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The Effect of Service Fairness and Service Quality on Customer Satisfaction and Loyalty: A Case of Mobile Financial Applications in Phnom Penh

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Abstract

Aim/Purpose: This study examined how service fairness and SERVQUAL dimensions influenced customer satisfaction and loyalty in mobile financial applications (MFAs) in Phnom Penh, Cambodia. As digital transformation reshapes financial services, understanding these factors is crucial for improving user experiences and fostering long-term engagement.

Introduction/Background: Mobile financial applications (MFAs) have become an essential part of Cambodia's urban financial ecosystem by providing accessible and cost-effective financial solutions. Despite their increasing usage, limited research exists on the factors influencing customer satisfaction and loyalty in this sector. This study aimed to bridge this gap by examining how service fairness dimensions (distributive, procedural, interpersonal, and informational) and SERVQUAL dimensions (reliability, responsiveness, assurance, and empathy) impacted customer satisfaction and loyalty.

Methodology: A quantitative research methodology was employed to explore the relationships among service fairness, SERVQUAL factors, customer satisfaction, and loyalty. The study targeted individuals aged 18 and above who actively use MFAs in Phnom Penh. Due to the absence of precise population data, stratified purposive sampling was used to ensure diverse representation across Phnom Penh's districts. Using Cochran's formula with a 95% confidence level and a 5% margin of error, the study aimed for a sample size of 400 respondents, but 560 surveys were distributed to enhance reliability, yielding 470 valid responses. Data collection took place between May and July 2024 through online surveys and self-administered questionnaires distributed across various digital platforms.

The survey instrument was structured into four key sections: demographic information, MFA usage experience, behavioral factors, and service fairness/SERVQUAL dimensions, which were measured on a five-point Likert scale. Survey items were adapted from prior studies to ensure measurement reliability and validity. The questionnaire was pretested with 30 respondents, and refinements were made to improve clarity and relevance. Advanced statistical techniques were used to analyze the data. Descriptive statistics provided an overview of respondent demographics and usage behavior. Cronbach's Alpha was employed to assess reliability, while Confirmatory Factor Analysis (CFA) validated the construct dimensions. Structural Equation Modeling (SEM) was utilized to test the relationships among service fairness, service quality, customer satisfaction, and loyalty, with results presented through detailed statistical models and tables.

Findings: The study revealed that both service fairness and SERVQUAL dimensions significantly influenced customer satisfaction, which, in turn, drives customer loyalty. Among service fairness dimensions, distributive and procedural fairness had the strongest effects on satisfaction, highlighting the importance of transparent processes and fair service outcomes. Customers responded positively to equitable resource allocation and well-structured procedural guidelines. Regarding SERVQUAL dimensions, responsiveness and assurance emerged as the most influential factors shaping customer satisfaction. Customers highly valued prompt responses to inquiries and the expertise and reliability of service providers. While empathy contributed to satisfaction, its impact was comparatively less pronounced. Customer satisfaction was found to mediate the relationships between service fairness, service quality, and loyalty. This underscored the necessity of fostering positive user experiences to

enhance long-term customer retention and loyalty. The findings suggest that MFA providers should prioritize procedural fairness and responsiveness to optimize customer satisfaction and long-term engagement.

Contribution/Impact on Society: This study provides empirical evidence of the role of service fairness and SERVQUAL factors in shaping customer satisfaction and loyalty in the Cambodian MFA market. While previous research has examined these factors in other industries, this study uniquely focused on MFAs in a developing Southeast Asian context. The findings emphasize the importance of fair service design and high-quality service delivery in building customer trust and loyalty. By implementing transparent service processes and prioritizing customer support quality, MFA providers can foster financial inclusion and promote sustainable business growth in emerging markets.

Recommendations: For MFA providers, the study recommends emphasizing transparency, equitable service outcomes, and efficient customer support to enhance satisfaction and trust. Specifically, providers should:

Improve distributive and procedural fairness by implementing clear, transparent, and fair resource allocation policies.

Enhance responsiveness by ensuring customer inquiries are addressed promptly and effectively.

Strengthen assurance through professional training programs that enhance staff expertise and reliability.

Invest in customer service training to improve staff empathy and engagement with users.

For researchers, further exploration into additional variables such as trust, security, and digital literacy could offer a more comprehensive understanding of MFA user behavior.

Research Limitation: This study had several limitations. Its cross-sectional research design captured data at a single point in time, limiting the ability to infer causal relationships. Additionally, the study focused exclusively on Phnom Penh, restricting the generalizability of findings to other regions or countries. The reliance on self-reported data may have introduced potential bias, including social desirability bias. Future studies should adopt longitudinal designs and include a broader geographic scope to enhance research validity

Future Research: Future studies should expand on this research by incorporating additional factors such as perceived security, trust, and digital literacy to provide deeper insights into customer satisfaction and loyalty in MFAs. Comparative studies across different regions or countries could reveal cultural differences in how service fairness and quality affect customer perceptions. Additionally, longitudinal studies tracking changes in satisfaction and loyalty over time would provide a dynamic perspective on user behavior and evolving service expectations.

