

Perceived Level of Fraud Risks in Using GCash: Influence of Profile Variables and Group Differences

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ABSTRACT

The rapid growth of mobile wallets in the Philippines has transformed how Filipinos manage financial transactions, especially in areas with limited access to traditional banking services, with GCash widely used in Solano, Nueva Vizcaya becoming an essential tool for daily payments among students, employees, and small business owners; however, increasing cases of fraud, phishing, and unauthorized access have raised concerns about user safety, prompting this study to examine the perceived fraud risk among active GCash users in Solano, focusing on demographic and usage differences and the factors influencing these perceptions using a quantitative, non-experimental design anchored on the UTAUT and Fraud Triangle Theory, with data gathered from 400 users and analyzed through descriptive and inferential statistics including regression analysis; findings revealed that users generally perceive a high level of fraud risk, particularly in bill payments and merchant transactions, with minimal differences across most groups except age in load transactions, while age and duration of use emerged as key predictors of perceived risk as expressed in the model $\hat{Y} = 2.868 + 0.070(\text{Sex}) - 0.017(\text{Age}) + 0.101(\text{Duration of Use}) + 0.068(\text{Frequency of Use})$, which explained 4.9% of the variance, highlighting the need for targeted fraud awareness campaigns, stronger security measures, and improved digital financial literacy to promote safer mobile wallet use.

Keywords: Mobile payment security, digital financial literacy, cybersecurity awareness, transaction vulnerability, fintech adoption

INTRODUCTION

The rapid growth of financial technology has transformed the way Filipinos manage their finances, with mobile wallets becoming an integral part of daily life. Among these platforms, GCash is one of the most widely used, offering services such as bill payments, fund transfers, load purchases, online shopping, and access to savings or investment products (Bangko Sentral ng Pilipinas [BSP], 2024). Its convenience has made it popular among students, employees, small business owners, and others who may not have easy access to traditional banks. In regions like Northern Luzon, particularly the Cagayan Valley, GCash plays a more important role because many towns have limited banking facilities, enabling residents—such as farmers, workers, and students—to participate more actively in financial activities that were previously difficult to access.

While GCash use continues to grow, fraud incidents, scams, phishing attempts, and unauthorized account access have also increased. Reports from the Cybercrime Investigation and Coordinating Center (CICC) indicate that the Philippines received 3,317 fraud-related complaints in 2023, with GCash as the major contributor; the platform subsequently deactivated over 4 million suspicious accounts in response (Fintech News Philippines, 2023). CICC data for 2024 revealed 10,004 cybercrime complaints—over three times higher—with total losses of ₱198 million, of which ₱76.49 million were specifically linked to GCash fraud (Philippine News Agency, 2025; Newsbytes.ph, 2025). A study by TransUnion Philippines (2025) reported that 13.4% of all digital transactions involving Filipino consumers were suspected fraudulent, that 74% of Filipinos surveyed had been targeted by fraud attempts within a three-month period, and that 34% admitted losing money, with average losses estimated at approximately ₱44,700 per victim.

Although many studies have explored mobile wallet adoption in Southeast Asia and the Philippines, few have examined users' perceptions of fraud risks in specific GCash services such as sending money, paying bills, loading, transferring funds, and merchant payments (Alii, 2024; Lai et al., 2022). Most research focuses on behavioral intention, trust, convenience, and ease of use, but not on how perceived security and fraud risks vary by transaction type or user characteristics (Belmonte et al., 2024; Cacas et al., 2022). Demographic factors such as sex, age, and experience with GCash may influence how individuals perceive fraud risks. Previous studies suggest that women may feel more vulnerable due to lower access to technology and differences in digital literacy, while younger and older users may have different levels of understanding of online security (Wechsler & Siwakoti, 2022).

