

Modeling Developer Response Strategies to Digital Wallet App Reviews: An Empirical Study in App Stores

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Abstract

This research is primarily concerned with analyzing online user reviews in order to uncover the empirical factors that shape developer responses within digital wallet applications. In particular, the study sets out to investigate how the subject matter of user reviews affects three things: whether developers choose to respond, what kind of response they give, and which core communication strategy they rely on. In doing so, it sheds light on post-adoption service recovery and on the interaction between users and developers in mobile financial services. The study drew on 720 user reviews of the ZainCash mobile application gathered from the Google Play Store. It combined content analysis with quantitative modeling. Review topics were framed drawing on the mobile banking literature, while response types and strategies were coded using established software engineering frameworks. Non-parametric Chi-Square tests of independence were used to assess the associations across categories, and a Binary Logistic Regression model was built to estimate the probability of a developer reply based on the review's topic. Among the 720 reviews examined, developers responded to 71.53% of the overall feedback, with the majority of these replies (67.36%) taking the form of semi-interactive generic templates. A statistically significant association was found between review topics and response strategies ($\chi^2 = 183.504$, $p < .001$). In addition, the binary logistic regression model showed a significant overall fit ($\chi^2 = 34.821$, $p < .001$). Technical problems and complaints proved to be the strongest predictor of a developer reply, raising the odds of a response by 7.361 times relative to positive praise ($p = .001$). This work contributes fresh insight into digital financial services by empirically modeling how developers behave when responding within app stores. The results point to a distinct "service recovery bias," whereby developers give priority to technical and financial operational complaints over engaging with positive user praise, which carries practical implications for balancing automated coverage against personalized customer support.

keywords: Digital wallets, Mobile app reviews, Developer responses, Zain Cash.

1. Introduction

Digital transformation in the financial sector has transformed the way people conduct their daily business transactions (Thottoli et al., 2023). Digital wallets, which enable users to make real-time, secure payments, transfer funds and manage their finances directly on their mobiles, are among the most obvious examples of this transition (Graham, 2023). These applications have grown in popularity and users have increasingly relied on app stores as their primary yardstick for assessing

digital services and their feedback on them (Garg, 2025). The reviews found on these platforms have transcended being merely expressions of satisfaction to become a form of electronic word-of-mouth (eWOM) that can impact an app's digital reputation, influence adoption decisions, and influence the trust of existing and new users (Jafari et al., 2025).

For a digital wallet app, User reviews gain additional significance as compared to many other types of service apps (Choudhary, 2025). The content they post frequently deals with delicate financial and safety issues from lost cash, unsuccessful transactions, login mistakes, or account security breaches, which are directly related to user confidence and their desire to continue utilizing the app. In this context, a developer's reply to a review is not only a 'communicative act' which is intended to solve a technical problem or provide information (Hassan et al., 2018). On the contrary, it serves as a strategic tool to manage users' relationship, mitigate the repercussions of negative reviews, earn trust, maintain the digital reputation of the app, assist in service recovery and enhance the user experience (Albeshar, 2023).

Although there has been an increasing interest in these areas, these topics have been largely studied as distinct research lines rather than merged into one empirical research field. The research on digital wallets has largely been focused on technical, cybersecurity, and motives that underpin adoption of digital financial services (Bhuvaneswari & Mani, 2023). Online reviews have been the topic of numerous studies related to their credibility, their influence on consumers' decision-making process and their information value (Walther et al., 2025). In the meantime, developer responses have been explored for their response characteristics, levels of empathy, and their implications for app ratings, but with no specific focus on digital wallet apps because of their environment of heightened risk and sensitivity to money (Srisopha et al., 2021). Albeshar (2023) also categorized developer responses without testing the relationship between the review topics and the response patterns nor the predictive power of the review topics to the probability of a response. Gupta and Srivastava (2026) noted that a small fraction of applications actively solicit feedback from users, highlighting the need for continued processes of feedback to improve the quality of their services. This gap is an indication of a lack of research about the relationship between review topics and the response types of developers in digital wallet apps, along with limited quantitative evidence of predictability between review topics and the probability of the developer responding.