Keywords: *Service fairness, SERVQUAL, customer satisfaction, customer loyalty*

Introduction

Mobile financial applications (MFAs) have revolutionized financial services, enabling users to access various functions via mobile phones (Bacamante & Campos, 2024). Their rapid acceptance has turned out to significantly boost financial accessibility in developing regions where traditional banking was one of the most important, but least efficient, sectors. MFAs have improved fast and safe transactions, especially during the pandemic due to the need for touch-free financial systems (Hasan & Sony, 2023)MFAs increased digital financial activities worldwide and improved financial inclusion and stability, resulting in the heightened use of digital banking services.

Cambodia's financial sector is developing fast, with most of the population still outside the coverage of banks, which brings a huge market for MFAs. MFAs are essential in linking financial institutions with unbanked segments and help develop the economy at both the individual and societal level. As of the end of 2022, licensed payment service providers in Cambodia reported more than 19.5 million active e-wallets, accounting for more than USD $272.8 billion worth of transactions, which was almost nine times the gross domestic product of the country (Chea, 2023)Such tendencies were most evident in

the capital city, Phnom Penh. New developments, such as Bakong, a peer-to-peer fund transfer service introduced by the National Bank of Cambodia, have enhanced the development of cashless payments, consequently contributing to growth and attracting international interest. The adoption of MFAs in Phnom Penh has significantly improved financial inclusion and banking accessibility, particularly for the unbanked.

However, despite their economic impact, MFAs face challenges in customer satisfaction and loyalty. As cashless payments grow, our understanding of consumer behavior, satisfaction levels, and service quality dimensions—reliability, responsiveness, assurance, and empathy–has remained limited. Additionally, the role of service fairness, including distributive, procedural, interpersonal, and informational fairness, in shaping satisfaction and loyalty has been underexplored. These gaps have hindered service enhancement and customer retention, both of which are vital for the industry's sustainable growth. Academically, the relationship between service fairness, service quality, satisfaction, and loyalty in developing markets remains largely unexamined. Economically, insights from such research can help MFA providers in Phnom Penh develop strategies to enhance customer satisfaction and loyalty, supporting broader financial inclusion and economic development in Cambodia.

The objectives of the research have been narrowed to ensure actionable goals by clearly outlining the analytical techniques used as follows:

1. To determine the effect of service fairness dimensions on customer satisfaction with the aid of Partial Least Squares Structural Equation Modeling PLS-SEM.
2. To examine the relationship between dimensions of service quality and customer satisfaction.
3. To assess the mediating effect of customer satisfaction on the link between service fairness perceptions, service quality dimensions, and customer loyalty by using bootstrapping procedures for mediation analysis.

Literature Review

Interpersonal Fairness

Interpersonal fairness, distinguished by the respectful treatment of individuals, and informational fairness, related to the clarity of communication, greatly impact customer satisfaction in MFAs (Hadi et al., 2020). Interpersonal fairness also builds loyalty and love to serve customers as an intermediary of service performance and service satisfaction (Geebren & Jabbar, 2021). It has also been established that interpersonal fairness is a key predictor of customer loyalty due to its impact on satisfaction (Rahman et al., 2019). Particularly, courtesy in MFAs interactions strengthens trust and satisfaction, leading to increased loyalty (Hossain et al., 2021). Furthermore, satisfaction has been reported to mediate the relationship between interpersonal fairness and loyalty, reaffirming its importance in any service marketing (Devi & Yasa, 2021).

Based on these findings, the study proposed the following hypotheses:

H_1: Interpersonal fairness positively influences customer satisfaction.

H_{1a}: Customer satisfaction positively mediates the relationship between interpersonal fairness and customer loyalty.

Informational Fairness

Informational fairness pertains to the provision of correct explanations of reasons and processes that significantly impact the service that customers receive (Kohsuwan & Lawkobkit, 2013). In MFAs where users are reliant on available information for their choices, informational fairness is one of the most important aspects in the improvement of customer satisfaction (Uddin & Nasrin, 2023). It has been suggested that strategy as well as ethical components are associated with this, and it has been observed that good communication enhances results in trust and satisfaction (Collier & Esteban, 2007). Furthermore, sufficient information and understanding of the business processes also reinforces loyalty. For instance, according to Rai et al. (2022), sufficient qualitative information provided by FedEx increased the level of satisfaction and, as a result, improved customer loyalty. For MFAs users,

notification of transactions and fees enhances trust, satisfaction, and the formation of the intention to be loyal (Omar et al., 2021).

Based on these findings, the study stated the following hypotheses:

H_2: Informational fairness positively influences customer satisfaction.

H_{2a}: Customer satisfaction positively mediates the relationship between informational fairness and customer loyalty.

