

## Research article

# Linking perceived innovativeness, co-creation value, and personal innovativeness to satisfaction and loyalty in local coffee shops

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### ABSTRACT

This study examines Indonesia's fourth-wave local coffee shop evolution, assessing how four customer-perceived innovativeness (CPI) dimensions—menu, technological, experiential, and promotional impact satisfaction and loyalty. It tests value co-creation (VCC) as a mediator and personal innovativeness (PIN) as a moderator, addressing gaps in how rapid menu changes and digital services shape preferences in emerging markets. A survey of local coffee shop patrons was analyzed using partial least squares structural equation modeling (PLS SEM) to evaluate direct effects, VCC mediation, and PIN moderation in a novel model. Technological and experiential innovativeness boost satisfaction significantly; menu and promotional innovativeness have non-significant or negative direct effects. All CPI dimensions positively influence VCC, which fully mediates menu/promotional paths to outcomes and partially mediates technological/experiential paths. PIN moderates only the technological innovativeness-satisfaction link. Conclusions emphasize VCC as the key mechanism converting innovations to loyalty, with domain-specific effects. Managers should focus on technology and experiential innovations that foster VCC. The study highlights boundary conditions for innovation-value-loyalty processes in emerging service markets. The paper uniquely positions VCC as the core mediator between CPI dimensions and outcomes, while delineating PIN's limited moderating role—novel in clarifying heterogeneous effects and mechanisms in underexplored coffee shop contexts.

### KEYWORDS

Customer perceived innovativeness; value co-creation; personal innovativeness; customer satisfaction; customer loyalty

## Introduction

Coffee has evolved from a global commodity into a cultural-experiential product integral to social interactions and daily rituals, celebrated for its unique regional flavor profiles and bioactive benefits (Ösz et al., 2022). Historically, it transitioned from Middle Eastern social spaces to European intellectual centers and eventually entered the Indonesian archipelago through colonial trade (Pendergrast, 2008). The modern coffee landscape in Indonesia is now characterized by a surge in commercial growth. This expansion is driven by Millennial and Gen Z consumers who view coffee consumption as a social ritual, facilitated by increasing affluence and digital platforms (Rizaty, 2022). Amid fierce competition, local brands are being pressured to differentiate themselves through innovation in product, experience design, and servicescapes (Rizaty, 2022) to enhance satisfaction. Understanding these dynamics is crucial for sustaining growth in the highly competitive cultural-service economy. Preliminary research indicates that while overall acceptance is high, "very satisfied" ratings remain limited, highlighting a lack of performance in meeting evolving expectations (Rizaty, 2022). Therefore, it is necessary to investigate how the four dimensions of Customer Perceived Innovativeness (CPI)—menu, technology, experience, and promotion—influence customer

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satisfaction and loyalty in Indonesia's growing local coffee shop sector. The research reveals inconsistencies in the existing empirical evidence; while some studies link innovation directly to satisfaction (Kim et al., 2022; Song et al., 2019), others show insignificant or indirect effects (Chaudhary et al., 2025; Mahmoud et al., 2018). To address this gap, this study proposes a new conceptual model that positions value co-creation (VCC) as a mediator and personal innovation (PIN) as a moderator, extending the Service-Dominant Logic to the context of emerging markets (Prahalad & Ramaswamy, 2004; Vargo & Lusch, 2004).

Although innovation is a strategic imperative (Kim et al., 2017), its translation into customer retention is not automatic. The rapid adoption of coffee-to-go models and digital marketing tools has created a complex environment where the impact of specific innovation types on satisfaction remains ambiguous (Manhas et al., 2024; Setiawan et al., 2025). This study addresses important questions regarding the mechanisms by which perceived innovation translates into satisfaction and loyalty. Specifically, it asks: How do different dimensions of innovation (menu, technology, experience, promotion) influence customer satisfaction? Does customer engagement through value co-creation mediate this relationship? And does customers' personal propensity toward novelty (PIN) moderate these effects? The complexity lies in the heterogeneity of customer responses. Diffusion of innovation theory suggests that adoption varies based on innovative cues (Panigrahi et al., 2021; Rogers, 1983). Innovation may not directly satisfy customers, but rather stimulate participation and knowledge exchange and co-creation, which in turn enhances perceived quality (Ghali et al., 2024; Ordanini & Parasuraman, 2011). Furthermore, customers with high PIN may respond differently than customers with less innovativeness, a boundary condition that remains underexplored in the coffee shop context (Citrin et al., 2006; Persaud & Schillo, 2017). Therefore, the objectives of this study are to: (a) analyze the influence of multidimensional CPI on satisfaction and loyalty; (b) empirically test the mediating role of VCC in channeling innovation into satisfaction (Ramaswamy & Ozcan, 2018; Yen et al., 2020); and (c) examine the moderating effect of PIN to explain response heterogeneity (Khan et al., 2019) with the aim of providing targeted segmentation strategies and clarifying the resource integration process in the Indonesian coffee market.

## Theoretical framework

Customer Perceived Value (CPV) is the overall assessment of an offering's utility, determined by the trade-off between perceived benefits (functional, emotional, social) and sacrifices (monetary, temporal, effort, risk) (Zeithaml, 1988). Grönroos (1997) expanded this concept by emphasizing that value is co-created through interactions and relationships rather than being inherent solely in products. Multidimensional CPV acts as a mediator linking service attributes to satisfaction and an affective post-consumption response since elevated perceived value increases the likelihood of satisfaction (Grönroos, 1997; Oliver, 1976; Zeithaml, 1988).

Customer loyalty represents a long-term commitment to a brand or service provider, manifested through repeat patronage, advocacy, positive word-of-mouth, and an increased share of wallet (Bourdeau et al., 2024; Oliver, 1999). This commitment is cultivated through cumulative positive experiences that enhance satisfaction, trust, and perceived value across functional, emotional, and social dimensions, alongside participation in co-production which fosters psychological ownership (Dhisasmitho & Kumar, 2020; Hwang et al., 2021; Moise et al., 2020). The progression from loyalty intention to action is further moderated by corporate social responsibility (CSR) initiatives and demographic factors (Chi & Phan, 2025; Pham, 2024). Customer satisfaction is defined as an evaluative and emotional response derived from the disconfirmation between initial expectations and actual performance (Oliver, 1976). It encompasses positive affective reactions when outcomes meet or exceed expectations (Lee et al., 2018a; Tse & Wilton, 1988) and involves assessments of specific service attributes such as quality, responsiveness, and price fairness (Dhisasmitho & Kumar, 2020; Mensah & Mensah, 2018). In co-creation contexts, satisfaction is bolstered by firm-supported customer participation, which increases service relevance and personalization (Grissemann & Sauer, 2012). Furthermore, specific experiential factors including gastronomic attributes, service technologies (e.g., QR codes, e-menus), interactivity, and enjoyment contribute to satisfaction by enhancing usability and efficiency (Ayad & Hasanein, 2024; Orden-Mejía & Moreno-Manzo, 2024; Yiğitoğlu et al., 2025).