Understanding these perceptions is important for supporting broader financial inclusion initiatives. The Bangko Sentral ng Pilipinas (BSP), through its Digital Payments Transformation Roadmap, aims to increase the use of digital payments and include more Filipinos in the formal financial system. GCash plays a central role in achieving these goals, but user hesitation due to security concerns can limit its effectiveness (BSP, 2024). Additionally, this research contributes to several United Nations Sustainable Development Goals: SDG 4 (Quality Education), SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation, and Infrastructure), SDG 10 (Reduced Inequalities), and SDG 16 (Peace, Justice, and Strong Institutions).

This study therefore aimed to examine perceived fraud risk in GCash transactions, explore differences across demographic profiles, and identify the factors that influence these perceptions. The theoretical framework combined the Unified Theory of Acceptance and Use of Technology (UTAUT) developed by Venkatesh et al. (2003) and the Fraud Triangle Theory proposed by Cressey (1953). UTAUT provided the basis for selecting demographic and experiential profile variables—sex, age, duration of use, and frequency of use—as theoretically grounded moderators of fraud risk perception. The Fraud Triangle Theory served as an interpretive lens to explain how users perceive pressure, opportunity, and rationalization conditions across GCash transaction types.

METHODOLOGY

This study used a quantitative research approach, particularly descriptive-comparative and predictive/exploratory designs. The descriptive component described respondents' profiles and their perceived levels of fraud risk across different GCash services. The comparative component determined whether significant differences existed in perceived fraud risks when respondents were grouped

according to profile variables. The predictive component identified which profile variables significantly influenced respondents' perceived fraud risks.

Theoretical framework

Unified Theory of Acceptance and Use of Technology (UTAUT)

UTAUT, introduced by Venkatesh et al. (2003), explains individuals' acceptance and use of technology through four core determinants: performance expectancy, effort expectancy, social influence, and facilitating conditions. Venkatesh et al. (2003) also identified moderating variables—age, gender, experience, and voluntariness of use—that influence the strength of these relationships. In this study, UTAUT is relevant because it provides a systematic basis for selecting the demographic and experiential variables (sex, age, and GCash usage experience) that are expected to shape how users evaluate and interact with GCash as a digital financial platform.

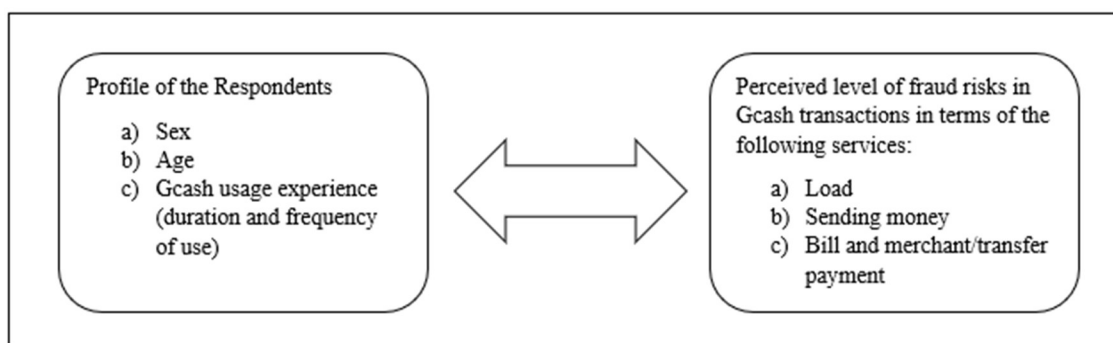
In this study, UTAUT was applied analytically. Specifically, three of its four moderating variables—age, sex (gender), and GCash usage experience (measured through duration and frequency of use)—were adapted as the demographic and experiential profile variables examined in relation to users' perceived level of fraud risk across GCash transactions. These variables served as theoretically grounded factors that may significantly differentiate or predict users' perceived fraud risk. By grounding the selection of profile variables within UTAUT's moderating framework, the study positions users' background characteristics as meaningful analytical lenses through which differences and predictors of perceived fraud risk can be systematically examined.