In this regard, the present study proposes an analytical approach that integrates descriptive, relational and predictive analysis, in the sense that it allows to make sense of the dynamics between users and developers in digital wallet applications. The present study focuses on ZainCash application, which is one of the famous non-banking digital wallet applications in Iraq, by reviewing the topics of the users' ratings in the Google Play store, types of the responses provided by the developers, and the communication strategies adopted. It also evaluates the effectiveness of the topics for the developer to respond to a review and aims to provide insights for improving the quality of communication and trust in digital financial services (DFS) (Gupta & Srivastava, 2026).

As for the method, this study uses quantitative content analysis (Krippendorff, 2018; Neuendorf, 2017) which is used to review the user reviews on the product and uses the statistical method appropriate for nominal data. The distribution of review topics, response type, and strategies is described in terms of frequency and percentage. Chi-Square tests of independence and Cramer's V measure the association of review topic to the response type and strategies. A Binary Logistic Regression model is also used to determine the predictive power of review topics for the likelihood of a Developer Response. Based on the above, the study will seek to answer the following central research question: What is the relationship between the topic of a user review with the type and strategy of developer response and the likelihood of a developer response, when using a digital wallet application? This main question can be divided into 4 sub-questions:

1. What are the distributions of user review topics, developer response types and response strategies?
2. Is there a statistically significant association between review topic and developer response type, when the developers' responses are classified as "Yes" or "No"?
3. Are there any statistically significant differences between review topic and developer's major response method?
4. How well does review topic predict Developer reply?

These findings will contribute to the body of knowledge on review management in digital wallets by elucidating the relationship between topics of the reviews and developers' response patterns. The research also provides useful insights to app developers about developing effective review-management policies to improve user communication and trust in mobile financial services. The rest of the paper is organized as follows: Section 2 presents the theoretical framework and a review of the literature; Section 3 provides an explanation of the research methodology used; Section 4 presents the empirical results; Section 5 discusses the findings; and Section 6 concludes the paper with a discussion of managerial implications, limitations, and future research directions.

2. Theoretical Framework and Literature Review.

2.1 Digital Transformation and Digital Wallet Apps:

During this session, the benefits of digital wallet apps for the retail industry will be presented, along with the need to build trust and customer engagement. Digital transformation is the driving force that is changing the financial services industry. It is not just about digitizing existing processes but a transformation of business models, service provision, and customer-institution interactions. The data-driven financial ecosystem is emerging as a result of technologies like artificial intelligence (AI), big data analytics, blockchain, and cloud computing, which have enhanced efficiency in operations, reduced transaction fees, and improved service delivery (George, 2024; Zaika, 2025).

Digital wallets are one of the key applications of financial digitalization in this greater transformation. They combine all financial transactions into one unified platform that is easily accessible from smart devices, providing a viable alternative to banks for everyday needs (Bhuvaneswari & Mani, 2023;

Makhotin & Elhaoussine, 2020). Digital wallets represent more than just a shift in technology; they represent a shift in how users and providers interact with one another, with user experience playing an integral part in maintaining the usage of the app and guaranteeing customer dedication to the brand.

Digital wallets vary widely in the way they work, ranging from closed wallets to crypto wallets, to super apps (Garvita et al., 2025; Levitin, 2017, 2018; Sutticherchart & Rakthin, 2023). There are varying risk profiles, functional capabilities, and expectations associated with this variety. Despite this, all digital wallet models contain highly sensitive information relating to the end-user's personal and financial data and hence trust is vital for both adoption and ongoing usage following the initial adoption (as opposed to a general consumer service, where failure is likely to have less severe repercussions).

The literature thus emphasizes the need for a digital wallet to go beyond technical infrastructure, and requires continuous efforts to build and maintain trust. The adoption framework indicates that users' trust in the adoption process is influenced by perceived security, perceived usefulness, usability, and the credibility of the provider, with security and service infrastructure issues being the barriers to adoption (Sutticherchart & Rakthin, 2023). However, most of the previous studies conceptualize trust as a condition that comes before initial adoption, but in reality trust is a continuous condition that is continually "refashioned" as users interact with the app after adoption.