Innovation involves the development and application of novel ideas, products, or methods, whether through linear R&D processes or non-linear, feedback-driven models (Phillips, 2016). Schumpeter (1947) emphasized the entrepreneur's role in "creative destruction" as a driver of economic transformation. In the coffee shop sector, innovativeness is multidimensional, spanning menu and product variety (Kim et al., 2018; Yen et al., 2020), technology integration (Hwang et al., 2021; Kim et al., 2018; Larivière et al., 2017), experiential factors such as servicescape and ambiance (Ding & Keh, 2017; Kim et al., 2018), and promotional strategies (Shankar et al., 2010). Customer Perceived Innovativeness (CPI) reflects the consumer's evaluation of an offering's novelty and superiority relative to alternatives. It integrates technological innovativeness, relative advantage, and affective responses like excitement, thereby shaping

utilitarian and hedonic attitudes (Lowe & Alpert, 2015). Factors such as novelty, feasibility, ease of use, and aesthetics further influence CPI, driving product relevance and adoption intentions (Boisvert & Khan, 2022). Consequently, CPI functions as a complex cognitive-affective construct that predicts value judgments, trial willingness, and purchase behavior (Boisvert & Khan, 2022; Lowe & Alpert, 2015).

## Hypothesis development

This study constructs an integrated framework grounded in Service-Dominant Logic (SDL) (Vargo & Lusch, 2004) and Diffusion of Innovations (DOI) theory (Rogers, 1983) to elucidate the mechanisms connecting CPI to satisfaction and loyalty in Indonesian coffee shops. CPI acts as a primary antecedent of value creation by enhancing CPV across functional, emotional, social, and cognitive dimensions (Zeithaml, 1988). Innovations in menus, technology, experiences, or promotions elevate perceived benefits while reducing sacrifices, thereby stimulating active value co-creation behaviors such as feedback and advocacy (Vargo & Lusch, 2004). SDL suggests that these innovations provide resources for customer integration, resulting in superior value-in-use and stronger relational bonds (Omar et al., 2018; Vargo & Lusch, 2004).

Simultaneously, DOI theory explains the moderating role of personal innovativeness (Rogers, 1983). Highly innovative individuals possess greater tolerance for uncertainty and evaluate novelty more favorably regarding relative advantage and compatibility (Midgley & Dowling, 1978). Consequently, personal innovativeness is posited to amplify the impact of CPI on satisfaction and strengthen engagement in co-creation, as innovative consumers are better equipped to derive experimental value (Citrin et al., 2006; Persaud & Schillo, 2017).

### *The influence of CPI on customer satisfaction*

CPI enhances satisfaction by elevating CPV, where benefits surpass sacrifices (Zeithaml, 1988). Specifically, menu innovativeness drives functional value through quality and variety, and hedonic value via sensory pleasure. These elements generate positive disconfirmation, enriching experiential utility and fostering repeat patronage (Baiony et al., 2019; Zeithaml, 1988). Aesthetic presentation and specialty options in fine dining directly increase satisfaction and strengthen the establishment's image (Choi et al., 2022; Ding et al., 2022; Thanh et al., 2024). Furthermore, menu diversity strengthens the customer-outlet relationship, contributing to long-term loyalty (Laely et al., 2024; Lee & Kim, 2022).

*H1: Perceived Menu Innovativeness has a significant and positive effect on Customer Satisfaction.*

Perceived technology-related service innovativeness enhances utilitarian and emotional value by offering efficiency, convenience, and personalization. Features such as high-speed Wi-Fi, mobile apps, and e-menus improve perceived usefulness, driving satisfaction (Ariffin et al., 2021; Lee et al., 2018a). Interactive technologies (e.g., AR visualizations) heighten user engagement and imagination, increasing purchase intentions (Ayad & Hasanein, 2024; Yim & Yoo, 2020). In hospitality, technology enables effective service recovery and personalization, strengthening CPV and loyalty (Tai et al., 2021; Thanh et al., 2024).

*H2: Perceived Technology-Related Service Innovativeness has a significant and positive effect on Customer Satisfaction.*

Perceived experiential innovativeness contributes to emotional and social value through servicescape design and personnel interactions. An innovative atmosphere and responsive interactions create affective engagement and self-congruity that support satisfaction (Chun & Nyam-Ochir, 2020; Kim et al., 2018; Thanh et al., 2024; Elements such as ambience and authenticity enhance the physical store experience (Lee & Chuang, 2022; Pu et al., 2023), while the integration of physical and digital experiences helps maintain satisfaction (Pu et al., 2023).

*H3: Perceived Experiential Innovativeness has a significant and positive effect on Customer Satisfaction.*

Perceived promotional innovativeness enhances satisfaction by elevating awareness and psychological relevance. Strategies such as influencer collaborations and tailored loyalty programs boost engagement and perceived value (Anas et al., 2023; Jamil et al., 2022; Yen et al., 2020). Personalized loyalty initiatives amplify consumer happiness (Agarwal et al., 2022; Myftaraj & Trebicka, 2023), while influencer trust bolsters post-purchase satisfaction (Pop et al., 2022).

*H4: Perceived Promotional Innovativeness has a significant and positive effect on Customer Satisfaction.*

### ***Influence of CPI on value co-creation***

CPI drives value co-creation by increasing CPV, motivating customer participation (Zeithaml, 1988). Menu innovativeness encourages feedback on products; technology innovativeness facilitates technical interaction and testing; experiential innovativeness invites collaboration in experience design; and promotional innovativeness triggers engagement through content sharing. When initial CPV is high due to clear benefits, customers are more willing to invest effort in co-creation, viewing it as an investment in future value (Zeithaml, 1988). Literature indicates that CPI across these domains stimulates co-creation by enhancing perceived benefits and enabling contributions (Clauss et al., 2019; Ghali et al., 2024; Mahmoud et al., 2018; Rather & Hollebeek, 2021; Tabeck et al., 2024).

*H5: Perceived Menu Innovativeness has a significant and positive effect on Value Co-Creation.*

*H6: Perceived Technology-Related Service Innovativeness has a significant and positive effect on Value Co-Creation.*

*H7: Perceived Experiential Innovativeness has a significant and positive effect on Value Co-Creation.*

*H8: Perceived Promotional Innovativeness has a significant and positive effect on Value Co-Creation.*

### ***The influence of value co-creation on customer satisfaction and loyalty***

Within the SDL framework, value co-creation (VCC) influences satisfaction and loyalty through integrative mechanisms. Value is realized when customers integrate personal resources with firm offerings to generate value-in-use (Vargo & Lusch, 2004). This process enhances service relevance, augmenting perceived benefits and satisfaction (Payne et al., 2008). Repeated VCC interactions build trust and shared understanding (Grönroos & Voima, 2013), while active participation fosters ownership and commitment, leading to long-term loyalty (Pralhad & Ramaswamy, 2004). Empirical evidence across tourism, hospitality, and retail sectors confirms that customer participation heightens satisfaction and revisit intentions (Bordian & Gil-Saura, 2021; Dias et al., 2024; Grisseman & Sauer, 2012; Kim et al., 2019; Tran et al., 2023)

*H9: Value Co-Creation has a significant and positive effect on Customer Satisfaction.*

*H10: Value Co-Creation has a positive and significant effect on Customer Loyalty.*

### ***The influence of customer satisfaction on customer loyalty***

Customer satisfaction fosters loyalty by enhancing perceived value, emotional attachment, and trust, which translate into repeat patronage and advocacy (Lee et al., 2018; Song et al., 2019). Evidence in coffee shop contexts indicates that satisfaction operates as a key antecedent to both attitudinal and behavioral loyalty, motivating continued usage and sustaining brand commitment (Kim et al., 2021). Service quality, particularly food quality, drives customer satisfaction, a critical antecedent to revisit intention (Mtukushe et al., 2024).