Distributive Fairness

Distributive fairness focuses on customers' views regarding the end products or the outcomes they receive, especially when there is a service failure (Sofiana & Prihandono, 2019). Based on equity's proportionality, distributive fairness uses the notion of comparing oneself to others in regard to whom has received resources or the best outcome (Krishna et al., 2011). In the context of MFAs, fair pricing and rewards of services are essential for developing satisfaction. For instance, Mushagalusa et al. (2022) found that price fairness positively determined consumer trust and consumer switching intentions. As per Geebren et al. (2021), the more fairness is perceived in the distribution of resources, the higher the satisfaction and loyalty among mobile banking users. Similarly, procedural justice theory regards fair distribution of outcomes as highly effective in promoting retention. It has also been demonstrated that users' satisfaction and intentions to be loyal to the MFAs increase when service pricing and distribution are comprehensive and fair (Hossain et al., 2021).

Based on these findings, the following hypotheses were tested:

H_3: Distributive fairness positively influences customer satisfaction.

H_{3a}: Customer satisfaction positively mediates the relationship between distributive fairness and customer loyalty.

Procedural Fairness

Procedural fairness is about people's understanding of procedures, the manner and style of their application, and the decisiveness of the outcomes in relation to the targets (Jung et al., 2017). In the MFAs sector, Uddin and Nasrin (2023) remarked that fair procedures help form trust and satisfaction, with procedural fairness as a core component of user satisfaction. These findings were further endorsed by Bacamante and Campos (2024), who found that risk perceptions in mobile banking could be decreased by operationalizing objective and transparent procedures, thus enhancing customer satisfaction levels. Satisfaction and loyalty are strengthened by fair processes, and this is one approach for retaining customers (Devi & Yasa, 2021). Fairness in conflict resolution processes, and particularly in transaction approval processes, leads customers to higher satisfaction levels and subsequently higher loyalty intentions (Molinillo et al., 2022; Omar et al., 2021). From the findings of these studies, this relationship has been established both in the banking and in the electronic business sectors, where satisfaction acted as a mechanism by which procedural fairness influenced customer loyalty.

Based on these findings, the following hypotheses were framed:

H_4: Distributive fairness positively influences customer satisfaction.

H_{4a}*:* Customer satisfaction positively mediates the relationship between procedural fairness and customer loyalty.

The SERVQUAL Model and Customer Satisfaction

The SERVQUAL model is a widely recognized framework for evaluating service quality by measuring the gap between customer expectations and perceived service performance. The model initially identified ten dimensions, which were later refined into five key constructs: reliability, responsiveness, assurance, empathy, and tangibles. These dimensions serve as critical indicators of service quality across various industries, including MFAs (Parasuraman et al., 1988). In the context of MFAs, *Reliability* refers to the system's ability to perform transactions accurately and dependably, ensuring consistent service delivery that enhances user satisfaction. *Responsiveness* captures the promptness and willingness of service providers to assist customers, addressing their inquiries efficiently and fostering

positive user experiences. *Assurance* encompasses the knowledge, competence, and courtesy of service providers, which build customer confidence in the platform's security and professionalism. *Empathy* reflects the personalized attention and care provided to users, meeting their unique needs and strengthening their emotional connection with the service.

Empirical studies have demonstrated the significance of these dimensions in enhancing customer satisfaction and loyalty in MFAs. For instance, Singh (2019) highlighted that reliability and responsiveness significantly contribute to user satisfaction in mobile banking services. Similarly, Zariman et al. (2022) emphasized the importance of reliability and empathy in fostering customer trust and long-term loyalty in mobile payment platforms. Sharma et al. (2024) further underscored the need for continuous improvements in service assurance to meet evolving customer expectations. Moreover, Rahman et al. (2019) found that four SERVQUAL dimensions–reliability, responsiveness, assurance, and empathy–positively influenced customer satisfaction, whereas tangibles had a less significant impact in the mobile banking sector. These findings highlight the importance of leveraging SERVQUAL to bridge service quality gaps, ultimately enhancing customer satisfaction and loyalty in MFAs.

Based on the literature review, the following hypotheses were proposed:

H_5: Reliability positively influences customer satisfaction.

H_6: Responsiveness positively influences customer satisfaction.

H_7: Assurance positively influences customer satisfaction.

H_8: Empathy positively influences customer satisfaction.

