. Studying abroad shows that students are adaptable and capable of navigating different cultural contexts. These qualities are important for roles that involve cross-cultural communication, international collaboration, or an understanding of global economic trends. Studying abroad also enhances cross-cultural communication skills, which are highly valued by employers (Genkova & Kruse, 2020; Duke, 2023).

The exposure to diverse cultures and perspectives that comes with studying abroad increases students' empathy and promotes a more inclusive worldview. This understanding of diversity enhances students' personal lives and academic experiences. As students gain new skills, form international connections, and explore different ways of thinking, they become more competitive in the global job market. Employers value the cross-cultural competencies, language skills, and global awareness that students gain through studying abroad (Kuimova, 2017).

Studying abroad also supports both academic and personal development. Students are exposed to different educational systems, which helps them develop critical thinking and a wider academic outlook. Access to specialised courses or research opportunities not offered at home institutions adds further value to their studies. Cultural immersion contributes to intellectual and emotional growth, improving communication, problem-solving, awareness of cultural differences, and academic performance. These experiences enhance employment prospects after graduation (Cardwell, 2020; Jæger & Gram, 2015; Mazzarol, 2022; Wintre, 2015).

Overall, pursuing education abroad offers an invaluable experience that allows students to develop a wide range of skills that enhance both their personal and professional lives. Immersing in a new culture, improving language abilities, gaining a global perspective, and building a professional network prepare students for success in a connected and competitive world. This experience deepens academic understanding and promotes personal growth, self-confidence, and employability, making it a transformative and rewarding opportunity (Altinay et al., 2024; Cardwell, 2020).

Methodology

The study employed a quantitative research approach, which centres on the collection and analysis of numerical data to gain a deeper understanding of a specific subject. This method is commonly used in educational research and typically involves gathering data through surveys. The quantitative approach is valued for its ability to produce objective, reliable results, enabling researchers to draw general conclusions based on the data. However, one limitation of this method is its tendency to oversimplify complex phenomena by converting them into numerical values (Lewis-Beck et al., 2003). The questionnaire used in this study was adapted from Krzaklewska (2008). The Cronbach's Alpha reliability test was .80 and therefore the questionnaire was deemed reliable for data collection.

The participants consisted of 38 Chinese nationals enrolled in an international program at a university in Thailand. Data collection was carried out using a 5-point Likert scale questionnaire, which assessed various motivations for studying abroad. These included seeking new experiences, practicing foreign languages, learning a new culture, meeting new people, living abroad, having fun, enhancing employment prospects, improving knowledge, gaining independence, obtaining a degree, and the cost of education. Additionally, interview questions were incorporated to supplement and provide further context to the questionnaire responses.

Results and Discussion

The following section provides the results from the questionnaire and interview and discusses their relevance and draws conclusions. A total of 38 respondents completed the survey. Table 1 provides an overview of agreement levels across twelve motivation statements.

Table 1. Agreement percentages for study-abroad motivation statements (N = 38).

Statement	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)
I chose to study abroad to gain new experiences.	0	5.3	7.9	86.8
Studying abroad provides me with an opportunity to practice a foreign language.	0	2.6	13.2	84.2
I am interested in learning about a new culture by studying abroad.	0	0	31.6	68.4
Meeting new people from diverse backgrounds is an important reason for me to study abroad.	5.3	10.5	28.9	55.3
Living abroad offers me a unique opportunity to experience life in another country.	0	0	15.8	84.2
I am looking forward to having fun and exploring new places while studying abroad.	0	5.3	26.3	68.4
Studying abroad will enhance my employment prospects in the future.	0	0	21.1	78.9
I believe that studying abroad will help me improve my knowledge and skills in my field of study.	0	2.6	7.9	89.5
Studying abroad will help me become more independent.	0	2.6	21.1	76.3
Obtaining an international degree is an important goal for me.	0	5.3	13.2	81.6
The cost of education abroad is an important factor in my decision to study abroad.	0	7.9	23.7	68.4
I believe that studying abroad will help me develop a global perspective on important issues.	0	2.6	10.5	86.8