*H11: Customer Satisfaction has a significant and positive effect on Customer Loyalty.*

### ***The role of value co-creation as a mediator***

SDL provides the basis for conceptualizing VCC as the mediator between CPI and satisfaction. Firms offer value propositions, but realized value depends on customer coproduction (Vargo & Lusch, 2004). CPI elements act as facilitators of this coproduction capacity: menu flexibility allows alignment with needs; technology supplies collaborative tools; experiential design aids benefit interpretation; and promotional dialogue cultivates participation cues. VCC mediates this relationship by expanding co-production capabilities and improving relational interaction quality, both of which increase the congruence between value propositions and lived experience. Practically, co-creation translates CPI into heightened CPV, which then drives satisfaction. Previous studies confirm that VCC mediates the influence of innovativeness on satisfaction by translating innovation perceptions into perceived utility and reducing uncertainty (Ghali et al., 2024; Kim et al., 2019; Mahmoud et al., 2018).

*H12: Value Co-Creation mediates the effect of Perceived Menu Innovativeness on Customer Satisfaction.*

*H13: Value Co-Creation mediates the effect of Perceived Technology-Related Service Innovativeness on Customer Satisfaction.*

*H14: Value Co-Creation mediates the effect of Perceived Experiential Innovativeness on Customer Satisfaction.*

*H15: Value Co-Creation mediates the effect of Perceived Promotional Innovativeness on Customer Satisfaction.*

### ***The moderating role of personal innovativeness on CPI and satisfaction***

Diffusion Of Innovation (DOI) theory suggests that personal innovativeness the propensity to adopt innovations earlier than peers—moderates the relationship between CPI and satisfaction (Midgley & Dowling, 1978; Rogers, 1983). Personal innovativeness modulates cognitive and behavioral responses, strengthening the effect of CPI on satisfaction through three mechanisms: (1) high-innovativeness individuals perceive greater relative advantage and lower complexity, leading to positive disconfirmation; (2) they exhibit proactive trialability, leveraging CPI features to co-construct value-in-use; and (3) traits such as openness promote social observability and advocacy (Ali, 2019; Hwang et al., 2024).

Domain-specific innovativeness implies that food-domain innovators respond more strongly to menu CPI, while technology-oriented individuals respond to digital CPI (Midgley & Dowling, 1978). Although prior research shows personal innovativeness moderates responses in contexts like online shopping and smart devices (Citrin et al., 2006; Hwang et al., 2024; Lee & Shin, 2018), its specific moderating role on the integrated CPI–satisfaction link remains underexplored. This study addresses this gap by testing how personal innovativeness conditions the transformation of innovation perceptions into realized satisfaction.

*H16: Personal Innovativeness strengthens the influence of Perceived Menu Innovativeness on Customer Satisfaction.*

*H17: Personal Innovativeness strengthens the influence of Perceived Technology-Related Service Innovativeness on Customer Satisfaction.*

*H18: Personal Innovativeness strengthens the influence of Perceived Experiential Innovativeness on Customer Satisfaction.*

*H19: Personal Innovativeness strengthens the influence of Perceived Promotional Innovativeness on Customer Satisfaction.*

### ***The moderating role of personal innovativeness on VCC and satisfaction/loyalty***

Personal innovativeness strengthens the influence of VCC on satisfaction and loyalty by enhancing customer motivation and capacity for collaboration. High-innovativeness customers are more actively involved in VCC, integrating resources more effectively to generate richer value-in-use (Vargo & Lusch, 2004). They exhibit higher tolerance for ambiguity and derive greater psychological rewards, such as ownership, from the process (Midgley & Dowling, 1978; Prahalad & Ramaswamy, 2004). Consequently, VCC yields greater satisfaction and loyalty among high-innovativeness customers (Omar et al., 2018).

*H20: Personal Innovativeness strengthens the effect of Value Co-Creation on Customer Satisfaction.*

*H21: Personal Innovativeness strengthens the effect of Value Co-Creation on Customer Loyalty*

Figure 1 shows the research model.

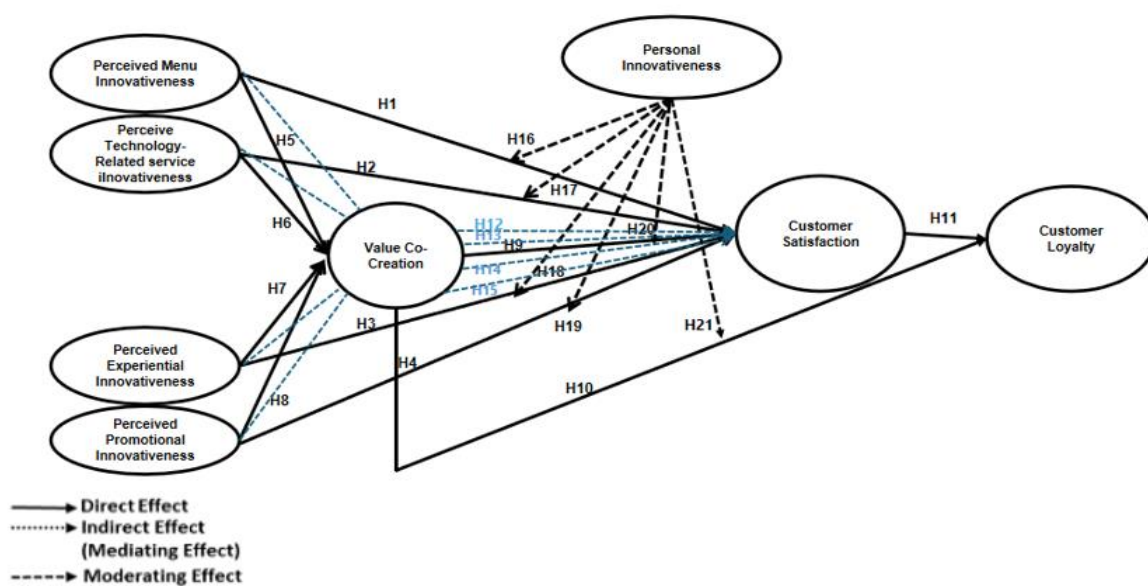


Figure 1: Research model

## **Research Method**

This study targets patrons of Indonesian local coffee shop brands, employing purposive sampling with explicit inclusion criteria to ensure respondents possess relevant value co-creation experiences (Hair et al.,

2017; Sekaran and Bougie, 2016;). Data collection utilized an online questionnaire distributed via Google Forms and social media platforms (distributed on May 22, 2025 to June 16, 2026, featuring five-point Likert scales (1–5) to assess Perceived Menu Innovativeness (PMI), Perceived Technology-Related Service Innovativeness (PTRSI), Perceived Experiential Innovativeness (PEI), Perceived Promotional Innovativeness (PPI), Value Co-Creation (VCC), Personal Innovativeness (PIN), Customer Satisfaction (CS) and Customer Loyalty (CL), in addition to demographic profiles and visitation patterns (Grönroos, 2011; Kim et al., 2018; Prahalad and Ramaswamy, 2004; Rogers, 1983; Yen et al., 2020). Analysis was conducted using SmartPLS with Partial Least Squares Structural Equation Modelling (PLS-SEM), evaluating both measurement (outer) and structural (inner) models (Hair et al., 2019; Sarstedt et al., 2021).