Fraud Triangle Theory

The Fraud Triangle Theory, developed by Cressey (1953), explains the conditions under which individuals are more likely to engage in fraudulent behavior. It posits three essential elements: pressure (such as financial strain or urgent obligations), opportunity (the perceived chance to commit fraud with low likelihood of detection), and rationalization (the internal justification that makes fraudulent or risky actions seem acceptable). Applied to this study, the Fraud Triangle is used not to accuse users of fraud, but to understand how they interpret fraud-prone situations when using GCash.

In this study, the Fraud Triangle was applied interpretively rather than analytically. It served as an interpretive lens for understanding and making sense of the patterns observed in users' perceived fraud risks across different GCash transactions. For example, the elevated perceived fraud risk in bill payment and merchant transactions—the highest-rated transaction type in this study—can be interpreted through the opportunity element of the Fraud Triangle: interactions with varied merchants and external payment channels create conditions that users perceive as offering greater opportunities for fraudulent activity.

Research Paradigm of the Study



In this paradigm, the respondent profile functions as the independent variable, while the perceived level of fraud risk in GCash transactions serves as the dependent variable. The respondents' profiles included key demographic and usage variables—sex, age, and GCash usage experience measured in terms of both duration and frequency of use. These factors were expected to influence how users perceive fraud risks across various GCash services.

Research Setting and Respondents

The study was conducted in Solano, Nueva Vizcaya, a major commercial and educational center in the province where residents, employees, students, and small business owners widely use digital financial transactions. The respondents were 400 registered active GCash users of Solano, Nueva Vizcaya, calculated using Cochran's formula from the municipality's population of 69,296 (Thomas Brinkhoff: City Population, 2025). A purposive sampling method was used to ensure that respondents were active and registered GCash users with adequate experience using the platform's services.

Data Gathering Tools

The main instrument was a structured researcher-made questionnaire composed of three parts: (1) an informed consent form; (2) respondent profile questions covering sex, age, and GCash usage experience; and (3) a Four-Point Likert Scale measuring perceived fraud risks across 21 items organized into three categories—Load Transactions, Sending Money, and Bill Payment and Merchant Payment. A four-point scale was deliberately chosen over a five-point scale to eliminate the neutral option and reduce central tendency bias. Academic specialists and field experts validated the questionnaire, followed by pilot testing with 72 GCash users from Bayombong, Nueva Vizcaya.

Reliability analysis using Cronbach's alpha confirmed high internal consistency: Load transactions ($\alpha = 0.892$), Sending Money ($\alpha = 0.896$), and Bill Payment and Merchant/Transfer Payment ($\alpha = 0.913$). All values exceeded the widely accepted threshold of 0.70 (Nunnally, 1978).

Statistical Treatment

Data analysis involved: (1) frequency counts and percentages for respondent profiles; (2) means and standard deviations to describe perceived fraud risk levels; (3) independent samples t-test to determine differences by sex; (4) one-way ANOVA with Tukey post-hoc test for differences by age group, duration, and frequency of use; and (5) multiple linear regression to identify profile variables that

significantly predict perceived fraud risk. All analyses were conducted using Jamovi statistical software. The significance level was set at $\alpha = 0.05$.

RESULTS AND DISCUSSION

Demographic and Usage Profile of Respondents

Table 1 presents the demographic and usage profile of the 400 respondents. The majority were female (53.30%), while males comprised 46.80%. More than half (58.00%) were in the 21–25 age group, while those aged 31–35 made up the smallest proportion at 5.80%. Regarding GCash usage experience, most respondents had been using the platform for one to three years (43.30%), while only 6.00% had less than six months of use. In terms of frequency, the largest segment transacted monthly (41.00%), followed by those who transact rarely (37.30%), while daily users represented only 6.30%.