Customer Satisfaction Positively Mediates Relationships between *SERVQUAL* Model and Customer Loyalty

Reliability, defined as the ability to consistently deliver services as promised, is a fundamental determinant of service quality (Parasuraman et al., 1988). In the context of MFAs, reliability refers to the system's ability to function seamlessly and execute user transactions accurately. Reliable service fosters customer trust, leading to higher satisfaction levels, which in turn encourages customer loyalty and discourages switching behavior (Molinillo et al., 2022). Responsiveness, the provider's readiness to assist, is key to service quality in MFAs. It involves efficient support, timely issue resolution, and proactive communication. Research shows that responsiveness boosts satisfaction, fostering loyalty through repeat use and positive word-of-mouth (Ismail et al., 2021). Assurance refers to the knowledge, competence, and courtesy of service providers that instill customer trust and confidence. In the MFA sector, assurance encompasses factors such as platform security, professional customer service, and compliance with regulatory standards. A high level of assurance enhances customer confidence, leading to greater satisfaction and long-term loyalty (Ludin & Cheng, 2014). Empathy, the ability to understand and address customer needs, is crucial in MFAs. It is reflected in personalized services, user-friendly design, and tailored support. Research shows that when customers feel valued, satisfaction rises, driving loyalty and long-term engagement (Kim et al., 2021).

Based on these results, the following hypotheses were proposed:

H_{5a}: Customer satisfaction positively mediates the relationship between reliability and loyalty.

H_{6a}: Customer satisfaction positively mediates the relationship between responsiveness and loyalty.

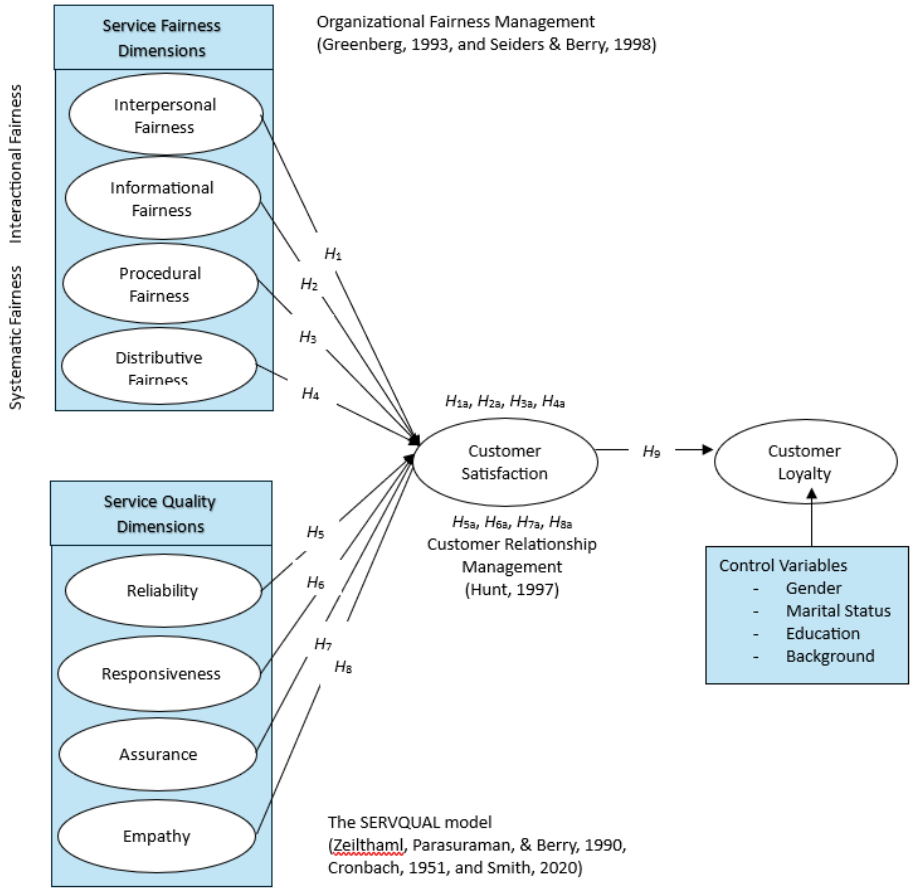
Therefore, the following hypothesis was formulated:

H_{7a}: Customer satisfaction positively mediates the relationship between assurance and loyalty.

H_{8a}: Customer satisfaction positively mediates the relationship between empathy and loyalty.

Figure 1 illustrates the research framework, outlining the relationships between service fairness, service quality, customer satisfaction, and loyalty. It portrays how fairness (distributive, procedural, interpersonal, and informational) and quality (reliability, responsiveness, assurance, and empathy) were thought to influence satisfaction and loyalty. Additionally, it examines customer satisfaction as a mediator, providing a comprehensive analysis of loyalty drivers in mobile financial applications.

Figure 1 *Conceptual Framework*



Methodology

This quantitative study used a structured survey to collect data from MFA users; it was divided into three sections: demographics, purchasing behavior, and adapted scale questions. The survey was translated into Khmer using a back-translation technique. The target population included customers over 18 who had used a Mobile Financial Application in Phnom Penh. A pilot test with 30 respondents assessed reliability and validity, followed by a Cronbach's alpha test and Exploratory Factor Analysis.

