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Customer Satisfaction and Financial Inclusion: The Role of Service Quality in Non-Banking Correspondents

Satisfacción del cliente e inclusión financiera: el papel de la calidad del servicio en los corresponsales no bancarios

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ABSTRACT

This research analyzes the relationship between customer satisfaction with non-banking correspondent services and financial inclusion. This study used the SERVQUAL model to measure customer satisfaction and analyzed its relationship with financial inclusion using partial least squares structural equation modeling (PLS-SEM), based on a stratified sample of 221 users of 24 non-banking correspondents. The results show that customer satisfaction is associated with financial inclusion through the quality of the physical and personal environments, which predominated as the most significant factor, and that all constructs clearly explain the latent variables. Furthermore, it became clear that inclusion is driven not only by financial infrastructure but also by a behavioral process of user perception, measured by satisfaction. Therefore, it is necessary to develop an ecosystem of experiences that ensures staff quality, environment, functional quality, access, product adaptation, and consumer protection, among other aspects that holistically integrate this ecosystem. This will provide a strategic framework for designing inclusive financial policies.

Keywords: Financial inclusion; Service quality; Customer satisfaction; Financial services; SERVQUAL

JEL Code: G210, M100

RESUMEN

Esta investigación busca analizar la relación entre la satisfacción de los clientes con los servicios de corresponsales no bancarios y la inclusión financiera. Se utilizó el modelo SERVQUAL para medir la satisfacción del cliente y se analizó su relación con la inclusión financiera mediante ecuaciones estructurales de mínimos cuadrados parciales (PLS-SEM) basadas en una encuesta aplicada a 221 usuarios de 24 corresponsales no bancarios, con una muestra estratificada. Los resultados mostraron que la satisfacción del cliente influye en la inclusión financiera a través de la calidad del entorno físico y personal, lo cual se considera el factor más significativo. Todos los constructos explican las variables latentes. Además, se evidenció que no solo la infraestructura financiera articula la inclusión, sino también un proceso conductual de percepción del usuario, medido por la satisfacción, por lo que es necesario desarrollar un ecosistema de experiencias que garantice la calidad del personal y del entorno, la calidad funcional, el acceso, la adaptación del producto y la protección al consumidor. Con ello se podrá establecer un marco estratégico para el diseño de políticas financieras inclusivas.

Palabras clave: Inclusión financiera; Calidad del servicio; Satisfacción del cliente; Servicios financieros; SERVQUAL

Código JEL: G210, M100.

INTRODUCTION

Financial inclusion has become a key factor in economic development and social stability, as it enables individuals and small businesses to better manage risks, save, and participate more actively in the formal economy (Demirgüç et al., 2022; Cipoletta & Matos, 2018). However, recent studies indicate that access to financial services does not guarantee consistent use or that people will remain within the system, especially in countries with high levels of informality and institutional weaknesses (Demirgüç et al., 2022; Carè et al., 2025). For this reason, financial inclusion is no longer understood simply as having a bank account, but as a broader concept that considers access, actual use, and quality of service, making user experience a fundamental element in understanding it (Cipoletta & Matos, 2018).

At the same time, the global financial system is undergoing profound changes driven by digitalization, FinTech, and the advance of open finance models. Empirical evidence shows that allowing accredited intermediaries access to financial data can increase competition, optimize credit conditions, and expand opportunities for traditionally rejected sectors (Babina et al., 2024). Similarly, new systematic explorations indicate that the relationship between the financial technology system and inclusion is a dynamic field of research, highlighting the role of innovation in reducing transaction costs and information asymmetries (Carè et al., 2025). However, these structural advances alone do not ensure sustained adoption or positive integration into the financial system.

Recent evidence on digital finance reinforces the need to analyze financial inclusion beyond channel availability. Dias and Perera (2026), through a systematic review of Scopus-indexed studies, identify mobile banking, e-wallets, electronic banking, agent banking, and online transfers as mechanisms that can expand financial inclusion by improving accessibility, availability, and quality of use. However, their findings also warn that digital financial illiteracy, regulatory constraints, socioeconomic disparities, and infrastructure limitations may restrict the benefits of these channels for vulnerable groups. This perspective strengthens the relevance of analyzing non-banking correspondents as hybrid service points, since they operate at the intersection between digital financial expansion, territorial access, and the user's concrete service experience.

The Ecuadorian context also provides recent empirical support for examining the link between financial inclusion and the transformation of banking services. Proaño and Feria (2026), using panel data from 24 private commercial banks in Ecuador between 2019 and 2022, show that financial inclusion is positively associated with asset profitability, while digital transformation is significantly related to return on equity among lower-performing banks. These results suggest that inclusion-oriented and digitally enabled strategies may act

as stabilization mechanisms in small, dollarized, and institutionally constrained financial systems. Therefore, studying customer satisfaction among users of non-banking correspondents is relevant not only from a service-quality perspective but also for understanding whether inclusive financial channels generate experiences that support sustained participation in the formal system.

From a behavioral perspective, studies on financial services agree that perceived quality and satisfaction are decisive factors in users' continued use of these services. Recent research, supported by structural models, shows that higher service quality directly affects customer satisfaction and that this satisfaction, in turn, influences the intention to remain with and continue using digital financial services (Pokhrel & Anup, 2024; Sharma et al., 2024). Similarly, studies in both traditional and digital banking confirm that the user experience—reflected in the reliability, security, responsiveness, and smooth operation of the service—is a solid indicator of customer satisfaction and loyalty (Silva et al., 2021; Brady & Cronin, 2001).