Table 1

Demographic and Usage Profile of the Respondents (n = 400)

Profile Variable	Category	Frequency	Percentage (%)
Sex	Female	213	53.30
	Male	187	46.80
Age Group	20 and below	--	--
	21–25	232	58.00
	26–30	--	--
	31–35	23	5.80
	Above 35	--	--
Duration of Use	Less than 6 months	24	6.00
	6 months–1 year	--	--
	1–3 years	173	43.30
	More than 3 years	--	--
Frequency of Use	Daily	25	6.30
	Weekly	--	--
	Monthly	164	41.00
	Rarely	149	37.30

Note. Percentage figures for primary categories are reported; sub-categories with unreported values are indicated with dashes.

These findings reveal that GCash users in Solano, Nueva Vizcaya are predominantly young adult females with moderate usage experience and occasional transactional engagement, suggesting that habitual, routine use of the platform has not yet been fully established among this population.

Perceived Level of Fraud Risks for GCash

Respondents perceived all three GCash transaction types as carrying a high level of fraud risk (Table 2). Bill payment and merchant/transfer payment recorded the highest mean score ($M = 3.14$, $SD = 0.687$), indicating that respondents felt most vulnerable when paying bills or transacting with merchants—likely due to concerns about fraudulent links and fake merchant accounts. Sending money followed with a mean of 3.00 ($SD = 0.696$), reflecting caution about transferring funds to wrong recipients or falling victim to scam-induced transfers. Load or cash-in transactions recorded the lowest mean ($M = 2.89$, $SD = 0.661$) yet still fell within the high fraud risk category.

Table 2

Perceived Level of Fraud Risks for GCash (n = 400)

Transaction Type	Mean	SD	Description
Load / Cash-In	2.89	0.661	High
Sending Money	3.00	0.696	High
Bill Payment & Merchant/Transfer	3.14	0.687	High

Note. Scale: 1.00–1.75 = Low; 1.76–2.50 = Moderate; 2.51–3.25 = High; 3.26–4.00 = Very High.

These findings indicate that GCash users in Solano, Nueva Vizcaya consistently associate all types of digital transactions with a notable level of fraud vulnerability. The elevated perceived risk in bill payment and merchant transactions can be interpreted through the Fraud Triangle's opportunity element: interactions with varied merchants and external payment channels create conditions perceived as offering greater opportunities for fraudulent activity (Cressey, 1953). This aligns with Bland et al. (2024), who found that performance and psychological risks most significantly dampen users' attitudes toward mobile payment acceptance.

Group Differences in Perceived Fraud Risk

Table 3 presents the results of t-tests and ANOVA analyses examining group differences in perceived fraud risk.

Table 3

Group Differences in Perceived Level of Fraud Risk by Profile Variables

Profile Variable	Transaction	Test Statistic	p-value	Decision
Sex	Load	$t = -1.852$	0.065	Accept H0
	Sending Money	$t = -1.517$	0.130	Accept H0
	Bill Payment	$t = -0.672$	0.502	Accept H0
Age Group	Load	$F = 6.023$	<.001	Reject H0
	Sending Money	$F = 1.471$	0.210	Accept H0
	Bill Payment	$F = 1.937$	0.104	Accept H0
	Overall	$F = 1.23$	0.197	Accept H0
Duration of Use	Load	$F = 0.180$	0.910	Accept H0
	Sending Money	$F = 0.990$	0.397	Accept H0
	Bill Payment	$F = 2.117$	0.097	Accept H0
	Overall	$F = 0.88$	0.453	Accept H0
Frequency of Use	Load	$F = 1.677$	0.171	Accept H0
	Sending Money	$F = 1.365$	0.253	Accept H0
	Bill Payment	$F = 1.128$	0.337	Accept H0
	Overall	$F = 1.38$	0.248	Accept H0

Note. Significance level set at $\alpha = 0.05$.

When grouped by sex, no statistically significant differences were found across any GCash transaction type, indicating that male and female respondents perceive similarly high levels of fraud risk. This is consistent with Ramtiyal et al. (2024), who found gender to be insignificant when perceived risk was the focal variable, and with Lohana and Roy (2023), who reported no independent gender effect on digital payment behavior.