The survey data were analyzed using PLS-SEM with WarpPLS 8.0 to test hypotheses and maximize variance in the dependent constructs; this was done due to the small sample size and non-normal distribution. Pre-analysis checks ensured data quality, including construct validity and reliability, and the absence of multi-collinearity and common method bias. Descriptive statistics and Cronbach's alpha assessed demographics and reliability, while hypotheses were tested via multiple regression. Table 1 shows that composite reliability and Cronbach's alpha values ranged from .756 to .858, indicating strong internal consistency. Full collinearity tests showed a maximum VIF of 1.693, confirming no multi-collinearity or common method bias.

Table 1 *Results of Confirmatory Factor Analysis*

Fit Indices	IPF	INF	PF	DF	R	RS	A	E	CS	CL
CR	.862	.845	.864	.876	.891	.904	.860	.882	.856	.884
CA	.786	.756	.789	.809	.837	.858	.782	.821	.775	.824
VIFs	1.341	1.440	1.413	1.587	1.578	1.533	1.693	1.596	1.545	1.532

Note. Author's Calculations, IPF = Interpersonal Fairness, INF = Informational Fairness, PF = Procedural Fairness, DF = Distributive Fairness, R = Reliability, RS = Responsiveness, A = Assurance, E = Empathy, CS = Customer Satisfaction, and CL = Customer Loyalty.

The factor loadings of all measurement items in Table 2 range from .700 to .874, surpassing the .70 threshold and indicating strong associations with their constructs.

Table 2 *Convergent Validity (Factor Loadings, CR, and AVE)*

Variables	Item	Factor Loadings	Average Variance Extracted (AVE)	Composite Reliability (CR)
Interpersonal Fairness	IPF1	.825	.611	.862
	IPF2	.783		
	IPF3	.815		
	IPF4	.700		
Informational Fairness	INF1	.772	.578	.845
	INF2	.780		
	INF3	.762		
	INF4	.725		
Procedural Fairness	PF1	.808	.613	.864
	PF2	.787		
	PF3	.759		
	PF4	.777		
Distributive Fairness	DF1	.866	.639	.876
	DF2	.821		
	DF3	.793		
	DF4	.708		
Reliability	R1	.848	.672	.891
	R2	.812		
	R3	.818		
	R4	.800		
Responsiveness	RS1	.851	.702	.904
	RS2	.864		
	RS3	.813		
	RS4	.823		
Assurance	A1	.856	.607	.860
	A2	.789		
	A3	.741		
	A4	.723		

The Average Variance Extracted (AVE) values ranged from .578 to .702, exceeding the .50 threshold, confirming adequate convergent validity. Composite reliability (CR) values ranged from .845 to .904, all above the .70 minimum, ensuring high internal consistency. These results demonstrated that the measurement model meets the standards for reliability and validity, making it suitable for further analysis.

Data Analysis

The demographic analysis showed that all 470 respondents were over 18 and had used MFAs in Phnom Penh, making them suitable for the study. The sample was 64.3% male, 35.7% female, with 61% holding bachelor's degrees and 57% being single, indicating a youthful and educated population. ABA Bank was the most preferred MFA (48%), with 35% using it primarily for Internet banking. Seventy percent of respondents were comfortable with 70% of the MFAs offered, and 24% used the apps more than three times daily, indicating frequent usage.

The factor loadings for all items ranged from .70 to .871, demonstrating high validity and reliability (Cheung et al., 2024), and established strong correlations between the items and the respective constructs. The Composite Reliability (CR) values were between the ranges of .845 and .904, which were more than the recommended minimum of .70 for internal consistency in research as highlighted by Sarstedt et al. (2021). These authors reported unsupported values of average variance extracted (AVE) that ranged from .578 to .702, with a mean cut off value of .50 as proposed by Hair et al. (2020).

These findings show that the degree of reliability and convergent validity of the constructs was satisfactory, thus making the data fit for structural equation modeling (SEM) analysis. There was evidence in the findings that the constructs used met the Heterotrait-Monotrait (HTMT) criterion for discriminant validity, since all of the provided values were below .85 (Henseler et al., 2015). Likewise, Hair. et al. (2021) observed that HTMT values that .90 or lower are robust regarding discriminant validity. The results further revealed that the Average Variance Extracted (AVE) for each construct exceeded the squared correlations among constructs, thus satisfying criteria that explain the presence of non-redundancy and supporting the data quality.

The normality of the data was established by the Jarque Bera and Robust Jarque Bera tests performed for all constructs as normality failure tests. However, PLS-SEM can provide reliable results without normal data distribution, so this is not a limitation (Hair. et al., 2020). The assessment of model fit revealed strong support for PLS-SEM analysis with all ten indices over their specific cut-off values, as shown in Table 3, supporting the model's validity and reliability.