From a theoretical perspective, customer satisfaction is based on the expectancy-disconfirmation theory, which holds that people evaluate a service by comparing what they expected to receive with the performance they actually observe (Parasuraman et al., 1988; Kotler & Armstrong, 2018). This approach has been developed in the financial sector to incorporate relational and emotional aspects linked to trust, transparency, and transaction security (Yas et al., 2020; Tedja et al., 2024). Thus, satisfaction is not only a final assessment of the service but also a mechanism that links perceived quality to future user behavior, such as frequency of use and acceptance of new products.

Recently, network analysis-based approaches have sought to understand satisfaction as a central element within a complex set of service attributes, especially in multichannel banking environments where digital media, physical branches, and other alternative channels coexist (Moraes & Schaefer, 2026). This general view is particularly important in emerging economies, where digitization coexists with face-to-face schemes, such as non-banking correspondents, creating hybrid financial experiences.

In developing countries, non-banking correspondents have been promoted as key tools for extending coverage and reducing geographical barriers to access to financial services (Cipoletta & Matos, 2018). The non-banking correspondents are third-party agents, usually small shop owners in rural and semi-urban areas, who deliver banking services at locations other than bank branches or ATMs (Uzma & Pratihari, 2019). However, regional literature indicates that their effectiveness depends largely on service efficiency and user perceptions, especially in contexts marked by institutional mistrust or low levels of financial education (Vallejo et al., 2021; Calle & Montenegro, 2020). Thus, financial inclusion cannot be

measured solely by infrastructure indicators but must also consider the subjective dimension of the customer experience.

In Ecuador, although progress has been made in expanding service provision and increasing the number of financial institutions, significant levels of exclusion and restricted use of formal services remain among certain population groups (Demirgüç et al., 2022; Bonilla et al., 2025). This suggests that sustainable financial integration depends not only on service availability but also on users' satisfaction with their interactions with the system. International evidence suggests that when the experience is negative, formal access does not necessarily translate into frequent use or genuine financial consolidation (Carè et al., 2025; Pokhrel & Anup, 2024; Sharma et al., 2024).

As a result, combining organized perspectives on financial inclusion with behavioral guidelines based on customer satisfaction facilitates a more comprehensive understanding of the phenomenon. While studies on open finance and FinTech explain changes in the financial system's structure (Babina et al., 2024; Carè et al., 2025), service efficacy theory provides a framework for examining how user experience influences adoption and retention within the system. From this integrative approach, the present study analyzes the relationship between customer satisfaction and financial inclusion among users of non-banking correspondents in Ecuador, contributing to the current debate through a structural equation model that links experience dimensions to financial inclusion outcomes in an emerging context.

This study makes several contributions. First, it expands the literature on financial inclusion by linking it to customer satisfaction through the SERVQUAL model, arguing that inclusion depends not only on technology and infrastructure but also on the user’s perceived experience. It also provides evidence on non-banking correspondents, a context that has been scarcely studied and which, combined with a structural equation model, offers a level of methodological rigor and thematic depth not previously addressed. Finally, the results offer implications for banking institutions, decision-makers, and public policy legislators by showing that the non-banking correspondent strategy strengthens service quality, personal interaction, accessibility, and product adaptation, which promotes more robust, user-oriented financial inclusion.

CUSTOMER SATISFACTION AND FINANCIAL INCLUSION: THEORETICAL FOUNDATION

Financial inclusion can be understood as a process in which individuals and businesses have access to and can use formal financial services that meet their needs, under the criteria of security, transparency, and sustainability. At the regional level, Cipoletta and Matos (2018) suggest that it should be analyzed based on three essential dimensions: access, use, and quality, emphasizing that having financial infrastructure does not necessarily imply true integration into the system. Similarly, Demirgüç et al. (2022) point out that financial inclusion is a key element of economic development because it helps manage risks, encourage savings, and promote productive participation. Therefore, the literature agrees that opening bank accounts is not enough; users' actual experience within the financial system is also important.

In Latin America, academic debate has been moving toward approaches that combine institutional and behavioral factors to analyze financial inclusion. Vargas et al. (2024) point out that structural determinants—such as regulation, digitization, and infrastructure—should be integrated with variables related to user trust and the user's perception. Thus, studying financial inclusion also involves considering macroeconomic perspectives that reveal not only initial entry into the system but also active permanence and continued use of formal financial services.

In this context, non-banking correspondents have been identified as tools for expanding the financial system's presence in the territory. Cipoletta and Matos (2018) note that these means help minimize operating costs and extend coverage in rural areas or areas with limited banking presence, thereby promoting access to financial services where traditional infrastructure is limited. However, the literature highlights that their effectiveness is largely driven by the quality of service and the user experience at the point of service, which are directly related to customer satisfaction.

In theory, the quality dimension of financial inclusion relates to products being convenient for users, information being clear, costs being reasonable, and trust in the institution (Cipoletta & Matos, 2018). This idea aligns with open finance and financial digitization, in which interoperability, clarity, and data portability foster competition and optimize the user experience (Liu & Li, 2025). However, the literature agrees that technology contributes to inclusion only when it goes hand in hand with positive customer perceptions of the service they receive.

Recent open banking evidence also supports a multidimensional view of financial inclusion. Ryan and Mukherjee (2026) find, using a large cross-country panel, that open banking adoption increases the percentage of adults making or receiving digital payments, with particularly visible effects among less-educated adults. At the same time, the authors report no statistically significant effect on the number of mobile or internet banking transactions per 1.000 adults, suggesting that inclusion gains may emerge through broader payment behavior and non-bank channels rather than through formal banking transactions alone. This distinction is relevant for non-banking correspondents, because it supports the idea that access and use must be interpreted together with the type of channel through which users actually interact with financial services.