When grouped by age, a statistically significant difference was found specifically for load or cash-in transactions ($F = 6.023$, $p < .001$). Post hoc Tukey analysis revealed that respondents above 35 years old perceived significantly higher fraud risk for load transactions compared to those aged 20 and below (mean difference = 0.618, $p < .001$), those aged 21–25 (mean difference = 0.511, $p < .001$), and those aged 26–30 (mean difference = 0.575, $p = 0.001$). No significant differences were found among younger age groups. Age did not produce significant differences for sending money or bill payment transactions, and the overall null hypothesis was accepted. These findings are consistent with Yang et al. (2023), who found that older adults perceive significantly higher financial and performance risks in mobile payment systems due to lower technical knowledge.

No significant differences were found by duration of use or frequency of use across any transaction type or overall, leading to acceptance of the null hypothesis in both cases. This finding aligns with Umer and Kesavapattapa (2024), who reported no significant experience-related variations in digital wallet adoption patterns within certain populations.

Profile Variables as Predictors of Perceived Fraud Risk

Table 4 presents the results of multiple linear regression analyses predicting perceived fraud risk across GCash transaction types.

Table 4

Regression Results: Profile Variables as Predictors of Perceived Fraud Risk

Transaction Type	Predictor	β	p-value	Decision
Load / Cash-In ($R^2 = 0.067$, $p < .001$)	Age	-0.025	<.001	Reject H0
	Frequency of Use	0.070	0.032	Reject H0
	Sex	0.097	0.129	Accept H0
	Duration of Use	0.067	0.054	Accept H0
Sending Money ($R^2 = 0.03$, $p = 0.019$)	Duration of Use	0.100	0.008	Reject H0
	Sex	0.088	0.202	Accept H0
	Age	-0.011	0.057	Accept H0
	Frequency of Use	0.067	0.055	Accept H0
Bill Payment	Duration of Use	0.136	<.001	Reject H0

Transaction Type	Predictor	β	p-value	Decision
(R ² = 0.044, p = 0.001)	Age	-0.016	0.007	Reject H0
	Sex	0.024	0.720	Accept H0
	Frequency of Use	0.066	0.053	Accept H0
(R ² = 0.049, p < .001)	Age	-0.017	<.001	Reject H0
	Duration of Use	0.101	0.002	Reject H0
	Frequency of Use	0.068	0.027	Reject H0
	Sex	0.070	0.248	Accept H0

Note. Overall regression equation: $\hat{Y} = 2.868 + 0.070(\text{Sex}) - 0.017(\text{Age}) + 0.101(\text{Duration of Use}) + 0.068(\text{Frequency of Use})$.
Significance level $\alpha = 0.05$.

For load or cash-in transactions, age ($\beta = -0.025$, $p < .001$) and frequency of use ($\beta = 0.070$, $p = 0.032$) significantly predicted perceived fraud risk. The negative relationship between age and perceived fraud risk confirms that older users report higher perceived vulnerability—consistent with UTAUT's premise that age moderates' technology risk evaluation (Venkatesh et al., 2003) and with findings by Ramtiyal et al. (2024) that perceived risk-behavioral intention links are stronger among older users. Counterintuitively, higher frequency of use was associated with higher perceived risk, suggesting that more frequent users accumulate greater awareness of fraud instances, resulting in heightened rather than diminished vigilance. This aligns with Wechsler and Siwakoti (2022), who argued that mobile wallet users remain sensitive to transactional risks even with repeated use when the fraud environment is dynamic.

For sending money transactions, duration of use was the only significant predictor ($\beta = 0.100$, $p = 0.008$), indicating that longer-term GCash users perceive higher fraud risk when sending money. This contrasts with UTAUT's general proposition that greater experience reduces perceived concerns. Cacas, Diongson, and Olita (2022) provided a credible explanation: longer-term users become more sensitized to fraud risk through extended exposure to fraud reports and platform incidents—experiential sensitization rather than experiential reassurance.