Table 3 *Model Fit and Quality Indices*

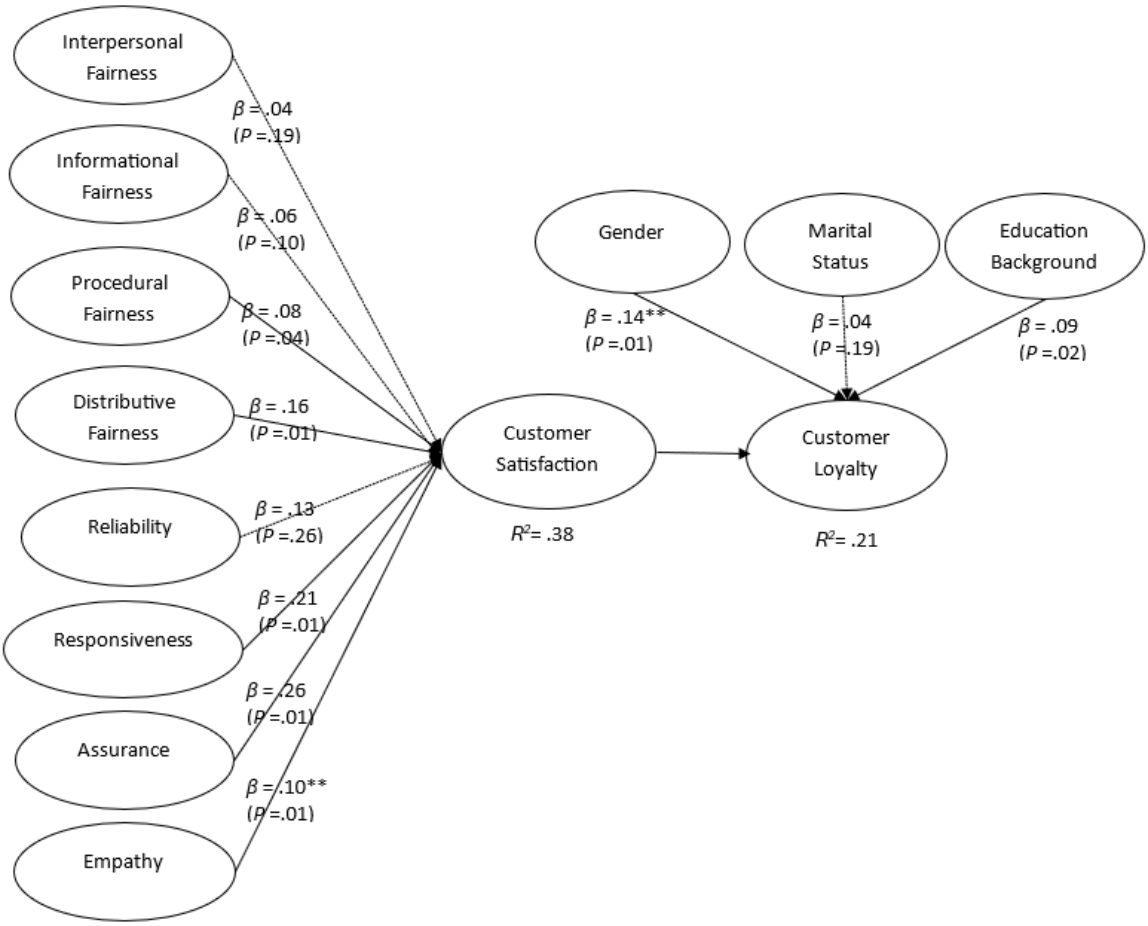
Model Fit Indices	Coefficient	Result
APC	.155***	Significant
ARS	.298***	Significant
AARS	.292***	Significant
AVIF	1.652	Ideally acceptable (≤ 5.0)
AFVIF	1.526	Acceptable (≤ 5.0)
GoF	.434	Large (≥.36)
SPR	1.000	Ideally (≥.70)
RSCR	1.000	Ideally (≥.90)
SSR	1.000	Acceptable (≥.7)
NLBCDR	1.000	Acceptable (≥.7)

Note. *** ($p \leq .001$) showing highly significant results; ** ($p \leq .01$) indicating moderate significance; * ($p \leq .10$) representing weaker but still meaningful significance.

More so, the Average Path Coefficient (APC) was .155***, while the Average *R*-squared, ARS and the Average Adjusted *R*-squared, AARS were .298*** and .292*** respectively. Therefore, the directional strength of the model was considerably significant. The Average Block VIF, AVIF, and Average Full Collinearity VIF, AFVIF were 1.652 and 1.526, respectively. This was acceptable, since these values were less than 5.0, hence avoiding multi-collinearity problems. In addition, the Tenenhaus GoF statistic was observed at .434 (larger i.e., ≥ .36), the Simpson's Paradox Ratio (SPR) at 1.000 (ideal ≥ .70), RSCR = 1.000 (ideal ≥ .90), SSR = 1.000 (acceptable, ≥ .70) and NLBCDR = 1.000 (acceptable ≥ .70). These findings corroborated the suitability and strength of the structural model, which improves the validity and reliability of the prevalence of measurement model as elaborated by Hair. et al. (2020).