From a user experience perspective, El Amri et al. (2026) demonstrate, using structural equation modeling, that access to digital financial services, beliefs about those services, and safety measures positively influence individuals' personal experience of adopting digital payments. Their findings are especially useful for this study because they connect technical access with subjective dimensions such as convenience, security, efficiency, trust, and satisfaction. In this sense, customer satisfaction can be understood not only as a post-service evaluation, but also as the result of a broader interaction among perceived accessibility, security, confidence in the channel, and the usefulness attributed to the financial service.

From a service management perspective, customer satisfaction has been extensively studied as an assessment that arises after service use. Parasuraman, Zeithaml, and Berry (1988) developed the SERVQUAL model, which posits that perceived quality results from comparing what the user expected with what they actually experienced, considering aspects such as reliability, responsiveness, assurance, empathy, and tangibles. Later, the SERVPERF model was proposed, which posits that directly evaluating perceived performance is sufficient to calculate satisfaction. Both approaches agree that the service experience is key to forming the customer's evaluative judgment.

In recent experimental research, Silva et al. (2021) draw a relevant analogy among service quality, satisfaction, and subsequent customer behavior, confirming that perceived quality directly precedes satisfaction. Similarly, Vargas and Aldana (2013) note that service quality functions as an integrated system that combines processes, the physical environment, and human development, highlighting the need to evaluate it across multiple dimensions. These perspectives are particularly relevant in the financial sector, where service extends beyond transactional activity to include relational and trust components.

In the financial sector, customer satisfaction has a particular meaning linked to how customers perceive the security, transparency, and efficiency of operations. The Guide to Direct Measurement of Customer Satisfaction (González et al., 2007) highlights that

methodical evaluation of satisfaction is an important tool for strengthening loyalty and optimizing internal processes. Similarly, research such as that by Silva et al. (2021) shows that satisfaction is not only a final assessment of the service but also a factor influencing the prolongation of the relationship between the user and the institution.

Consumer behavior theory explains the relationship between customer satisfaction and financial inclusion: when the service experience is positive, users are more likely to use it again and recommend it to others. In the financial sphere, this is reflected in increased repeat transactions, the adoption of new products, and continuity within the formal system. Vargas et al. (2024) indicate that sustainable financial inclusion requires a combination of technological and institutional elements with the user's intrinsic experience, underscoring the importance of incorporating behavioral variables into explanatory models.

Furthermore, existing documentation on digital finance indicates that technological reinvention, encompassing open finance models, can extend access to financial services by reducing costs and increasing transparency (Liu & Li, 2025). However, these benefits are strengthened only when users experience efficiency and reliability in service channels, including non-bank correspondents. Thus, satisfaction acts as a springboard between structural innovation in the financial system and effective user inclusion.

Consequently, from an integrative perspective, customer satisfaction and financial inclusion are closely related concepts in financial services. The theory posits that a positive experience reinforces trust, promotes frequent use, and encourages permanence within the formal system, especially through decentralized channels such as non-bank correspondents. With this conceptual support, analyzing both constructs together allows for a better understanding of the mechanisms that drive sustainable financial inclusion in the Ecuadorian context.

METHODOLOGY

Study Area

This study was carried out in the canton of Samborondón, Guayas province, Ecuador. The canton covers 252 square kilometers, including urban areas (parishes of Samborondón) and rural areas (parish of Tarifa). Samborondón has a population of 102.404 inhabitants, with the urban area accounting for the majority, 72.425 inhabitants (70,72%). However, the canton is characterized by rice production. The canton is located near Guayaquil, the country's most populous city (approximately 3.244.750 inhabitants), which is why Samborondón has become urbanized due to the growth of private residences. In other words, Samborondón's economy is divided between residential areas and agricultural activity. The research was

geographically limited to the parish of Samborondón, within an 18-26 kilometer radius of the cantonal capital.

Data Collection

The data were collected from October 28 to November 7, 2024, in two stages: first, all non-banking correspondents in the study area; and then, a representative sample of their users. The data are cross-sectional, meaning they are collected at a single point in time and describe users' perceptions of service quality and satisfaction with non-banking correspondents. The data were collected under strict privacy agreements, as explicitly stated in the informed consent process, which guarantees the protection of respondents' personal information.

Non-banking correspondents

The study included 24 non-banking correspondents in the canton of Samborondón, belonging to Banco de Guayaquil (Banco del Barrio) and Produbanco (Pago Ágil). On average, Banco de Guayaquil and Produbanco accounted for 13% and 7% of customers in Ecuador in 2024, respectively. In addition, both accounted for 12% of the country's balances each. These entities are among the four non-banking correspondent entities in the country (Superintendencia de Bancos, 2025). Banco de Guayaquil has 5,200 non-banking correspondents nationwide. Banco del Barrio covers most establishments (75%) in the study area, as shown in Table 1.

Table 1
Number of non-banking correspondents distributed in Samborondón

Non-banking correspondents	Number of Correspondents	Participation
Banco del Barrio	18	75%
Pago Ágil	6	25%
Total	24	100%

Source: Servicio de Rentas Internas (2024)

Users

Based on surveys of 24 non-banking correspondents, we projected a total of 1.250 daily users for this service. This estimate is based on the average daily number of service users (Table 2). In this context, a representative sample of 221 users was obtained, calculated using simple random sampling with the following equation (1):

$$n = \frac{\frac{z^2 \cdot p(1-p)}{e^2}}{1+\frac{z^2 \cdot p(1-p)}{e^2 N}} \quad (1)$$

Where N is the population size (1,250 users), e is the margin of error (6%), z is the z-score corresponding to a 95% confidence level (z=1.96), and n is the sample size.