Measurement model assessment followed established thresholds: indicator loadings exceeding 0.708 (with contextual retention of items loading 0.40–0.70), composite reliability (CR)  $\geq 0.70$  (0.60–0.70 permissible in exploratory research) and Average Variance Extracted (AVE)  $\geq 0.50$  to confirm convergent validity (Hair et al., 2014; Hair et al., 2019). Discriminant validity was verified via the heterotrait–monotrait ratio (HTMT  $< 0.85$ ) and Fornell–Larcker criterion (Henseler et al., 2015). Predictive relevance was appraised using PLS-predict with k-fold cross-validation, comparing RMSE and MAE against linear model benchmarks (Shmueli et al., 2019), alongside Cross-Validated Predictive Ability Test (CVPAT) contrasting PLS errors with naive and linear benchmarks (Liengard et al., 2021; Sharma et al., 2023).

Structural evaluation included collinearity checks via Variance Inflation Factor (VIF  $< 3$ ) (Becker et al., 2015; Hair et al., 2019). Explanatory power was gauged by  $R^2$  values (strong  $\geq 0.75$ ; moderate  $\geq 0.50$ ; weak  $\geq 0.25$ ), with effect sizes ( $f^2$ ) interpreted per Cohen (1988). Path significance was determined through bootstrapping, mediation via indirect effects and moderation through latent interaction modelling (Hair et al., 2018). Data were collected through an online questionnaire, resulting in 993 initial responses. After multiple screenings, including verification of visits to local coffee shops ( $n=914$ ), experiences with baristas/feedback ( $n=521$ ), and adequate visit frequency ( $n=382$ ), additional selection based on the concept of place (a separate comfortable space) resulted in 362 respondents. Outlier detection using Z-score (Excel) eliminated 53 respondents, resulting in a final sample of 309 eligible for analysis, exceeding the minimum threshold for PLS-SEM for 43 indicators ( $\approx 215$ ) (Hair et al., 2014; Hair et al., 2017; Sekaran & Bougie, 2016). Demographic distribution shows gender balance (49.51% female; 50.49% male), dominance of the younger generation (Generation Z 40.12%; Millennials 34.30%), and the largest proportion of jobs as private employees (56.63%) with the majority having a bachelor's degree (60.19%). The frequency of visits is mostly several times a month (59.22%) or weekly (36.5%), and 4.53% daily, confirming the role of coffee shops in routines and demonstrating demographic heterogeneity and market preferences in Indonesia. Table 1 shows the demographics of respondents.

**Table 1. Respondent demographics**

Respondent Characteristics	Category	Frequency	Percentage (%)
Gender	Male	156	50.49%
	Female	153	49.51
Generation/Age	Generation Z (18 – 28 Years)	124	40.12%
	Generation Y / Millennials (29 – 44 Years)	106	34.30%
	Generation X (45 – 60 Years)	68	22.06%
	Baby Boomers (61 – 70 Years))	9	2.91%
	Housewife	22	7.12%
	Content Creator	2	0.65%
Occupation	Medical Doctor	1	0.32%
	Lecturer	3	0.97%
	State-Owned Enterprise Employee	1	0.32%
	Private Employee	175	56.63%
	Student	40	12.94%
	Civil Servant (PNS)	19	6.15%
	Self-Employed	46	14.89%
Highest Education	Elementary/Middle/High School/Vocational School	35	11.33%
	Diploma	35	11.33%
	Bachelor's Degree (S1)	186	60.19%
	Postgraduate Degree (S2 & S3)	53	17.15%
How often do you visit a local coffee shop?	Several Times a Month	183	59.22%
	Several Times a Week	112	36.25%
	Every day	14	4.53%

## Results

### Measurement model

#### Convergent validity

Convergent validity is an indicator of success in demonstrating that the indicators used can represent the characteristics of the same construct and are interrelated. A loading factor value of more than 0.708 and an AVE of more than 0.5, according to the standards set by Larcker, (1981), Henseler et al. (2012), and Hair et al. (2014), indicates that the indicators can explain more than 50% of the construct's variance and have a strong relationship. Although there are several indicators that have values below the threshold, the removal of indicators is not considered necessary because all variables meet the AVE criteria. In addition, the

reliability of the instrument can be confirmed through Cronbach's Alpha and rho\_A values which are above 0.7 and 0.8, respectively, and the AVE of the variables that all meet the standards. These findings indicate that the measurement instrument has adequate validity and reliability to measure the constructs studied accurately and consistently (Hair et al., 2014). Table 2 shows the results of convergent validity.