This interaction is particularly crucial if the users encounter operational issues related to security, execution, or fund management. In these instances, consumers become evaluative and enter the app store to post reviews. Such reviews are important public indicators that influence users' decisions and are also a direct feedback for the developers to improve their service. User feedback and developer responses are therefore a key component of digital transformation, demonstrating an organisation's ability to adapt and respond on the fly.

2.2 User reviews and developer responses:

Feedback from users is an important feedback loop on digital platforms, and has become more than just a measure of satisfaction, it has become a source of information that helps inform future service enhancement. Reviews are more significant in digital wallets because apart from the usability of the interface, users are considering how safe their money is, how reliable their transactions are, and how well their data is protected.

Based on the literature, there are two levels of operations for online reviews: the first is to create an initial impression of the quality of a digital financial service and the second is to lower the uncertainty of the adoption of a digital financial service. This effect is heavily dependent on the written text content of the review, as well as how credible it appears to be, more so than simply star ratings, as users are likely to look for diagnostic clues in the written content before committing to a service (Choudhary, 2025; Varma, 2025; Walther et al., 2025).

There are features for the domain that are usually assessed in digital wallet reviews, such as transaction security, processing speed, system stability, responsiveness of support, and discrepancies in balances, or delays in transfers. This highlights just how important it is in digital financial services: one little technical glitch can cause major financial and psychological problems (Anwar et al., 2024). But the real power of reviews is to identify problems in the system that need to be addressed by the developer right now.

Developer responses is the last part of this feedback loop, making user feedback truly two-way. If it is done well, each response addresses the individual complaint, and demonstrates that the organization is responsive to a broader audience, thereby enhancing overall trust and reputation on the platform (Albeshar, 2023; Hassan et al., 2018).

The effectiveness of the response will be determined by qualities of the communication. According to literature, timeliness, relevance of content, politeness, empathy and concrete troubleshooting steps are the main factors contributing to successful exchanges between users and developers (Devathasan et al., 2024; Jafari et al., 2025; Srisopha et al., 2021). In this sense, developer response practices are also an integral component of the quality of digital services, and they play a key role in repairing user's trust, lowering the risk for the developer, and longer-term use of the service.

2.3 User-Developer Interaction Dynamics:

While user reviews are mentioned, and developer reactions to the phenomenon noted in the existing literature, these three aspects have mostly progressed in isolation. Adoption studies focus on factors leading to adoption (e.g., perceived security, usefulness); review studies focus on the helpfulness and sentiment-laden nature of reviews; and developer response studies focus on generic response qualities (e.g., response time, personalization, empathy; Albeshar, 2023; Devathasan et al., 2024; Hassan et al., 2018; Srisopha et al., 2020a, 2021). Consequently, there is no single framework that encompasses the whole interaction loop in financial applications.

User reviews and developer responses are a service recovery continuum when considered collectively. A review indicates that there is a disconnect between what the user was looking for and what the application actually delivered; a developer response is an indication that the organization is able to assimilate the feedback from the review and respond to it. As long as this exchange is conducted with good management, it calms the user who has experienced the dissatisfaction, and demonstrates reliability to visitors of the app store, reducing uncertainty in adoption and increasing trust.

On this, the study takes an approach that treats the relationship among users and developers as a dynamic one of trust management. The conceptual model it presents is based on the idea that the nature of a review (functional topic) affects the decisions made regarding the response and the communication process, which then affects the recovery service experienced after adoption and the platform's continuous development. As illustrated in Figure 1.