Table 2
Projected daily users of non-banking correspondents in the Samborondón canton

Users per day (average)	Banco del Barrio	Pago Ágil	Total number of correspondents	User projection	Participation
20	0	2	2	40	3.20%
40	6	5	11	440	35.20%
70	10	1	11	770	61.60%
Total	16	8	24	1250	100%

Source: own elaboration

In addition, a stratified sample was calculated based on the percentage share of non-banking correspondents in the study area (Table 3). In this case, Banco del Barrio had a 75% share, while Pago Ágil had a 25% share.

Table 3
Stratified sample by non-banking correspondent

Non-Banking Correspondent	Sample
Banco del Barrio	166 users
Pago Ágil	55 users
Total	221 users

Source: own elaboration.

Missing values in responses to certain questionnaire items were imputed using mode imputation, which replaces missing values with the mode of the available data for categorical variables (Mehmetoglu & Venturini, 2021). Of the 4,420 total data points (221 respondents × 20 items), only 5 values were missing (0.113%), appearing randomly distributed across items and respondents with no systematic pattern associated with any particular construct or subgroup. Under these conditions, mode imputation is a conservative and appropriate strategy for Likert-scale data, as it preserves the distributional properties of ordinal responses without introducing artificial variance.

Methods of Analysis

This research is based on a descriptive and correlational study that analyzes the relationship between customer satisfaction with non-banking correspondent services and financial inclusion. To this end, the SERVQUAL model, a validated tool for customer satisfaction studies (Brady & Cronin, 2001), and the concept of financial inclusion, with its dimensions of access, use, and quality (Cipoletta & Matos, 2018), were used.

SERVQUAL Model – Customer Satisfaction

The SERVQUAL model facilitates the evaluation of various aspects of service quality perceived by customers in the banking sector, providing valuable information to improve customer satisfaction (Fida et al., 2020; Alday, 2024; Bhuvaneswari & Maruthamuthu, 2024). Thus, the SERVQUAL model is suitable for studying non-banking correspondent services, as it enables us to assess satisfaction levels with these services. According to Brady

and Cronin (2001), customer satisfaction encompasses three dimensions: physical environment quality, functional quality, and staff quality. In terms of the quality of the physical environment, there are three components: the environmental (v1), which includes factors such as temperature, lighting, and the adequacy of the infrastructure; cleaning (v2), related to the hygiene of the space; and design (v3), which refers to the architecture or infrastructure appropriate to the service (Fida et al., 2020).

Functional quality includes the components of services, products, prices, and access. The service component (v4) is linked to the management of financial services, while the product component (v5) refers to the services offered by non-banking correspondents. The price component (v6) refers to fees charged for services, and the access component (v7) refers to waiting time for financial transactions (Alday, 2024).

Finally, staff quality includes the components of image, technical knowledge, and empathy. Image (v8) relates to staff appearance; the techniques (v9) relate to staff ability; and, finally, the empathy component (v10) relates to staff willingness to help the customer (Bhuvaneswari & Maruthamuthu, 2024; Silva et al., 2021). All components of customer satisfaction were evaluated using a Likert scale, where 1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, and 5 = Strongly agree. Table 4 presents the statistical description of the SERVQUAL model indicators used in the study.

Table 4
Descriptive Statistics of SERVQUAL Model Components in Customer Satisfaction

Constructs	Mean	SD	Min	Max
Physical quality of environment				
Environmental (v1)	3.64	0.998	1	5
Cleaning (v2)	3.47	1.130	1	5
Design (v3)	3.58	1.086	1	5
Functional Quality				
Services (v4)	3.55	1.097	1	5
Products (v5)	3.46	1.046	1	5
Prices (v6)	3.57	1.088	1	5
Access (v7)	3.49	1.098	1	5
Staff quality				
Image (v8)	3.57	1.121	1	5
Techniques (v9)	3.57	1.096	1	5
Empathy (v10)	3.49	1.139	1	5

Note: Customer satisfaction components were evaluated using a Likert scale, where 1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor agree, 4 = Agree, and 5 = Strongly agree
Source: own elaboration.

Financial Inclusion

Financial inclusion encompasses several dimensions: access, use, and quality (Cipoletta & Matos, 2018; López et al., 2023). The dimension of access refers to whether individuals and businesses can access financial services, which depends on physical proximity to these services in a given geographic area, the availability of bank branches, ATMs, and mobile money agents, as well as regulatory environments that facilitate such access (López et al.,

2023; Sharma & Changkakati, 2022). In this study, to determine levels of access, satisfaction with access (v11), possibility of use (v12), and ease of access (v13) to the services and products offered by non-banking correspondents were identified (Alday, 2024).

The usage dimension focuses on the adoption and frequent use of financial services such as savings accounts, digital payments, credit, and insurance (López et al., 2023; Sharma & Changkakati, 2022). This study examined users' use (v14), regularity (v15), and adaptation (v16) of the services offered by financial correspondents (Alday, 2024).

The quality dimension assesses whether financial products are adequate, affordable, and tailored to users' specific needs, ensuring their safe and sustainable provision. Thus, it analyzes how financial services meet users' expectations and needs from perspectives such as consumer protection, supervision, regulation, and variability. This dimension is used to assess the characteristics and depth of the relationship between the customer and the bank and to implement policies for continuous improvement in service delivery (López et al., 2023).

The study considered the components of variety (v17), which refers to the diversity of services offered by non-banking correspondents; regulation (v18), which refers to compliance with security standards; supervision (v19), which relates to regulatory monitoring; and consumer protection (v20), which refers to the protection of consumer rights with regard to the services offered by non-banking correspondents (Alday, 2024). The components of financial inclusion were assessed using a Likert scale, with 1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, and 5 = Strongly agree. Table 5 describes the indicators used to assess the dimensions of financial inclusion.