**Table 2. Result for convergent validity**

Variable	Indicator	Loading Factor	Cronbach's alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	Average Variance Extracted (AVE)
Customer Loyalty (CL)	CL1: I would recommend this coffee shop to others	0.861	0.921	0.822	0.938	0.716
	CL2: I will tell others about the positive things about this coffee shop	0.874				
	CL3: I am proud to tell others about my experience with this coffee shop.	0.805				
	CL4: In the future, this coffee shop will be my main choice	0.858				
	CL5: I will come back to visit this coffee shop	0.845				
	CL6: Based on my overall experience, I am loyal to this coffee shop	0.834				
Customer Satisfaction (CS)	CS1: I enjoyed my time at this coffee shop	0.855	0.896	0.897	0.928	0.763
	CS2: This coffee shop met my expectations	0.882				
	CS3: I was satisfied with this coffee shop because the price I paid was commensurate with what I received	0.857				
	CS4: I was satisfied with this coffee shop, based on my overall experience.	0.899				
Value Co-creation (VCC)	VCC1: I clearly communicate my needs to the employees/baristas at this coffee shop	0.811	0.875	0.881	0.909	0.667
	VCC2: I follow the instructions of the employees/baristas to ensure good service at this coffee shop.	0.877				
	VCC3: I share ideas with the employees/baristas that can help improve the service at this coffee shop.	0.774				
	VCC4: When I receive service from the employees/baristas at this coffee shop, I provide feedback.	0.829				
	VCC5: I respond to all questions from the employees/baristas at this coffee shop regarding the service I need.	0.787				
	VCC6: When I experience a problem, I notify the employees/baristas at this coffee shop.	0.765				
Personal Innovativeness (PIN)	PIN1: I like buying new products at the coffee shop	0.832	0.917	0.925	0.934	0.669
	PIN2: I am very enthusiastic about trying new products at the coffee shop	0.892				
	PIN3: I am open to new menu options at this coffee shop	0.834				
	PIN4: If a new product is more interesting than the existing products at this coffee shop, I will buy it	0.782				
	PIN5: I am happy when I buy new products at this coffee shop	0.882				
	PIN6: I would consider buying new products at this coffee shop, even if I have never heard of them before	0.750				
	PIN7: Buying new products at this coffee shop makes me a trendsetter	0.737				
Perceived Menu Innovativeness (PMI)	MI1: This coffee shop offers new menu combinations	0.599	0.832	0.843	0.879	0.550
	MI2: This coffee shop offers new coffee/drink flavors.	0.771				
	MI3: This coffee shop offers coffee/drinks that can be customized to my taste	0.663				
	MI4: This coffee shop regularly introduces new items on the menu	0.744				
	MI5: This coffee shop serves drinks and food in innovative ways	0.774				
	MI6: This coffee shop is always at the forefront of providing the latest menu items/products.	0.870				
Perceived Technology-Related Service Innovativeness (PTRSI)	TRSI1: This coffee shop uses the latest technology in its service	0.659	0.753	0.752	0.835	0.504
	TRSI2: This coffee shop provides an innovative menu	0.730				
	TRSI3: This coffee shop's ordering procedure is innovative, making it easy for me to order	0.781				
	TRSI4: This coffee shop offers modern payment methods	0.678				
	TRSI5: This coffee shop provides fast Wi-Fi	0.695				
Perceived Experiential Innovativeness (PEI)	EI1: This coffee shop has an innovative interior design	0.763	0.824	0.834	0.876	0.585
	EI2: This coffee shop serves innovative functions	0.796				
	EI3: This coffee shop hosts innovative events	0.709				
	EI4: The employees/baristas at this coffee shop interact in innovative ways	0.786				
	EI5: The employees/baristas at this coffee shop assist me with what I need	0.768				
Perceived Promotional Innovativeness (PI)	PI1: This coffee shop promotes itself in innovative ways	0.751	0.838	0.845	0.892	0.673
	PI2: This coffee shop offers exciting new promotions, such as limited-time discounts or discounted drink and food packages.	0.850				
	PI3: This coffee shop provides innovative communication channels	0.849				
	PI4: This coffee shop offers unique rewards programs for members or app users	0.829				

### Discriminant validity

Discriminant validity ensures that constructs are distinct, and indicators do not exhibit excessively high correlations across constructs (Henseler et al., 2015). The HTMT criterion demonstrated that all values were below 0.90, supporting discriminant validity. Nonetheless, high correlations existed between customer satisfaction and customer loyalty (0.903), as well as between perceived experiential innovativeness and other constructs (0.837-0.839), which could indicate overlap. To mitigate this, the indicator CL2 of customer loyalty was removed based on the highest mean correlation, and the HTMT was recalculated. Following this modification, all HTMT values fell below the cutoff threshold, ensuring the constructs remained distinguishable. This process preserved the construct validity and strengthened the overall reliability of the measurement model, aligning with recommendations from Henseler et al. (2015). Table 3 shows the results of discriminant validity.

**Table 3. Result for discriminant validity**

Variable	VCC	CL	CS	EI	MI	PI	TRSI	PIN
VCC								
CL	0.759							
CS	0.770	0.898						

Variable	VCC	CL	CS	EI	MI	PI	TRSI	PIN
EI	0.736	0.671	0.717					
MI	0.693	0.668	0.643	0.837				
PI	0.724	0.626	0.629	0.802	0.732			
TRSI	0.725	0.717	0.749	0.839	0.788	0.804		
PIN	0.576	0.620	0.606	0.664	0.711	0.581	0.637	

*PLS-predict analysis*

Model predictive power was evaluated through RMSE and Q<sup>2</sup> metrics. All Q<sup>2</sup> prediction values were above zero, confirming predictive relevance. Most RMSE values from the PLS-SEM model were lower than those from external benchmark models such as linear models (LM) and indicator-averages (IA), except for four indicators (VCC2, CS4, CL1, and CL5), which showed higher RMSE than LM. Based on Shmueli et al. (2019), this suggests the model’s predictive power is moderate, with satisfactory performance despite some indicators underperforming. Table 4 shows the results of PLS-Predict.

**Table 4. Result for PLS-predict**

Variable	Q <sup>2</sup> Predict	PLS-SEM RMSE	LM RMSE	PLS-SEM_RMSE-LM_RMSE
VCC1	0.385	0.517	0.527	-0.01
VCC2	0.347	0.538	0.531	0.007
VCC3	0.324	0.796	0.815	-0.019
VCC4	0.387	0.629	0.675	-0.046
VCC5	0.273	0.635	0.669	-0.034
VCC6	0.233	0.683	0.696	-0.013
CL1	0.346	0.549	0.531	0.018
CL3	0.377	0.597	0.618	-0.021
CL4	0.317	0.648	0.679	-0.031
CL5	0.305	0.573	0.560	0.013
CL6	0.314	0.628	0.648	-0.02
CS1	0.434	0.546	0.556	-0.01
CS2	0.356	0.582	0.585	-0.003
CS3	0.302	0.601	0.602	-0.001
CS4	0.350	0.549	0.539	0.01

*CVPAT (cross-validated predictive ability test) analysis*

Further, CVPAT analysis supports these findings, showing that the average prediction error of the PLS-SEM model is consistently lower than that of external benchmark models, with statistical significance (Sharma et al., 2023). This indicates that the model exhibits strong predictive accuracy and reliability, making it a valuable tool for strategic decision-making and variable evaluation. Overall, the model demonstrates considerable statistical robustness and explanatory capacity. While it explains most variance in the main variables, the influence of some predictors remains limited. Its moderate predictive performance underscores the potential for practical application yet emphasizing the importance of incorporating external factors or additional variables to enhance its predictive strength and develop a more comprehensive strategy in future research or business contexts. Table 5 shows the CPVAT results.

**Table 5. Result for CPVAT value**

Variable	PLS loss	IA loss	Average loss difference
Value Co-Creation	0.364	0.537	-0.173
Customer Loyalty	0.359	0.539	-0.179
Customer Satisfaction	0.324	0.508	-0.185
Overall	0.351	0.530	-0.179
	PLS loss	LM loss	Average loss difference
Value Co-Creation	0.364	0.389	-0.025
Customer Loyalty	0.359	0.372	-0.013
Customer Satisfaction	0.324	0.326	-0.002
Overall	0.351	0.365	-0.014

**Structural model**

*Collinearity analysis*

Collinearity analysis reveals that all Variance Inflation Factor (VIF) values are below 3, indicating no significant multicollinearity issues among predictor constructs (Becker et al., 2015; Hair et al., 2019). This low VIF ensures the independence of predictor variables, supporting the reliability and validity of model estimates. Table 6 shows the VIF values.