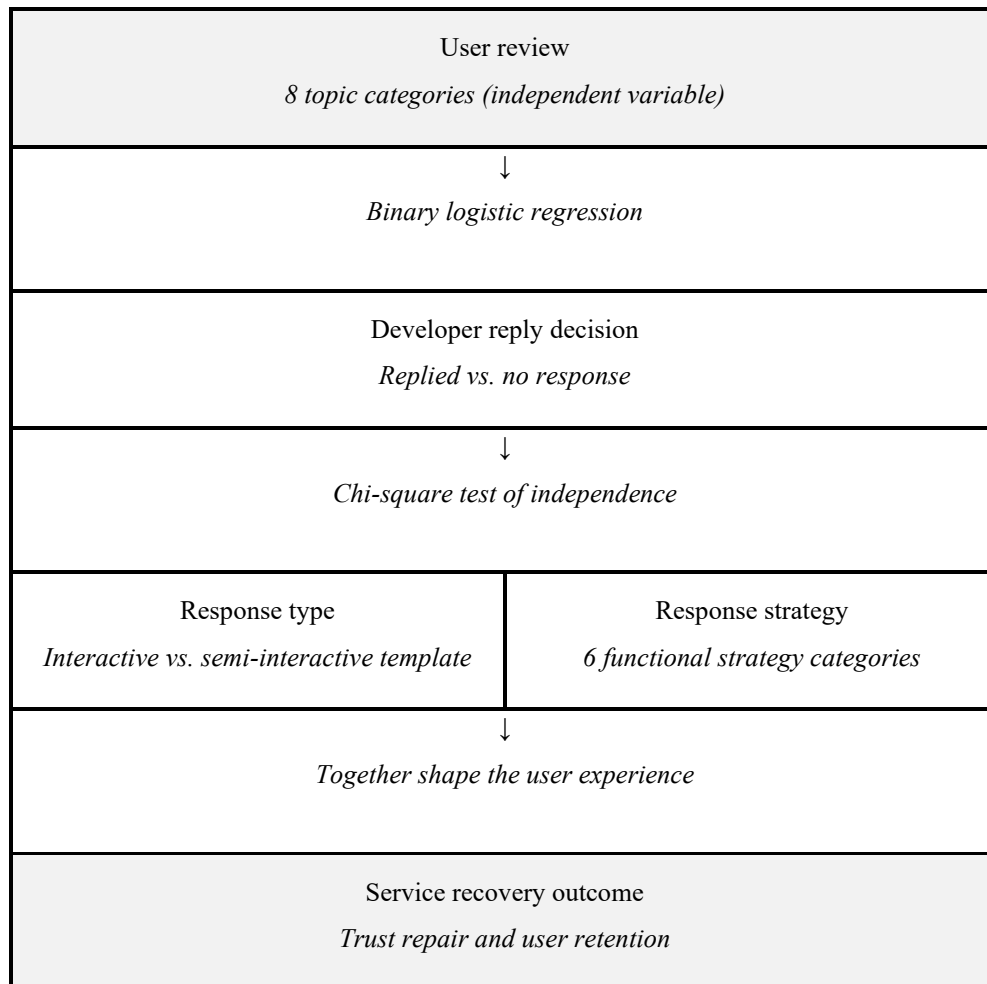


Figure 1. Conceptual research framework linking review topic, developer response, and service recovery outcomes

2.4 Literature Review:

As for previous studies relevant to this study, there are four broad categories:

1. **Digital transformation:** in Financial Services: Evidence shows that these technologies have brought significant changes in business models in FS (George, 2024; Thottoli et al., 2023; Zaika, 2025); 3. Disruption in legacy banking by FinTech: Evidence indicates that FS legacy banking is impacted by FinTech disruption (Jowarder, 2024; Rajan, 2025; Siddiqui et al., 2023).
2. **Digital Wallet Applications:** Research on operational architectures (Makhotin & Elhaoussine, 2020), benefits on financial inclusion (Azhari, 2021), vulnerabilities in payments (Anwar et al., 2024) and comparison on usefulness of digital wallets with crypto wallets (Garvita et al., 2025).

3. **Online User Reviews:** Empirical work in this stream focuses on the role eWOM plays in reducing risk and assisting decision making (Choudhary, 2025; Varma, 2025), its impact on download conversions (Zhou & Duan, 2016), the credibility of the eWOM source (Walther et al., 2025), and metrics of readability (Gan et al., 2012).
4. **Developer responses:** This body of literature explores taxonomies of response types (Albeshier, 2023; Hassan et al., 2018); the reasons for successful responses (including speed and politeness) (Srisopha et al., 2020a, 2021); algorithms for prioritising responses (Jafari et al., 2025); and empathy versus automation in responses (Devathanan et al., 2024; Greenheld et al., 2018); and how responses feed downstream into source code changes (Licorish et al., 2018).