Table 5
Descriptive statistics for financial inclusion indicators

Constructs	Mean	SD	Min	Max
Access				
Satisfaction with access (v11)	3.51	1.13	1	5
Possibility of use (v12)	3.51	1.13	1	5
Ease of access (v13)	3.72	1.03	1	5
Use				
Use (v14)	3.62	1.14	1	5
Regularity (v15)	3.54	1.12	1	5
Product adaptation (v16)	3.63	1.06	1	5
Quality				
Variety (v17)	3.46	1.18	1	5
Regulation (v18)	3.57	1.16	1	5
Supervision (v19)	3.50	1.23	1	5
Consumer protection (v20)	3.36	1.15	1	5

Source: Own elaboration. Note: The financial inclusion components were evaluated using a Likert scale, where 1 = Strongly disagree, 2 = Disagree, 3 = Neither agree nor disagree, 4 = Agree, and 5 = Strongly agree.

The statistical method used to analyze the relationship between customer satisfaction and financial inclusion was partial least squares structural equation modeling (PLS-SEM), as it allows modeling when data do not meet normality assumptions. Normality was assessed using the Shapiro-Wilk test and the skewness and kurtosis tests. Most variables had p-values < 0.05, indicating deviations from normality (Table A1, Appendix). Mardia's multivariate normality test (mvtest normality) indicated that the data did not follow a multivariate normal distribution ($p < 0.05$). Additionally, the descriptive analysis showed skewness values between -0.65 and -0.23, while kurtosis ranged from 2.13 to 2.90 (Table A1, Appendix), both above the acceptable value of 2. Thus, we chose PLS-SEM, as it is appropriate for this type of scale and distribution (Sarstedt et al., 2022).

Based on the customer satisfaction theory (SERVQUAL model) and financial inclusion, we adopted a second-order reflective model in which customer satisfaction (CS) and financial inclusion (FI) are conceptualized as latent constructs that manifest through their corresponding dimensions (Figure 1). We performed PLS-SEM analyses using SmartPLS 4.0 to evaluate the measurement and structural models (Ringle et al., 2024; Venturini et al., 2023) using an accelerated Bootstrap resampling procedure with bias correction (BCa), with 5000 samples, a significance level of 0.05, and a two-tailed test. The higher-order constructs were estimated using the two-stage approach in SmartPLS 4, whereby latent variable scores obtained for each first-order construct in the first stage were used as single indicators of the higher-order construct in the second stage, accounting for the fixed loadings of 1.000 observed for CS_m and FI_m in the model (Hair et al., 2019).

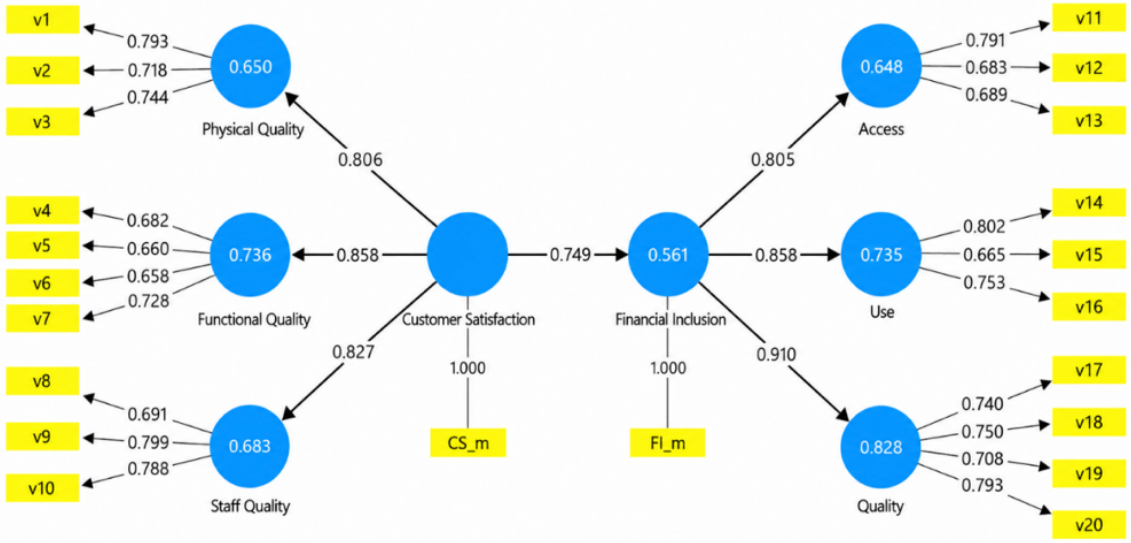
To assess potential common method bias, we employed a collinearity-based approach following the recommendations of Kock (2015). Outer model collinearity statistics (VIF) for all indicators were below 1.416, well under the conservative threshold of 3.3, and inner model collinearity statistics (VIF) for all structural paths were equal to 1.000, providing no statistical evidence of common method bias in the data. At the procedural level, participants were guaranteed full anonymity before completing the survey (no personal data was collected at any stage), and they were explicitly informed that there were no correct or incorrect answers, reducing social desirability bias and acquiescence effects.

RESULTS

Measurement model

The statistical techniques used to evaluate the measurement model were factor loadings, internal consistency, convergent validity, and discriminant validity. Most factor loadings exceeded the 0.70 threshold and were statistically significant ($p<0.01$), indicating satisfactory indicator reliability (Figure 1, Table 6). Only seven variables had loadings slightly below 0.70, indicating that they contribute less to the different dimensions. However, values between 0.6 and 0.7 are acceptable in exploratory research (Hair et al., 2019), as is the case with the proposed integration between customer satisfaction and financial inclusion, which is considered acceptable.