**Table 6. Result for VIF value**

Variable	Value Co-Creation	Customer Loyalty	Customer Satisfaction
Value Co-Creation (VCC)		2.042	2.430
Customer Satisfaction (CS)			
Perceived Experiential Innovativeness (PEI)		2.124	
Perceived Menu Innovativeness (PMI)	2.593		2.928
Perceived Promotional Innovativeness (PPI)	2.206		2.652
Perceived Technology Related Services Innovativeness (PTRSI)	2.103		2.310
Personal Innovativeness (PIN)	2.179		2.396

*R<sup>2</sup> value analysis*

The R-squared ( $R^2$ ) analysis further assesses the explanatory power of the predictor constructs, where the  $R^2$  value of 0.544 for value co-creation signifies that approximately 54.4% of its variance can be predicted by the model, categorized as moderate based on Hair et al.'s (2019) standards. For customer satisfaction,  $R^2$  reaches 0.592, indicating a moderate to good explanation level, and for customer loyalty,  $R^2$  of 0.697 indicates high predictive power, demonstrating the model's ability to explain substantial variability in these variables. Table 7 shows the  $R^2$  value.

**Table 7. Result for  $R^2$  value**

Variable	R-square	R-square adjusted
Value Co-Creation	0.544	0.538
Customer Satisfaction	0.582	0.577
Customer Loyalty	0.697	0.693

*Effect size analysis ( $F^2$ )*

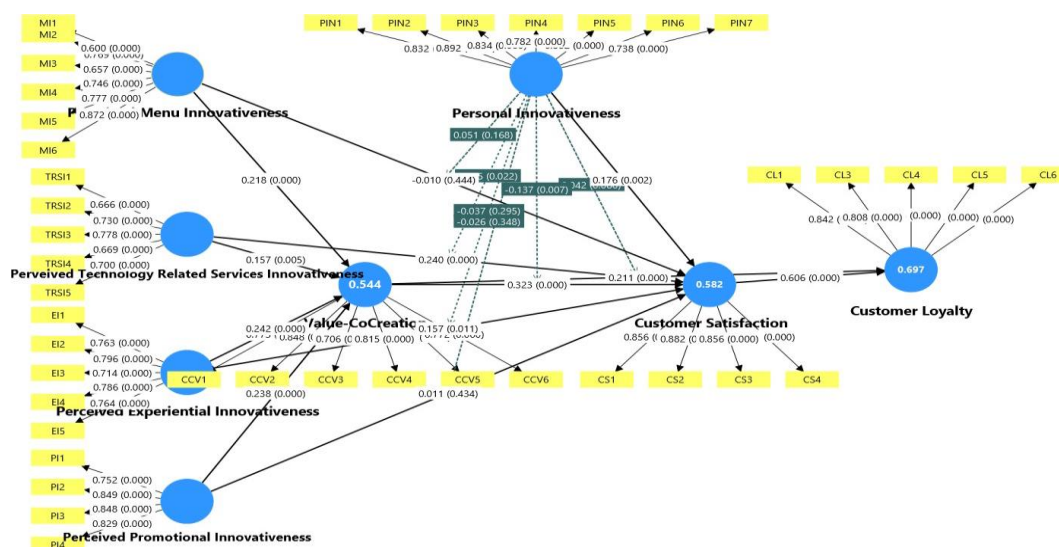
The effect size ( $F^2$ ) evaluates the relative influence of each predictor. Results indicate that all predictors exert small effects on the endogenous constructs per Cohen (1988) categories. The highest  $F^2$  value of 0.561 for customer satisfaction on customer loyalty suggests a large and significant impact, underscoring the importance of customer satisfaction in loyalty formation. Other predictors such as perceived experiential innovativeness and perceived technology-related service innovativeness show small effect sizes (0.020–0.056), indicating limited contribution to outcome variability. Perceived promotional innovativeness has an  $F^2$  of 0.065, slightly higher yet still within the small effect category, reinforcing the notion that predictor effects are generally limited but statistically relevant. Regarding predictor influence on customer satisfaction, all predictor variables demonstrated small effects, with  $F^2$  values ranging from 0.000 to 0.103. The contribution of value co-creation is modest (0.103), whereas perceived experience innovativeness and perceived technology-related innovativeness exhibit minimal effects (0.020 and 0.056, respectively). Perceived menu and perceived promotional innovativeness show negligible or nonsignificant influence (0.0), indicating their limited role in explaining satisfaction. Table 8 shows the  $F^2$  values.

**Table 8. Result for  $F^2$  value**

Variable	Value Co-Creation	Customer Satisfaction	Customer Loyalty
Value Co-Creation		0.103	0.073
Customer Satisfaction			0.561
Perceived Experiential Innovativeness	0.046	0.020	
Perceived Menu Innovativeness	0.028	0.000	
Perceived Promotional Innovativeness	0.065	0.000	
Perceived Technology Related Services Innovativeness	0.027	0.056	

*Hypothesis test results*

A visual representation of the structural model results is provided in Figure 2. A PLS approach was applied to assess the direct causal relationships among proposed variables. As shown in Table 9, most hypothesized structural paths were supported; however, Hypotheses 1 and 4 both proposing effects of customer perceived innovativeness on customer satisfaction were not accepted.



**Figure 2: The research structural model**

**Table 9. Test for direct causal**

Hypotheses	$\beta$ (Path Coefficients)	T-Statistic	P-Value	Result
H1 Perceived menu innovativeness $\rightarrow$ customer satisfaction	-0.010	0.141	0.444	rejected
H2 Perceived technology-related services innovativeness $\rightarrow$ customer satisfaction	0.240	3.708	0.000	accepted
H3 Perceived experiential innovativeness $\rightarrow$ customer satisfaction	0.157	2.304	0.011	accepted
H4 Perceived promotional innovativeness $\rightarrow$ customer satisfaction	0.011	0.166	0.434	rejected
H5 Perceived menu innovativeness $\rightarrow$ Value co-creation	0.218	3.363	0.000	accepted
H6 Perceived technology-related services innovativeness $\rightarrow$ value co-creation	0.157	2.549	0.005	accepted
H7 Perceived experiential innovativeness $\rightarrow$ value co-creation	0.242	3.589	0.000	accepted
H8 Perceived promotional innovativeness $\rightarrow$ value co-creation	0.238	3.733	0.000	accepted
H9 Value co-creation $\rightarrow$ customer satisfaction	0.323	5.077	0.000	accepted
H10 Value co-creation $\rightarrow$ customer loyalty	0.211	3.337	0.000	accepted
H11 Customer satisfaction $\rightarrow$ customer loyalty	0.606	10.072	0.000	accepted

\*\*\*p < 0.005

Table 10 provides evidence that the mediating role of value co-creation in the relationship between customer perceived innovativeness and customer satisfaction is statistically supported. This finding lends credence to the idea that value co-creation is a crucial mechanism through which innovation translates into customer satisfaction.