Existing study on the developer response has primarily focused on general software areas (Hassan et al., 2018; Srisopha et al., 2021) or legacy mobile banking (Albeshier, 2023). Empirical studies that specifically examined developer interaction to non-banking digital wallet apps are limited. To date, few studies model the direct relationship between specific review topics and developer response strategies, and fewer by far quantify the predictive power of the review topics for the probability of developer reply in high-risk financial application settings. This study aims to fill these gaps by integrating content analysis, cross-categorical testing and predictive modelling.

3. Methodology

3.1 The design of the study and source of data:

The design of the study in this study is quantitative research, the method used is quantitative content analysis which is used to convert qualitative text data into categorical data in a structured form that can be analyzed statistically (Krippendorff, 2018; Neuendorf, 2017). Cross-sectional observational research was conducted to analyze the user reviews and responses of developers over a particular period.

The empirical setting includes the ZainCash mobile application available on Google Play Store, which is considered the leading mobile non-banking digital wallet in Iraq. With the large user base and a significant number of public reviews, The data were obtained using the Chrome browser extension Instant Data Scraper (version 1.6.0; Flavr Technology, LP, 2025). ZainCash is an ideal platform to explore the relationship and dynamics between users and developers. There are 720 user reviews, of which 515 were answered by the developer and 205 were not. The unit of analysis is one user review post, whether or not it was given a response by a developer. Data were gathered publicly in compliance with research ethics, and users were anonymous, not traceable.

Reviews were gathered from the July 21, 2025 to July 22, 2026 period of time, which includes all public reviews from that time period. The researcher's native language, Arabic, was used in all the times of conducting reviews as well as in the process of coding, to ensure the contextual accuracy in the analysis. Only the final results and manuscript were translated into English for reporting purposes. All the reviews analysed are publically available on the Google Play Store. No personally identifiable

information was recorded or reported (e.g. reviewer usernames) and all the examples in this study were made anonymous or paraphrased to avoid user identification.

Case Context: Zain Cash Application Overview:

Since 2016, the Central Bank of Iraq has licensed ZainCash as a mobile wallet to provide electronic financial services. It is considered one of the first non-banking digital wallet services to have been launched in the Iraqi market – around the time of its licensing – and the first mobile cash assistance distributions by a human rights body. Since its launch, ZainCash has facilitated billions of financial transactions for individuals, entities and corporations, and government bodies. In 2019 it was awarded the “Telecom Lead Innovation” award, and in 2020/21, was nominated for the “Best Mobile Innovation Supporting Emergency or Humanitarian Situations” award by the GSMA. The app allows users to open online financial accounts for free without a minimum balance. It is mainly used for local and international money transfer, cash deposit and withdrawal, bill payments, mobile airtime top-up, QR code payment and virtual and physical cards (Mastercard and Visa). The advanced security mechanisms are enhanced by a risk management team and include 3D face recognition (Face ID), 3D Secure notifications and multi-factor authentication (MFA). (ZainCash, n.d.)

The platform has a vast network of agents, with thousands of them located in Iraq, and reaches more than one million users with approximately 10,000 cash agents (ZainCash, n.d.), handling more than 35 million transactions last year alone. ZainCash also made it to the Top 50 FinTech Companies in the Middle East for 2025 after appearing in Forbes Middle East's annual list of the top 50 FinTech Companies for 2023, 2024 and 2025 (Forbes Middle East, 2025). Importantly, given the position that ZainCash has developed in the market, it is an excellent case of a non-banking digital wallet for testing the proposed analytical framework in an emerging economy with a high penetration of digital wallets and sensitive financial data.

3.2 Constructing the operationalization and coding scheme:

The domain-specific mobile banking and software engineering frameworks (Albeshier, 2023; Çallı, 2023; Grljević et al., 2025; Hassan et al., 2018) were compiled. The coding protocol was checked for categories which are mutually exclusive and well defined before it is implemented in its entirety. The topic of user reviews were manually categorized into 8 operational topics for digital wallet services (Çallı, 2023; Grljević et al., 2025):

- Positive Praise
- General / Other
- Account & Login Issues
- Technical Problems / Complaints
- Money Transfers & Remittances
- Card Services (Mastercard / Wallet Card)
- Cash-Out & Agent Fees
- Feature Suggestion

Developer response attributes (the dependent variables) were operationalized along three dimensions:

- The Developer Reply Status was a binary categorical variable (1 = , 0 =).
- Structural Response Mode (Response Type): Three major patterns, based on Albeshar (2023), Interactive Response, Semi-Interactive Response and No Response.
- Substantive Strategy Content (n = 515): Six functional categories adapted from Hassan et al. (2018): Direct Solution / Actionable Steps, Refer to Support Channels, Apology + Support / App Update, Thanking User, Clarification & Information Provision, Apology + Support / Cache Clear Request.