Figure 1
Validation of the customer satisfaction pathway model in financial inclusion (Outer loadings)



Source: Own elaboration. Note: Results obtained in SmartPLS 4 (Ringle et al., 2024); CS = Customer Satisfaction; FI = Financial Inclusion

For internal consistency (Table 6), Cronbach's alpha coefficients and composite reliability (rho_c) were computed; for convergent validity, average variance extracted (AVE) was computed (Gupta & Kiran, 2024). Cronbach's alpha coefficients were acceptable, ranging from 0.6 to 0.74, given the exploratory nature of the research (Hair et al., 2019). However, composite reliability values (rho_c) exceeded the threshold of 0.70 in all constructs. Convergent validity was adequate, with AVE values between 0.52 and 0.58, above the criterion of 0.50, except in the Functional Quality dimension, which had a value of 0.47 (Hair et al., 2019). Discriminant validity was assessed according to the Fornell-Larcker criterion (Table 7). In all cases, the square root of the AVE for each construct was greater than its

correlations with the other constructs (Fornell & Larcker, 1981). These results show adequate discriminant validity.

Table 6
Reliability and convergent validity results

Construct	Variables	Loadings	Cronbach's Alpha	Composite reliability (rho_c)	AVE
Customer satisfaction	Physical Quality of environment	0.806***	0.615***	0.796***	0.566***
	v1	0.793***			
	v2	0.718***			
	v3	0.744***			
	Functional Quality	0.736***	0.617***	0.777***	0.466**
	v4	0.682***			
	v5	0.660***			
	v6	0.658***			
	v7	0.728***			
	Staff Quality	0.827***	0.632***	0.804***	0.579***
	v8	0.691***			
	v9	0.799***			
	v10	0.788***			
Financial inclusion	Access	0.805***	0.540***	0.766***	0.522***
	v11	0.791***			
	v12	0.683***			
	v13	0.689***			
	Use	0.858***	0.587***	0.785***	0.551***
	v14	0.802***			
	v15	0.665***			
	v16	0.753***			
	Quality	0.910***	0.737***	0.836***	0.560***
	v17	0.740***			
	v18	0.750***			
	v19	0.708***			
	v20	0.793***			

Source: Own elaboration. Note: *** p<0.01

Evaluation of the structural model

Table 8 presents the coefficients and t-values for each path. Customer satisfaction had a positive and significant effect on financial inclusion among non-banking correspondents in the canton, with a coefficient of 0.748 ($p < 0.01$). The model explains 56.1% of the variance in financial inclusion ($R2 = 0.561$), indicating moderate predictive power (Hair et al., 2019).

Additionally, Table 7 presents the path coefficients between the higher-order constructs and their first-order dimensions. All path coefficients are significant at the $p < 0.01$ level, consistent with a second-order reflective specification in which the higher-order construct manifests through its dimensions (Hair et al., 2019). Financial inclusion shows significant paths to access (0.805; 95% CI = 0.747, 0.850), quality (0.910; 95% CI = 0.885, 0.928), and use (0.858; 95% CI = 0.812, 0.891). Similarly, customer satisfaction shows significant paths to physical environment quality (0.806; 95% CI = 0.755, 0.844), functional quality (0.858; 95% CI = 0.797, 0.893), and staff quality (0.827; 95% CI = 0.785, 0.859). These coefficients

are higher than those obtained for the relationship between customer satisfaction and financial inclusion (0.748; 95% CI = 0.662, 0.815).

Table 7
Discriminant Validity

Construct	Physical quality	Functional quality	Staff quality	Access	Use	Quality
Physical quality	**0.752**					
Functional quality	0.529	**0.683**				
Staff quality	0.524	0.555	**0.761**			
Access	0.404	0.543	0.509	**0.724**		
Use	0.474	0.544	0.665	0.569	**0.743**	
Quality	0.473	0.566	0.635	0.578	0.682	**0.748**

Note: Bold values are square roots of the AVEs; the values below the diagonal are the correlation coefficients between the variables.
Source: Own elaboration.

As a sensitivity check, the model was re-estimated using the original dataset without imputation, allowing SmartPLS 4 to handle missing values via pairwise deletion. The resulting path coefficient (CS → IF: $\beta = 0.749$, $p < 0.01$) and explained variance ($R^2 = 0.560$) were virtually identical to those reported in the main analysis (Table 8), confirming that the findings are robust to the imputation choice (Table A2 in Appendix).

Table 8
Structural Model Results

Path	Original sample	Sample mean	Standard deviation	T statistics	CI lower	CI upper
FI -> Access	0.805	0.805	0.026	31.023***	0.747	0.850
FI -> Quality	0.910	0.910	0.011	84.577***	0.885	0.928
FI -> Use	0.858	0.857	0.020	42.750***	0.812	0.891
CS -> Physical	0.806	0.806	0.023	35.337***	0.755	0.844
CS -> Functional	0.858	0.858	0.023	36.579***	0.797	0.893
CS -> Staff	0.827	0.827	0.019	44.306***	0.785	0.859
CS -> IF	**0.749**	**0.748**	**0.039**	**19.149*** **	0.662	0.815

Note: FI Financial inclusion, CS Customer satisfaction; *** p<0.01; IF (R2=0.561); SRMR=0.09
Source: Own elaboration.

DISCUSSION

This study analyzed customer satisfaction and its relationship with financial inclusion. The results show a significant association between the variables, explained through dimensions and together describing a unique model that, from the user's perspective, predicts and explains the mechanisms underlying financial inclusion. The proposed model is supported by a substantial explained variance, positioning these results as valid theories for designing public policies and inclusion strategies.