**Table 10. Testing mediating effects**

Hypotheses	B (Path Coefficients)	T-Statistic	P-value	Result
H12 Perceived menu innovativeness $\rightarrow$ value co-creation $\rightarrow$ customer satisfaction	0.078	2.852	0.002	accepted
H13 Perceived technology-related services innovativeness $\rightarrow$ value co-creation $\rightarrow$ customer satisfaction	0.051	2.143	0.016	accepted
H14 Perceived experiential innovativeness $\rightarrow$ value co-creation $\rightarrow$ customer satisfaction	0.078	2.852	0.002	accepted
H15 Perceived promotional innovativeness $\rightarrow$ Value co-creation $\rightarrow$ customer satisfaction	0.077	3.146	0.001	accepted

\*\*\*p < 0.005

This study examined personal innovativeness as a moderator of the relationships between various perceived innovativeness types and customer outcomes. Results indicated that personal innovativeness significantly moderates the impact of perceived technology-related service innovativeness on customer satisfaction ( $\beta = 0.125, p < 0.05$ ), enhancing satisfaction among more innovative customers. Conversely, personal innovativeness negatively moderates the relationship between value co-creation and customer satisfaction ( $\beta = -0.137, p < 0.01$ ), suggesting a diminished effect of co-creation on satisfaction for highly innovative individuals. Personal innovativeness did not significantly moderate other tested relationships." These results are shown in Table 11.

**Table 11. Testing moderating effect**

Hypotheses	B (Path Coefficients)	T-Statistic	P-value	Result
H16 Personal innovativeness x perceived menu innovativeness $\rightarrow$ customer satisfaction	0.051	0.961	0.168	rejected
H17 Personal innovativeness x perceived technology-related services innovativeness $\rightarrow$ customer satisfaction	0.125	2.020	0.022	accepted
H18 Personal innovativeness x perceived Experiential Innovativeness $\rightarrow$ customer satisfaction	-0.037	0.540	0.295	rejected
H19 Personal innovativeness x perceived promotional innovativeness $\rightarrow$ customer satisfaction	-0.026	0.390	0.348	rejected
H20 Personal innovativeness x value co-creation $\rightarrow$ customer satisfaction	-0.137	2.447	0.007	rejected
H21 Personal innovativeness x Value co-creation $\rightarrow$ customer loyalty	0.042	1.363	0.086	rejected

\*\*\*p < 0.005

## Discussion

This study investigates the relationships among perceived innovativeness dimensions (menu, technology-related service, experiential, promotional), customer satisfaction, loyalty, and value co-creation in coffee shops, incorporating personal innovativeness as a moderator. The analysis is grounded in Customer-Perceived Value (Zeithaml, 1988), Service-Dominant Logic (Vargo & Lusch, 2004), and Diffusion of Innovation (Rogers, 1983) frameworks.

### *Impact of customer perceived innovativeness on customer satisfaction*

Based on Zeithaml’s (1988) Customer Perceived Value (CPV) framework, the results reveal distinct mechanisms regarding how CPI dimensions influence satisfaction among Indonesian coffee shop patrons. PLS-SEM results indicate that perceived menu innovativeness tends to reduce satisfaction ( $\beta = -0.010; p = 0.444$ ), albeit non-significantly. Within the CPV context, aggressive menu changes may elevate perceived sacrifices—such as functional disruption and complexity—whereby benefits fail to offset non-monetary costs like time and risk, thus lowering net value (Zeithaml, 1988). Given that 74.42% of respondents are Gen-Z/Millennials prioritizing social convenience and ritual, complex innovations disrupting habits may diminish satisfaction. This contrasts with restaurant settings, where high involvement amplifies hedonic gains from culinary exploration (Baiomy et al., 2019; Choi et al., 2022). Conversely, Perceived Technology-related Service Innovativeness (PTRSI) positively influences satisfaction ( $\beta = 0.240; p = 0.000$ ), supporting H2. Technologies such as digital ordering and high-speed Wi-Fi enhance functional, emotional, and social

value, improving the benefit–sacrifice calculus (Lee et al., 2018a; Yim & Yoo, 2020). Similarly, Perceived Experiential Innovativeness positively impacts satisfaction ( $\beta=0.157$ ;  $p=0.011$ ), supporting H3. Aesthetic and multifunctional environments enrich relational and emotional value, creating socially rewarding spaces for younger demographics (Chun & Nyam-Ochir, 2020; Tai et al., 2021). However, perceived promotional innovativeness does not increase satisfaction ( $\beta=0.011$ ;  $p=0.434$ ). Intrusive or complex promotions may raise perceived sacrifices (e.g., privacy risk, cognitive burden) that outweigh benefits, undermining the convenience-oriented coffee shop experience (Seo, 2024; Zeithaml, 1988).

#### ***Impact of customer perceived innovativeness on value co-creation***

The study finds that all four CPI dimensions significantly enhance value co-creation (VCC). Perceived menu innovativeness positively affects VCC ( $\beta=0.218$ ;  $p=0.000$ ), supporting H5. Innovations in flavor and personalization increase perceived "gets" (taste fit, enjoyment) and reduce "gives" (boredom), motivating customers to communicate preferences and refine offerings (Zeithaml, 1988). Perceived technology-related service innovativeness also promotes VCC ( $\beta=0.157$ ;  $p=0.005$ ), supporting H6. Digital tools increase functional and monetary value, prompting rational engagement in technical feedback and system usage. Perceived experiential innovativeness exerts a positive effect on VCC ( $\beta=0.242$ ;  $p=0.000$ ), supporting H7. Distinctive interiors and interactions boost emotional and social value, encouraging customers to invest effort in feedback and event participation. Similarly, promotional innovativeness supports VCC ( $\beta=0.238$ ;  $p=0.000$ ), supporting H8. Attractive deals and interactive campaigns enhance perceived benefits, motivating engagement through digital channels. These findings align with literature positioning service innovation as a catalyst for collaboration (Mahmoud et al., 2018; Ordanini & Parasuraman, 2011).

#### ***Impact of value co-creation on customer satisfaction and loyalty***

VCC demonstrates a significant positive effect on customer satisfaction ( $\beta = 0.323$ ;  $p = 0.000$ ), supporting H9, and on loyalty ( $\beta = 0.211$ ;  $p = 0.000$ ), supporting H10. From a Service-Dominant Logic (SDL) perspective, customers act as operant resources, integrating information and effort with firm resources to co-produce outcomes (Vargo & Lusch, 2004). Behaviors such as providing feedback and engaging in dialogue enhance personalization and reliability. Consequently, customers perceive greater value and trust, fostering long-term commitment and advocacy, consistent with prior research (Grissemann & Sauer, 2012; Kim et al., 2019; Tran et al., 2023).

#### ***Impact of customer satisfaction on customer loyalty***

A significant positive association exists between satisfaction and loyalty ( $\beta = 0.606$ ;  $p=0.000$ ), supporting H11. Satisfaction drives repeat patronage and recommendations through the formation of positive emotional bonds, corroborating existing studies (Lee et al., 2018; Song et al., 2019).