Once the model quality was confirmed, PLS-SEM analysis was conducted to test the proposed hypotheses. The results are summarized in Figure 2, highlighting the relationships among the study variables. A mediation analysis using the Bootstrapping test was also performed, with findings presented after the PLS-SEM results discussion.

Figure 2 *Summary of* the PLS-SEM results



The data analysis revealed that customer loyalty was significantly associated with certain demographic variables, including gender (β = .14, $p < .01$) and education (β = .09, $p = .02$). However, no significant relationship was observed with other control variables (β = .04, $p = .19$).

Hypothesis Test Results

This section presents the hypothesis testing results of the PLS-SEM, summarized in Table 4. The proposed model includes 9 hypotheses related to social media marketing, customer experience, trust, brand awareness, and purchase intention. Six hypotheses were supported in the path analysis.

Table 4 *Hypothesis Testing Results*

Hypothesis	Relationship	β	*p*-value	Result
H_1:	IPF → CS	.04	.19	Not Supported
H_2:	INF→ CS	.06	.10	Not Supported
H_3:	DF → CS	.16	<.01	Supported
H_4:	PF → CS	.08	.04	Supported
H_5:	R → CS	.03	.26	Not Supported
H_6:	RPS → CS	.21	<.01	Supported
H_7:	A → CS	.26	<.01	Supported
H_8:	E → CS	.10	.01	Supported
H_9:	CS → CL	.46	<.01	Supported

Note. Author's Calculations: IPF= Interpersonal Fairness, INF = Informational Fairness, PF = Procedural Fairness, DF = Distributive Fairness, R = Reliability, RS = Responsiveness, A = Assurance, E = Empathy, CS = Customer Satisfaction, and CL = Customer Loyalty.

To perform the mediation analysis, we used the bootstrap resampling technique with 999 samples and a 95% confidence interval. This method improves the accuracy of estimating indirect effects by repeatedly resampling the data. If the confidence interval for an indirect effect excludes zero, the mediation effect is deemed significant. The results are presented in Table 5.

Table 5 *Bootstrap Mediation Test Results*

Hypothesis	Relationship	β	*p*-value	Effect Size	Result
H_{1a}:	IPF → CS→ CL	.09	.253	.003	Not Supported
H_{2a}:	INF→ CS→ CL	.06	.222	.006	Not Supported
H_{3a}:	DF → CS→ CL	.11	<.001	.023	Supported
H_{4a}:	PF → CS→ CL	.01	.145	.01	Not Supported
H_{5a}:	R → CS→ CL	.03	.311	.005	Not Supported
H_{6a}:	RPS → CS→ CL	.27	<.001	.032	Supported
H_{7a}:	A → CS→ CL	.25	<.001	.044	Supported
H_{8a}:	E → CS→ CL	.10	.082	.023	Not Supported

Note. Author's Calculation, IPF = Interpersonal Fairness, INF = Informational Fairness, PF = Procedural Fairness, DF = Distributive Fairness, R = Reliability, RS = Responsiveness, A = Assurance, E = Empathy, CS = Customer Satisfaction, and CL = Customer Loyalty.

Discussion and Implications

The results of this study suggested that service fairness and service quality dimensions do have an effect on satisfaction and customer loyalty in the MFAs studied; in some aspects, they conform to earlier findings, but in others, they deviate from them. Interpersonal fairness H_1, whereby people are polite and respectful to one another, was not statistically related to customer satisfaction nor its mediation effect on loyalty H_{1a}. This was in contrast to the conclusions of Hadi et al. (2020) and Hossain et al. (2021), who argued that respect was important for interactions within traditional services. In MFAs where face-to-face interaction with people is infrequent, interpersonal fairness may be less salient. Therefore, companies should devote their resources to personnel who work in touch points like call centers, chat services, etc., rather than focus on interpersonal fairness.

Informational fairness (H_2), focusing on the clarity of communication, was not found to significantly influence customer satisfaction or loyalty mediation H_{2a}. This differed in particular from Kohsuwan and Lawkobkit (2013) and Omar et al. (2021), who claimed that transparency in relation to trust in financial service is of great importance. The findings suggest, however, that transparency should not be thought to impact loyalty on its own without support from additional elements such as responsiveness and assurance. Hence, companies must seek to incorporate updates through competent and responsive customer service, such as automatic updates on transactions, as they occur in real-time.

Distributive fairness H_3, which is about fairness of outcomes, had a significant effect on customer satisfaction and loyalty mediation, as well as H_{3a}. This corresponds to the findings of Geebren and Jabbar (2021) along with Sofiana and Prihandono (2019), who noted strong correlations between fairness in pricing in relation to customer satisfaction and loyalty. MFAs need to concentrate on exhibiting fairness through strong marketing to enhance the perception of fair outcomes.