These results align with recent evidence indicating that financial inclusion depends on the interaction among service channels, user perceptions, and institutional conditions. Dias and Perera (2026) argue that digital financial mechanisms can expand inclusion by improving

accessibility and the quality of use, but only under adequate regulatory, technological, and educational conditions. Similarly, Proaño and Feria (2026) show that, in Ecuador, financial inclusion and digital transformation may contribute to the stability of banking institutions, particularly in more vulnerable segments of the financial system. From this perspective, the present findings suggest that customer satisfaction is not an isolated attitudinal outcome but a behavioral and relational mechanism that can help explain why users remain connected to inclusive financial channels such as non-banking correspondents.

Although the model as a whole is robust and holistic, it is necessary to break down its constituent elements, given that the results are not entirely homogeneous. It is important to capture nuances in the different contributions across dimensions. In this sense, the quality of the physical environment is the strongest predictor of the latent variable. This is composed of atmosphere, cleanliness, and design, which predominate due to their significance throughout the model.

This dimension supports the first assertion: trust generated by an orderly and secure environment is associated with greater financial inclusion. The finding reinforces previous studies showing that the tangible aspects of the service build trust, loyalty, and satisfaction toward the bank (Ceseña, 2020; Calle & Montenegro, 2020). Furthermore, it aligns with the findings of Wang et al. (2023), as a negative experience attributed to neglected environments reflects a lack of professionalism and, in turn, mistrust in service use. Therefore, having positive perceptions of the environment in which non-banking correspondents operate is positively associated with financial inclusion.

In contrast, staff quality shows a strong influence in the model. This includes dimensions such as image, techniques, and empathy, with empathy standing out as the most significant. This shows that, for users, the human component transcends efficiency; they value the guidance and personalization provided by the non-banking correspondent more than transaction speed, so good treatment translates into good service.

This finding is consistent with Bastidas et al. (2025), which posits that when staff are satisfied, well-treated, and empathetic, they provide better service. It also aligns with the findings of Espinosa et al. (2022), who state that customer trust prevails over the system's efficiency and effectiveness, since, in practice, shops or businesses should not behave solely as transaction processors but should redefine service around social interaction.

Although the results focus on human treatment, other opposing theories prioritize automation and AI-based services, in which speed and efficiency drive satisfaction (Xu et al., 2020). However, beyond theories, it is important to recognize that, in contexts of financial

vulnerability, empathy serves as a central axis of credibility within the system. Therefore, staff quality is significant and directly influences financial inclusion.

Consequently, the functional quality dimension, comprising services, products, prices, and access, explains the model only moderately, implying that users may attribute functionality to other factors as fully explaining it. This is not a weakness of the construct; on the contrary, it reaffirms the multidimensional approach with staff and environment quality. For this reason, the model's results suggest that the convergence of dimensions explains inclusion. The literature confirms the result that quality is specified by functional attributes (Ozili, 2020) and, furthermore, service quality based on this dimension shows a significant positive association with inclusion, even more so in vulnerable sectors where non-banking correspondents are well placed to contribute to users' financial needs, arguments that are contrasted by the theory of Dua and Dua (2023).

The model's results show that financial inclusion is strongly associated with customer satisfaction, reflecting the relationship between the latent variables. However, its own dimensions also reveal a two-dimensional construct that comprehensively explains its relationship. Its main dimension is quality, comprising variety, regulation, supervision, and consumer protection, an approach that broadly underpins the trust perceived by the user. This is based on the finding that trust is driven by service satisfaction, so there is no satisfaction without trust, supporting Leninkumar's (2017) theory, which argues that greater satisfaction leads to greater trust and vice versa. These results show that the perception of quality, where consumer protection is paramount, is not a negotiable factor in inclusion. Therefore, this result points towards the development of policies that strengthen these indicators to generate satisfaction and, in turn, inclusion.

The dimension of use also has a strong, significant influence on satisfaction and inclusion, indicating that recurrence among non-banking correspondents embodies these approaches. Regularity makes the service a habit, which strongly supports user satisfaction, since a lack of regularity means no satisfaction with the service. In turn, personalization through product adaptation involves searching for tools that meet needs in line with reality, which is why correspondents were created under this premise: they can meet expectations precisely because of their ability to adapt.

This argument supports the theory of Okeke et al. (2024), who indicate that personalization increases satisfaction, trust, and financial inclusion. In this regard, it is important to continue developing strategies that reach users by prioritizing their needs, especially in contexts of vulnerability, given that the results suggest that correspondents are positively associated with financial inclusion. Therefore, an initial needs assessment will allow us to create new ways to personalize services and drive satisfaction.

Similarly, the access dimension connects the initial approach to needs with the actual interaction with the financial system. The results support a positive cognitive-behavioral attitude toward correspondent services, which translates into user satisfaction due to rapid, effective fulfillment of needs and the perception that the service is tailored to them. Although satisfaction with access is an explicit indicator, the set of indicators comprehensively explains satisfaction and, in turn, inclusion. This framework supports Bashir and Muhammad (2023) by proposing that a positive attitude toward the service is based on beliefs of usefulness, which, in turn, translate into an intention to use. For this reason, access perceived as easy and possible, as well as services considered useful, generate overall satisfaction.

The findings on use and access also align with recent studies on digital and alternative financial channels. Ryan and Mukherjee (2026) show that open banking can increase participation in digital payments, especially among less-educated adults, reinforcing the importance of designing channels that reduce barriers and facilitate effective use. Complementarily, El Amri et al. (2026) emphasize that users' experience improves when access, positive beliefs, and safety measures are present simultaneously. Therefore, the positive association observed between satisfaction and financial inclusion in this study may be interpreted as evidence that non-banking correspondents contribute to inclusion when they are perceived as accessible, useful, secure, and adapted to users' everyday financial needs. Finally, the results reveal that the financial inclusion enabled by non-banking correspondent services stems from user satisfaction. In this sense, correspondents should not be seen only as a business but as a strategic experiential achievement for inclusion.