For bill payment transactions, both age ($\beta = -0.016$, $p = 0.007$) and duration of use ($\beta = 0.136$, $p < .001$) were significant predictors. Older users and longer-term users both reported higher perceived fraud risk in this transaction type. The positive effect of duration of use again departs from UTAUT's expectation and aligns with the experiential sensitization argument. Across all transaction types combined, the overall model was statistically significant ($F = 5.079$, $p < .001$, $R^2 = 0.049$). Age, duration of use, and frequency of use were all significant predictors, while sex was not. The relatively low R^2 of 4.9% is expected and theoretically consistent for perception-based research in the social sciences, where values between 0.04 and 0.15 are commonly observed (Hair et al., 2022). Medina et al. (2025) affirmed that perceived risk is multidimensional and shaped by factors beyond demographic and usage profiles—including trust, social influence, and platform-specific security features—which future research could examine.

RECOMMENDATIONS

Based on the findings, the following recommendations are proposed:

GCash users, particularly young adults aged 21–25 and female users who comprise the majority of the platform's user base, are strongly encouraged to actively educate themselves on common fraud schemes. Users should regularly update their account credentials, enable multi-factor authentication, and avoid sharing personal information through unverified channels. Targeted educational campaigns and interactive features should be developed specifically for younger users to cultivate safer usage habits, while continued support for older users is essential to reinforce their cautious practices.

GCash administrators are urged to strengthen fraud detection mechanisms, simplify dispute resolution processes, and launch in-app educational features on scam prevention—particularly for bill payment and merchant transactions, which were perceived as the most vulnerable. Additional safeguards for money-sending transactions are also recommended. Investment in infrastructure upgrades addressing connectivity and accessibility gaps is equally important.

Community leaders, local government units, and educational institutions are encouraged to design and implement universal fraud awareness and financial literacy programs targeting all GCash users, regardless of sex, experience level, or usage frequency. Aldersgate College and similar institutions should integrate digital financial literacy into their curricula. Age-sensitive guidance for load transactions is specifically recommended to help older users feel more confident while raising appropriate awareness among younger users who may underestimate their risk exposure.

Future researchers are encouraged to build upon this study by exploring fraud risk perceptions across broader demographic scopes and geographic areas, including comparative studies between rural and urban users. Future studies should consider including respondents who have already experienced actual fraud incidents, as their firsthand exposure may yield deeper insights. Researchers are also encouraged to operationalize the elements of the Fraud Triangle—pressure, opportunity, and rationalization—as measurable predictor variables in regression analyses, rather than applying them solely as an interpretive lens.

CONCLUSIONS

This study examined perceived fraud risk among 400 active GCash users in Solano, Nueva Vizcaya, anchored on UTAUT and Fraud Triangle Theory. Findings consistently showed high perceived fraud risk across all GCash transaction types, with bill payment and merchant transactions rated as most vulnerable. While no significant group differences were found by sex, duration, or frequency of use, age produced a significant difference in perceptions of load transactions, with older users reporting higher fraud vulnerability. Multiple regression analysis identified age, duration of use, and frequency of use as significant overall predictors of perceived fraud risk, with the overall regression equation expressed as: $\hat{Y} = 2.868 + 0.070(\text{Sex}) - 0.017(\text{Age}) + 0.101(\text{Duration of Use}) + 0.068(\text{Frequency of Use})$, explaining 4.9% of the variance.

These results underscore that behavioral and experiential factors are stronger and more consistent predictors of perceived fraud risk than demographic characteristics such as sex. The findings support the need for age-sensitive fraud awareness campaigns, strengthened GCash platform security features, and sustained digital financial literacy programs. Perceived fraud risk is a complex, multidimensional construct shaped by factors extending beyond demographics—including trust, social influence, and media exposure—

presenting rich opportunities for future research. Importantly, the findings are limited to active GCash users in Solano, Nueva Vizcaya, and caution should be exercised when generalizing to other populations.

AI DECLARATION STATEMENT

AI-supported tools helped with grammar and structure in creating this article. No AI tools were used to collect, analyze, or interpret data; all authors are credited for their academic contributions.

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