The coding was done manually, in order to reflect the contextual features in the Arabic text of the review and also in the developers' responses. A random subsample of 100 reviews (about 14% of the total) was also independently coded by a second rater to ensure reliability of coding. Inter-rater agreement was determined by measuring agreement between raters using Cohen's Kappa with results of $\kappa = 78\%$ that is substantial agreement (Landis & Koch, 1977). Issues of discrepancies were addressed through discussion until resolution was achieved.

3.3 Statistical Analysis:

IBM SPSS Statistics was used for statistical analysis. How the categories were distributed was summarized using descriptive statistics (frequencies and percentages). Chi-Square (χ^2) tests of independence were used for cross-categorical comparisons of review topics and response attributes, and Cramer's V statistic was used to measure the effect size. To assess the predictive likelihood, a Binary Logistic Regression model was specified where the overall response decision (1 = , 0 =) was the outcome variable and review topics were categorical predictors (Hosmer et al., 2013). The criterion of statistical significance was set at = .05.

4. Results

We used a step-by-step quantitative analysis of 720 cases to address the four research questions of the study. Descriptive statistics were used to answer the first question; Chi-Square tests of independence were used to examine the relationship between variables for the second and third questions and a Binary Logistic Regression model was constructed to test the predictive relationship for the fourth question. The results are presented below.

4.1 Descriptive analysis of the study variables:

To address the initial research question of overall distribution of user review topics, developer response decisions, response formats, and response content strategies, descriptive statistics were computed over the entire sample of 720 cases.

Table 1. Descriptive Statistics of Study Variables (N = 720)

Variable	Categories	Frequency (n)	Percentage (%)
Review Topic	Positive Praise	322	44.72%
	General / Other	236	32.78%
	Account & Login Issues	46	6.39%
	Technical Problems / Complaints	40	5.56%
	Money Transfers & Remittances	38	5.28%
	Card Services (Mastercard / Wallet Card)	25	3.47%
	Cash-Out & Agent Fees	8	1.11%
	Feature Suggestion	5	0.69%
General Response Decision	Replied (Yes)	515	71.53%
	No Response (Ignored)	205	28.47%
Structural Response Mode	Semi-Interactive (Standard Template)	485	67.36%
	No Response	205	28.47%
	Interactive (Tailored / Direct Solution)	30	4.17%
Substantive Strategy Content	Direct Solution / Actionable Steps	223	43.30%
	Refer to Support Channels	153	29.71%
	Apology + Support / App Update	90	17.48%
	Thanking User	27	5.24%
	Clarification & Information Provision	12	2.33%
	App Update / Cache Clear Request	10	1.94%

Note. Percentages for Substantive Strategy Content are calculated based on replied reviews (n = 515).

4.2 Tests of Independence and Bivariate Associations

Chi-Square tests of independence were conducted to answer the second and third research questions: Do reviews address topics systematically and is there a relationship between the review topics and the format/content strategy of developer responses?

Table 2. Chi-Square Tests of Independence for Review Topics and Response Attributes

Dependent Variable (Response Attribute)	χ^2	df	p-value	Cramer's V	Association Strength
Structural Response Mode	51.752	14	< .001***	0.190	Weak to Moderate
Substantive Strategy Content	183.504	35	< .001***	0.267	Moderate

Note. N = 720. The associations were interpreted based on Cohen's (1988) convention benchmarks for Cramer's V (small ≈ 0.10 , medium ≈ 0.30 , large ≈ 0.50 for $df > 1$) thus signifying that the relationships are statistically significant with a large sample size, but that the strength of the relationships is relatively modest.