#### ***Mediating role of value co-creation***

PLS-SEM analysis reveals that value co-creation (VCC) fully mediates the link between perceived menu innovativeness and customer satisfaction (indirect  $\beta = 0.078$ ,  $p = 0.002$ ), supporting H13. Although menu innovation alone may fail to boost satisfaction owing to possible mismatches with customer preferences, VCC enables personalization of offerings, transforming latent "value potential" into realized value-in-use (Vargo & Lusch, 2004; Zeithaml, 1988). For perceived technology readiness in service innovation (PTRSI), VCC serves as a partial mediator (indirect  $\beta = 0.051$ ,  $p = 0.016$ ). Technology directly delivers functional value, yet VCC enhances these outcomes via customer engagement. Likewise, VCC partially mediates experiential innovativeness's effect on satisfaction (indirect  $\beta = 0.078$ ,  $p = 0.002$ ), upholding H14; co-production thereby magnifies the value of environmental and social dimensions. VCC also fully mediates promotional innovativeness's influence (indirect  $\beta = 0.077$ ,  $p = 0.001$ ), confirming H15. Customer involvement in VCC simplifies and tailors promotions, mitigating complexity and elevating customer-perceived value (CPV). Value co-creation (VCC) significantly mediates the effect of perceived innovativeness (menu, technology, experiential, promotional) on customer satisfaction in coffee shops, aligning with prior service research (Bordian et al., 2024; Ghali et al., 2024; Hollebeek & Rather, 2019; Kim et al., 2019; Mahmoud et al., 2018). This affirms VCC's core role in converting innovation potential into satisfaction. Based on Customer Perceived Value theory (Zeithaml, 1988) and Service-Dominant Logic (Vargo & Lusch, 2004), innovations alone may disappoint without personalisation. VCC bridges this by enabling customers to adapt resources—operand (e.g., menus, tech) and operant (e.g., barista skills)—via participation like feedback and collaboration, yielding value-in-use. VCC engagement enhances perceived benefits (functional, emotional, social, monetary) while cutting costs (time, risk), boosting satisfaction universally.

### ***The moderating role of personal innovativeness***

When personal innovativeness (PIN) is added to the model, perceived menu innovativeness shows no significant effect on customer satisfaction ( $\beta = 0.051$ ,  $p = 0.167$ ), rejecting H16. PIN does not moderate this link in coffee shops. Menu innovations involve low risk and occur frequently, so even less innovative customers experience minimal downsides; instead, relative advantage and compatibility drive outcomes more strongly (Citrin et al., 2006; Jeong & Choi, 2022; Senali et al., 2023). Low perceived compatibility or complexity means early adopters do not gain extra satisfaction (Rogers, 1983). Moreover, PIN better predicts adoption intentions than post-consumption satisfaction, which hinges on taste, presentation, and utility (Alkawsi et al., 2021; Hetet et al., 2020; Persaud & Schillo, 2017).

In contrast, PIN significantly strengthens the relationship between perceived technology-related services innovativeness (PTRSI) and customer satisfaction ( $\beta = 0.125$ ,  $p = 0.000$ ), serving as a "sensitivity amplifier" for tech novelty. PTRSI elements like e-menus, innovative ordering, modern payments, and fast Wi-Fi match Diffusion of Innovation Theory through relative advantage (efficiency), compatibility (digital habits), low complexity, trialability, and observability (Rogers, 1983). Highly innovative customers, who value novelty, derive greater intrinsic satisfaction. This aligns with technology adoption studies (Jeong & Choi, 2022; Senali et al., 2023) and extends to post-adoption effects, similar to smartphone research (Lee & Shin, 2018).

PIN does not moderate perceived experiential innovativeness (PEI)—such as novel interiors, events, and staff interactions—with customer satisfaction ( $\beta = -0.037$ ,  $p = 0.295$ ), rejecting H17. PEI offers low-risk, broad appeal via comfort, compatibility, and observability, satisfying all customers equally (Rogers, 1983). Its focus on aesthetic enhancements may overwhelm high-PIN customers seeking radical novelty. PIN influences adoption more than satisfaction, where service quality prevails (Citrin et al., 2006; Lee & Shin, 2018; Senali et al., 2023).

Similarly, PIN fails to moderate perceived promotional innovativeness (PPI) on satisfaction ( $p = 0.348$ ), rejecting H19. Low-risk promotions with clear benefits diminish PIN's role (Rogers, 1983; Alkawsi et al., 2021; Jeong & Choi, 2022). Customers value economics over novelty, and innovative ones may critique complexity (Hetet et al., 2020; Lee & Shin, 2018).

Surprisingly, PIN negatively moderates value co-creation (VCC) on satisfaction ( $\beta = -0.137$ ,  $p = 0.295$ ), possibly due to unmet novelty expectations (Vargo & Lusch, 2004; Rogers, 1983; Zeithaml, 1988). No moderation appears for VCC-loyalty ( $\beta = 0.042$ ,  $p = 0.086$ ; H21 rejected). Overall, PIN's effects prove technology-specific, sometimes reversing when expectations falter (Alkawsi et al., 2021; Citrin et al., 2006; Hetet et al., 2020; Jeong & Choi, 2022).

## **Conclusion**

This study concludes that Customer Perceived Innovativeness (CPI) does not uniformly drive satisfaction; its impact is contingent upon the specific dimension of innovation and the mechanism of value co-creation (VCC). Empirically, technological and experiential innovations directly enhance satisfaction by improving the value-for-money trade-off and offering convenience. In contrast, menu and promotional innovations, if perceived as complex or burdensome, risk increasing customer sacrifice and yielding neutral or negative outcomes unless mediated by VCC. VCC emerges as a critical "processing engine" that transforms potential innovation value into realized satisfaction and loyalty, fully mediating the effects of menu and promotion while partially mediating technology and experience. Furthermore, Personal Innovativeness (PIN) acts as a selective moderator, amplifying satisfaction only in the context of technological services, while showing neutral or even negative moderation effects on VCC-satisfaction links due to potential expectation dissonance among high-PIN individuals. Theoretically, this research extends Service-Dominant Logic and Diffusion of Innovations theory by establishing that innovation effectiveness is highly contextual. It demonstrates that VCC is not merely beneficial but essential for converting high-risk innovations (menu/promotion) into value-in-use (Vargo & Lusch, 2004; Zeithaml, 1988). The findings challenge the assumption that high personal innovativeness universally boosts satisfaction, revealing boundary conditions where high-PIN customers may experience dissatisfaction if co-creation outcomes lack sufficient novelty. Economically and practically, these insights guide managers to prioritize investments in reliable digital ecosystems and multifunctional servicescapes for retention, while exercising caution with radical menu or promotional changes. Strategies should focus on "co-creation-ready" innovations that simplify customer participation to maximize perceived value. Despite these contributions, several limitations require critical judgment regarding their impact on generalizability. First, the study's geographic focus on specific Indonesian regions may not fully capture the cultural diversity of consumer behavior across the archipelago (e.g., Sumatra, Kalimantan, Eastern Indonesia), potentially limiting national applicability. Second, while the study identifies generational trends, it relies heavily on a Gen Z and Millennial sample, which may skew

results regarding technological adoption and experiential preferences compared to older cohorts. These limitations do not stem from methodological errors but rather from the scope of sampling selected. Future research should address these validity constraints by employing probabilistic multi-stage cluster sampling across diverse regions and utilizing multi-group SEM to analyze cohort-specific pathways (Gen Z vs. Baby Boomers), thereby refining age-tailored innovation strategies.

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