CONCLUSION

The study presents an empirical model that reflects the determinants of customer satisfaction in financial inclusion. It also provides a compendium of indicators that can predict both latent variables as a whole. Therefore, this model provides a holistic, two-dimensional framework for understanding the relationship between inclusion and satisfaction in financial terms.

The findings show that inclusion is associated not only with financial infrastructure but also with a behavioral process of user perception, measured by satisfaction. The study's main contribution is that service quality, across its dimensions, bridges the gap to inclusion. Environmental quality was the most significant factor, considered the primary driver of trust. In turn, staff quality, as measured by a predominant indicator such as empathy, ensures that users have positive experiences with customer service and protection, and variety also showed that users have confidence in the system. Taken together, these dimensions generate

a process of financial adoption achieved mainly through user satisfaction, centered on psychological mechanisms that shape perceptions of financial behaviors.

The study's practical implications are that inclusion strategies should not be based solely on accessible points of service, which, although they have led to effective integration into the financial system, cannot be viewed in isolation. Therefore, it is necessary to develop an ecosystem of experiences that guarantees staff quality, environment, functional quality, access, product adaptation, and consumer protection, among other significant aspects that holistically integrate this ecosystem. Consequently, the contribution to finance is to generate alternative services that build significant user confidence, based on the previously established model, where perception is a key variable to consider when establishing services.

Future lines of research may include a longitudinal design to demonstrate the evolution of this relationship. However, the proposed model offers a valid and empirically proven alternative: non-banking correspondents are not only financial services providers but have also joined forces to advance financial inclusion through approaches based on trust and perceived security for users. Integrated into an ecosystem of experiences, this will generate a strategic framework for designing inclusive financial policies.

Informed consent statement

Informed consent for participation was obtained from respondents who participated in the survey. Before participation, all respondents received comprehensive information about the study's objectives, their rights as research participants (including the right to participate voluntarily and to withdraw at any time without penalty), and the parameters of informed consent. Rigorous confidentiality protocols were implemented throughout the study, including guarantees of complete anonymity, strict limitations on data usage for academic research purposes only, and explicit assurances that no participant information would be shared with third parties**.**

Declaration of generative AI

It is hereby stated that all statements, opinions, and data contained in this article are the sole responsibility of the authors. In particular, they declare that no artificial intelligence (AI) tools were used in the text, figures, tables, or any section of the article; therefore, the text is considered the authors' own work for intellectual property purposes. Consequently, they release the editors and the journal from any ethical or legal liability. DeepL was used to translate from Spanish to English, and Grammarly was used solely to improve the manuscript's readability and language

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Appendix

Table A1. Shapiro–Wilk W test for normal data

				Shapiro–Wilk W test			
Variable	Obs	Skewness	Kurtosis	W	V	z	Prob>z
v1	222	-0.499	2.832	0.984	2.602	2.212	0.013
v2	222	-0.386	2.317	0.990	1.594	1.078	0.140
v3	222	-0.530	2.500	0.982	2.961	2.51	0.006
v4	222	-0.386	2.293	0.988	1.981	1.581	0.057
v5	222	-0.227	2.421	0.994	0.954	-0.109	0.543
v6	222	-0.419	2.440	0.989	1.845	1.417	0.078
v7	222	-0.288	2.221	0.991	1.416	0.805	0.211
v8	222	-0.510	2.520	0.986	2.243	1.868	0.031
v9	222	-0.549	2.593	0.983	2.707	2.303	0.011
v10	222	-0.432	2.374	0.989	1.760	1.307	0.096
v11	222	-0.429	2.308	0.987	2.116	1.734	0.041
v12	222	-0.424	2.395	0.990	1.693	1.218	0.112
v13	222	-0.616	2.898	0.979	3.447	2.862	0.002
v14	222	-0.645	2.622	0.977	3.681	3.014	0.001
v15	222	-0.510	2.481	0.985	2.403	2.028	0.021
v16	222	-0.449	2.393	0.984	2.648	2.252	0.012
v17	222	-0.395	2.251	0.991	1.529	0.981	0.163
v18	222	-0.424	2.198	0.987	2.192	1.816	0.035
v19	222	-0.448	2.133	0.985	2.414	2.038	0.021
v20	222	-0.332	2.305	0.993	1.065	0.145	0.442

Note: Test for multivariate normality Doornik-Hansen chi2(4) = 23.950 Prob>chi2 = 0.0001
Source: Own elaboration.

Table A2. Structural model results with missing values

Path	Original sample	Sample mean	Standard deviation	T statistics	CI lower	CI upper
FI -> Access	0.804	0.804	0.026	30.853***	0.748	0.852
FI -> Quality	0.907	0.908	0.011	80.817***	0.884	0.928
FI -> Use	0.859	0.859	0.020	43.085***	0.815	0.894
CS -> Physical	0.806	0.806	0.023	35.179***	0.758	0.847
CS -> Functional	0.857	0.857	0.023	36.592***	0.806	0.896
CS -> Staff	0.827	0.827	0.019	44.325***	0.789	0.862
CS -> IF	**0.749**	**0.747**	**0.039**	**19.415***	0.664	0.816

Note: FI Financial inclusion, CS Costumer satisfaction; *** p<0.01; IF (R^2=0.560); SRMR=0.09
Source: own elaboration.