*** $p < .001$.

4.3 Predictive Modeling of Developer Response Decisions:

To address the fourth research question, about the effectiveness of the review topics to indicate whether a developer responds at all or not, we created the Binary Logistic Regression model with the baseline reference class as "Positive Praise.

Table 3. Binary Logistic Regression Model Predicting General Response Decision (1 = Yes, 0 = No)

Review Topic (Predictor)	B	SE	Wald	p-value	Odds Ratio (OR)	95% CI for OR
Technical Problems / Complaints	1.996	0.609	10.742	.001***	7.361	[2.231, 24.282]
Card Services (Mastercard / Wallet Card)	1.281	0.627	4.175	.041*	3.599	[1.053, 12.298]
Money Transfers & Remittances	1.175	0.492	5.698	.017*	3.239	[1.234, 8.502]
Account & Login Issues	1.006	0.427	5.541	.019*	2.734	[1.183, 6.317]
General / Suggestions	-0.031	0.181	0.030	.863	0.969	[0.680, 1.381]

Note. Reference category = Positive Praise. Dependent variable: General Response Decision (1 = Yes, 0 = No). Model Fit: LLR $\chi^2(5) = 34.821$, $p < .001$, McFadden's $R^2 = 0.0405$.

* $p < .05$. ** $p < .01$. *** $p < .001$.

4.4 Summary of Empirical Findings:

The descriptive results (Table 1) show that positive praise reviews are common, making up 44.72% of the sample, alongside an overall developer response rate of 71.53%. Developer replies leaned heavily on semi-interactive generic templates (67.36%), and their substantive strategies centered mostly on direct solutions (43.30%) or on directing users to external customer support (29.71%).

The cross-categorical Chi-Square tests (Table 2) confirm statistically significant associations between review topics and developer response patterns, both for the structural mode of response ($\chi^2 = 51.752$, $p < .001$, $V = 0.190$) and for the substantive content of that response ($\chi^2 = 183.504$, $p < .001$, $V = 0.267$). This confirms that the type of problem raised in a review systematically is associated with both the structure and content of what developers write back.

The predictive model built through binary logistic regression (Table 3) shows a significant overall fit ($\chi^2(5) = 34.821$, $p < .001$). The model reveals a pronounced tendency for developers to respond to

technical complaints (OR = 7.361, $p = .001$) more than to positive praise. Complaints about financial cards (OR = 3.599, $p = .041$), remittances (OR = 3.239, $p = .017$), and account authentication (OR = 2.734, $p = .019$) also significantly raised the probability of a reply.

The overall model is statistically significant, but the model's McFadden's R^2 is 0.0405, which means that only a small proportion of the variance in developer response decisions can be explained by the review topic. This indicates that there are other factors in addition to topic (such as review length, star rating, and posting time) that likely contribute to a significant amount, and the model is intended to develop a significant marker or set of markers, rather than high predictive accuracy.

5. Discussion

The findings of this empirical study provide insights into Iraqi mobile financial services software developers' conduct in digital application stores. The binary logistic regression models are consistent with the Expectation Disconfirmation Theory and the Service Recovery Theory, which are shown as the Chi-Square tests. ZainCash has a strong negative reviews and technical complaints (OR = 7.361) inclination from its developer. The pattern is an attempt by the organization to alleviate user dissatisfaction, to protect the app store ratings and to prevent users shifting to competing financial apps. Developers focus on failures and protect customer trust, consistent with the argument presented by Choudhary (2025) and Varma (2025) that negative feedback is more important than positive praise in regard to perceived risk.

Meanwhile, the results suggest a structural trade-off between the number of reviews that are responded to and the level of personalization in the responses. The developer received an overall response rate of 71.53%, but only 4.17% of the responses were fully personalized, interactive responses. Sixty-seven of the 67.36% response to the developer's standard template was a semi-interactive response, with a full, personalized, interactive response representing just 4.17% of the total number of responses. This indicates a template-driven approach that is partially automated, intended to generate as many responses as possible and as fast as possible. However, existing studies about human-computer interaction (HCI) and response automation (Devathanan et al., 2024; Greenheld et al., 2018) warn that relying entirely on a template that directs users to external support channels increases the work users have to do, as they will land in the same place and re-explain their problem. This aligns with Albeshir's (2023) findings about the potential for lessening the perceived value of the support offered in semi-interactive responses.