The results of the Likert-scale questionnaire reveal that Chinese students studying in an International Business Management program in Thailand are highly motivated by a blend of personal, academic, cultural, and professional factors. One of the most prominent findings is the importance of personal enrichment and the desire for new experiences. An overwhelming 94.7% of respondents agreed or strongly agreed that gaining new experiences was a key reason for studying abroad, while 100% agreed that living abroad offers a unique opportunity to experience life in another country. Additionally, 94.7% expressed that they were looking forward to having fun and exploring new places. These results indicate that students are deeply motivated by the chance to step outside their familiar environments, broaden their perspectives, and enjoy the personal growth that comes with immersion in a different society.

Language development is another significant motivator. A combined 97.4% of students were in agreement that studying abroad would help them practice a foreign language, most likely English, which is commonly used in Thai international programs. This shows that students view language acquisition as a practical and essential skill for future success. Improved communication abilities are not only valued for academic purposes but also as a tool for international career advancement and global engagement.

Academically, students demonstrate a clear focus on long-term benefits. A total of 97.4% agreed or strongly agreed that studying abroad would help them improve their knowledge and skills in their field of study. Even more strikingly, 100% believed that the experience would enhance their employment prospects, and 94.8% indicated that obtaining an international degree was an important goal. These findings suggest that students perceive international education as a strategic investment that can give them a competitive advantage in both domestic and global job markets. The decision to study abroad is not simply about earning a degree overseas, but about gaining exposure to international business practices, developing cross-cultural competencies, and building a resume that will stand out.

Cultural exploration and the opportunity to build global networks also rank high among the students' motivations. All respondents expressed an interest in learning about a new culture, and 84.2% agreed or strongly agreed that meeting people from diverse backgrounds was an important reason for studying abroad. These responses reflect a desire not only for academic knowledge but also for interpersonal development and cultural fluency. Students recognize the value of building relationships across national and cultural boundaries, which is particularly relevant in the field of international business.

Personal development through increased independence emerged as another key theme. A combined 97.4% of students agreed or strongly agreed that studying abroad would help them become more independent. Living and studying in a foreign country presents daily challenges, from managing finances to navigating new social and academic environments, all of which contribute to students' growth in maturity and self-reliance. This aspect of independence is clearly viewed as a vital component of the overall international education experience.

Cost, while not the most dominant factor, still plays a notable role in decision-making. A total of 92.1% of respondents agreed or strongly agreed that the cost of education abroad was an important consideration. Thailand's affordability compared to Western countries likely influenced these students' choice of destination, offering a balance between high-quality education and manageable expenses. This financial practicality, combined with the country's cultural richness and accessibility, makes Thailand an appealing option.

Finally, a global outlook was also a significant motivator. Nearly all students—97.3%—believed that studying abroad would help them develop a global perspective on important issues. This reflects their intention to become globally aware citizens who are prepared to

work in multicultural environments and address challenges from a more informed, international viewpoint. Developing a global mind-set is especially relevant for students of international business, who will need to understand and navigate complex global systems and cultural nuances throughout their careers.

The results from the questionnaire clearly show that Chinese students studying in Thailand are driven by a well-rounded set of motivations. They are not only seeking academic credentials but also looking to grow personally, culturally, linguistically, and professionally. The Thai educational setting, offering affordability, cultural richness, and academic relevance, aligns well with these multifaceted goals. Institutions that recognize and support these motivations will continue to attract and empower international students who are eager to engage with the world.

The interview results reveal a consistent set of motivations and expectations among Chinese students studying international business management in Thailand. Students chose Thailand primarily for its affordability, safety, and the availability of quality English-language education. Its cultural proximity to China and position within the rapidly developing Southeast Asian business environment also played a role in their decision.

When students spoke about gaining new experiences, they referred to cultural immersion, personal development, and the opportunity to learn beyond traditional academic settings. For them, studying abroad means stepping out of their comfort zones, facing challenges independently, and growing as individuals.