The fourth hypothesis, one that deals with processes being clear and evident–which was meant to relate to procedural fairness–did have an effect on satisfaction, but it did not have any effect on loyalty H_{4a}. This result confirms that fair processes increase satisfaction and loyalty in the context of adverse outcomes, as has been previously shown (Bacamante & Campos, 2024; Jung et al., 2017). Users need more factors, such as trust, in order to spur loyalty in the brand. MFAs need to simplify procedures and provide greater clarity in processes such as onboarding, resolving issues or disputes, and managing clients' accounts, because these tend to elicit discomfort.

Reliability H_5 was demonstrated to be an essential performance index for most clients, but these clients still did not exhibit loyalty; however, they did experience satisfaction or loyalty mediation H_{5a}. In contrast to Ismail et al. (2021), who emphasized the importance of reliability, this was not the case. In MFA's, reliability can be a given, as most users prioritize alternate dimensions, especially

responsiveness. So while a business is developing services such as a personal financial management tool, it is important to maintain a solid platform.

Responsiveness H_6 was found to be the strongest factor, encouraging both customers' satisfaction and loyalty mediation $H_{6a.}$ This is consistent with Moriuchi and Takahashi's (2016) recommendations regarding the role of quick support in enhancing customers' loyalty and satisfaction. For MFAs, this factor is multiplicative. Companies must minimize response time and provide various ways of assistance, such as online chat, phone service, or AI solutions.

Assurance H_7 was associated with trust and competence, and also played an important role in predicting satisfaction and loyalty mediation $H_{7a.}$ This finding supported those of Ludin and Cheng (2014), as well as Sharma et al. (2024)trust is an essential component when considering user satisfaction and repeated service intentions in the digital realm. To increase user trust, businesses should adopt state-of-the-art security systems, including two-factor authentication, strong encryption protocols, and fraud detection systems, and properly communicate these to users.

Empathy (H_8), the cognitive and/or effective emotional comprehension of the self or others, was shown to significantly impact satisfaction, but did not act as a predictor of loyalty H_{8a} when tested. This resonates in part with Kim et al. (2021), who pointed out the effect of empathy on satisfaction. The authors admitted that empathy in itself is not a sufficient precondition for garnering loyalty in digital services. It is therefore necessary to intertwine empathy in communications by providing the support necessary to make clients feel understood, while placing emphasis on other areas such as the level of service responsiveness and trust, which are important for translating satisfaction into loyalty.

As expected, customer satisfaction H_9 retained a strong relationship with loyalty, supporting the assumption within the SERVQUAL model that a positive relation exists, with satisfaction as an important mediator. Therefore, this stresses the importance of satisfaction as a bridge between service fairness/quality and loyalty. Managers should work on the performance of all-round enhancement of service dimensions in order to create the desired positive user experience, as well as conduct periodical measurements of customer satisfaction through surveys and feedback, as these are the benchmarks to complete alignment with customer requirements.

The lack of statistical significance in interpersonal and informational fairness provides valuable insights for MFAs. The diminished relevance of interpersonal fairness may result from reduced face-to-face interactions, while the impact of informational fairness is contingent on timeliness and trust, alongside confidentiality. Prioritizing distributive fairness, responsiveness, and assurance is essential for enhancing customer satisfaction and loyalty. Business leaders should optimize processes for clarity and efficiency, ensure prompt responses, implement trust mechanisms, and communicate service improvements effectively. Applying these insights can strengthen user experience, increase satisfaction, and foster long-term customer loyalty in the competitive digital finance sector.

Limitations and Recommendations

There were several limitations to this study. First, the study took place in Phnom Penh, Cambodia, which may limit the applicability of the outcomes to other areas with different infrastructural and economic conditions. Future studies may explore this conceptual framework in other countries and/or contexts. Second, the participants of the study were users aged 18 and over, and only MFAs subscribers to micro-lending sites, thus excluding other types of users: for example those who used banking, payment, or savings apps. Future research may include more diverse populations and samples. Third, this study employed quantitative approach with self-administered questionnaires, so the depth of responses to the survey instrument was limited. Future studies might apply mixed-method approaches, using both qualitative and qualitative methods which might extend in-depth understanding of the observed variables and influencing factors. Finally, the study did not take account of other variables such as culture or technology readiness, which seem to influence the use of MFAs and could be extended in future study to give a more holistic view of the problem of consumer behavior on MFAs.

Conclusion

To summarize, this study illustrated the significance of the service fairness and service quality dimensions on customer satisfaction and loyalty for MFAs in Phnom Penh, Cambodia. The results supported the inclusion of factors such as distributive fairness, procedural fairness, responsiveness, and assurance as motivators of user satisfaction and commitment. On the other hand, some dimensions such as empathy and interpersonal fairness were ascertained to have less influence on satisfaction. This study adds relevant information to the literature regarding MFAs that focuses on developing countries, and suggests recommendations to enhance user experience and customer retention in fiercely competitive environments.

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