The findings also indicate that positive relationships are not managed well. Notably, 32.92% of the positive praise reviews were not responded to ($n = 106$). Positive feedback may not cause an immediate operational threat, however, research on marketing and user interaction (Hassan et al., 2018; Licorish et al., 2018) indicates that recognizing satisfied users will reinforce the digital brand loyalty. Simple acknowledgments communicate transparency and appreciation towards customers to prospective visitors to the app store. Lastly, the increasingly high odds ratios in the order of the

presenting problem, starting with technical complaints (7.361), then card services (3.599), then remittances (3.239), and then account login problems (2.734).

This indicates that financial sensitivity is related to setting the response priority as a subliminal factor. This is in line with the results of Grljević et al. (2025) and Çallı (2023) which found that functional stability and financial security are important factors in user's experience rating. It also validates the predictive models developed by Srisopha et al. (2020a, 2021), and Jafari et al. (2025), whereby the nature of the text and the nature of the problem shape the choices of developer's response on digital platforms.

6. Conclusions and Recommendations

6.1 Conclusions:

This study reveals that the developer's reaction behavior in non-banking digital wallet contexts is not random. Instead, it adopts a clear operational approach that adapts to the nature of the content of the review and the sensitivity of the problem raised. This justifies the framework proposed by Hassan et al. (2018) and Srisopha et al. (2020a) which holds developer response management as an important tool to keep the customers' relationship.

In addition, there is an implicit order of how digital support will be treated. Technical issues and financial operational risks – from transfers to card problems to authentication – come in as the first priority to reduce churn and prevent loss of trust. This aligns with the findings of Anwar et al. (2024) regarding vulnerabilities of digital payments, and Walther et al. (2025) and Choudhary (2025) on the urgency of financial risks mitigation. However, the amount of responses does not match the quality of the responses. A large proportion of standard templates and directing users to external channels decreases the level of content in responses, forcing users to repeat communication steps. This is similar to the "semi-interactive automation" limits that were observed by Albeshar (2023), Devathanan et al. (2024), and Greenheld et al. (2018).

Developers, in addition, typically focus on service recovery when they are in crisis mode, rather than on relationship building. This is a great opportunity to cultivate user loyalty and enhance brand equity that is being squandered when a significant percentage of positive reviews go without a response from the business (Licorish et al., 2018; Varma, 2025). Finally, while the review topic is an important determinant of whether a developer will respond to the review, it interacts with other contextual variables, including the length of the review, the star rating, and the posting time, indicating that interactions in app stores are multi-dimensioned (Jafari et al., 2025; Srisopha et al., 2021).

6.2 Recommendations:

6.2.1 Managerial and practical implications:

Given the paucity of current studies that have examined digital empathy, these are all promising directions to follow. These are all promising ways to explore digital empathy more:

1. Adaptive Personalization: Reduce rigid generic templates and include the user's name and the details of their problem in these smart templates.
2. Embed In-App Resolution Strategies: Embed specific steps for how to resolve issues directly into store responses (e.g. clear the cache, activate a service etc.) instead of sending users off to external resources, reducing the effort they need to put in.
3. Establish Formal Operational Triage Policies: Have formal operational procedures and policies in place to prioritize incoming feedback based on financial risk and operational urgency, ensuring response times and support quality stay consistent.
4. Automate Positive Feedback Engagement: Create automated rules that send personalized thank you messages for highly rated positive reviews that can help reinforce user retention and brand equity.

6.2.2 future research:

Here are some suggestions for future research.

1. Add More Contextual Predictors: Augment logistic regression models with additional context like the length of the review text, star ratings, time of reviews and automated sentiment scores.
2. Do Cross-Sectoral Comparative Studies: Use the same research design to other FinTech sectors (e.g. neo-banks and crypto wallets), or do cross-regional comparative studies, to monitor change over time in the management of digital trust.

6.3 Limitation:

Moreover, the logistic regression model did not include review-level covariates, including star rating, that previous studies suggest to be relevant predictors of developer response (Srisopha et al., 2021). Models should be developed in the future to account for these as covariates to adjust for the independent contribution of review topic.

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