Language acquisition was seen as highly important, with most students eager to improve their English proficiency through daily interaction with both local Thais and fellow international students. This was closely tied to their excitement about cultural exchange and many looked forward to experiencing Thai traditions, festivals, and daily life. While some anticipated challenges in cultural adjustment, they expressed openness and curiosity.

Students also hoped to build diverse social and professional networks, including friendships with international peers and connections with industry professionals. These relationships were seen as valuable assets for both personal development and future career opportunities. Independence was another key theme, with many acknowledging that living abroad would help them develop essential life skills such as time management, budgeting, and emotional resilience.

Career advancement emerged as a strong underlying motivation. Students believed that international education would make them more competitive in the job market, particularly in global business settings. Although cost was an important consideration, it was not the primary driver; most students felt that Thailand offered good value for money, and they approached the financial aspect with careful planning and family support.

Students were also mindful of the challenges they might face, including language barriers, homesickness, and adapting to new customs. However, they expressed confidence in their ability to manage these through openness, support networks, and time. Lastly, they anticipated that studying abroad would expand their worldview and make them more globally aware. They expected to return home with a broader, more culturally sensitive perspective that would influence both their personal lives and professional paths.

Pursuing education in another country offers students the opportunity to immerse themselves in a new culture, acquire important life skills, and broaden their academic perspectives. This experience challenges students to step outside of their comfort zones and exposes them to new languages, customs, and ways of thinking. As a result, students develop a more global outlook and improve their ability to communicate across cultures.

Enrolling in a foreign institution also grants access to academic programs and courses that may not be available in the home country. This is particularly beneficial for students who seek to expand their academic knowledge and explore new fields of study. Additionally,

time spent abroad can enhance students' competitiveness in the job market, as employers value the international experience, adaptability, and skills gained while studying in another country.

Studying abroad also presents difficulties. Students may have trouble adjusting to a new culture, language, and educational system. To navigate these issues, students should seek support from the host institution, professors, and peers. Another concern is the financial cost, which may include expenses for accommodation, travel, and visas. Careful planning and budgeting are necessary to maximize the international study experience.

The benefits of studying in a foreign country outweigh the obstacles. This experience can be transformative, allowing students to develop a deeper understanding of themselves and the world. It also helps students build independence, resilience, and adaptability. Furthermore, studying abroad often leads to lasting friendships and memorable experiences that continue to impact students long after they return home. Overall, studying internationally offers a valuable opportunity for personal and academic growth, encouraging students to expand their horizons and push themselves in meaningful ways.

Conclusion and Suggestions

This study highlights the multifaceted motivations of Chinese students pursuing higher education in Thailand. The findings from both the Likert-scale questionnaire and follow-up interviews reveal that students are strongly driven by the desire for personal growth, international exposure, academic advancement, and enhanced career opportunities. Cultural immersion, language development, and gaining a global perspective were also identified as important aspirations. Thailand’s affordability, safety, and reputation for providing English-medium education make it an attractive destination for these students.

In addition to academic goals, students place significant value on the social and personal aspects of studying abroad. Their expectations go beyond the classroom to include building international networks, becoming more independent, and developing resilience through real-world experiences. While financial considerations do influence their decision-making, students generally view the cost of studying in Thailand as manageable, especially when weighed against the long-term benefits. Overall, the study illustrates that studying abroad is a strategic and holistic endeavour for Chinese students, one that aligns closely with their academic, professional, and personal ambitions.

To build on these findings, future research could explore the long-term outcomes of studying abroad for Chinese students, such as how their international education impacts career progression, entrepreneurial activity, or global mobility after graduation. Comparative studies involving students from other countries or regions could also offer deeper insights into whether motivations and experiences differ by cultural background.

Additionally, research could examine how well students’ expectations match their actual experiences during their time abroad, particularly in areas like academic satisfaction, language improvement, and social integration. Another useful avenue would be to assess the role of institutional support systems in shaping students' adaptation, well-being, and academic success. These directions could contribute to more targeted policy-making and support services for international students in Thailand and beyond.

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