

Level Of Acceptance and Customer Satisfaction on Virtual Pag-Ibig Among Overseas Filipino Workers (OFWs)

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Abstract

This study examined the level of technology acceptance and customer satisfaction with Virtual Pag-IBIG among Overseas Filipino Workers (OFWs), focusing on perceived usefulness, perceived ease of use, intention to use, trust, and satisfaction. Anchored in the Technology Acceptance Model (TAM), the study employed a descriptive-evaluative research design and survey method. Data were collected from 490 OFWs associated with selected Manning Agencies and Pag-IBIG Fund OFW Centers using a researcher-made questionnaire that underwent Cronbach Testing for reliability. Data were analyzed using frequency counts, percentages, mean, ranking, and Chi-square distribution. Respondents rated Virtual Pag-IBIG as acceptable in perceived usefulness, perceived ease of use, and intention to use, and were satisfied with trust in the e-government website, overall user satisfaction, and technology acceptance. Acceptance differed significantly according to educational attainment, occupation, and source of information about Virtual Pag-IBIG, while customer satisfaction also differed across selected respondent characteristics. Technology-acceptance variables were significantly and positively related to customer satisfaction, with intention to use showing the strongest relationships with trust (0.838), user satisfaction (0.791), and technology-related satisfaction (0.777), all at $p=0.000$. The study concludes that OFWs generally demonstrate favorable acceptance and satisfaction with Virtual Pag-IBIG and recommends strengthening customer support, security and privacy communication, OFW feedback, usability testing, clear instructions, infrastructure, awareness, and user training. The study aligns with SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation and Infrastructure), SDG 10 (Reduced Inequalities), SDG 16 (Peace, Justice, and Strong Institutions), and SDG 17 (Partnerships for the Goals), particularly through digital access, inclusion, institutional efficiency, and public-service delivery. Its sustainability impact encompasses socio-economic, technological, community, and institutional sustainability by supporting accessible, trustworthy, responsive, and sustainable digital government services for geographically dispersed OFWs.

Keywords: Customer Satisfaction, E-Government, Intention to Use, Overseas Filipino Workers, Perceived Ease of Use, Perceived Usefulness, Technology Acceptance, Technology Acceptance Model, Virtual Pag-IBIG

1. Introduction

Digital technologies have transformed how citizens communicate, transact, and access public services. In the Philippines, widespread internet and mobile connectivity, combined with the disruptions created by the COVID-19 pandemic, accelerated the transition toward digital transactions and e-government services. Globally, the pandemic likewise accelerated reliance on digital public services and highlighted the importance of resilient, accessible digital government (OECD, 2023; United Nations Department of Economic and Social Affairs, 2024).

Within this environment, government institutions have increasingly adopted digital platforms to improve accessibility, efficiency, responsiveness, and continuity of public services. Pag-IBIG Fund introduced Virtual Pag-IBIG in December 2019 as an online platform through which members can access services, monitor contributions and savings, check loan applications, and communicate with the Fund without visiting a physical branch (Philippine Information Agency, 2024). This development is particularly relevant to Overseas Filipino Workers (OFWs), whose geographic location makes convenient and reliable remote access to government services important. Accordingly, this study examines the level of technology acceptance and customer satisfaction with Virtual Pag-IBIG among OFWs, focusing on perceived usefulness, perceived ease of use, intention to use, trust, service quality, information quality, system quality, and customer satisfaction.

Digitalization has become integral to contemporary economic, social, and governmental activities. During the COVID-19 pandemic, digital technologies supported the continuity of services and transactions despite mobility restrictions, reinforcing the importance of accessible and resilient digital platforms (OECD, 2023; United Nations DESA, 2024). The Philippine government's digital transformation similarly gained urgency during the pandemic. National initiatives have promoted the digitization and modernization of government processes to improve efficiency and streamline public service delivery. Pag-IBIG Fund had already begun this transition before the pandemic through the introduction of Virtual Pag-IBIG in December 2019. The platform functions as a virtual branch that allows members to access Pag-IBIG services remotely, monitor transactions, payments, savings, dividends, and loan applications, and obtain assistance through online channels (Philippine Information Agency, 2024). For OFWs, these capabilities provide an alternative to physically visiting Pag-IBIG offices in the Philippines. Understanding whether OFWs accept and are satisfied with Virtual Pag-IBIG is therefore relevant to the continued development of digital government services. Acceptance is particularly associated with users' perceptions of usefulness and ease of use. The Technology Acceptance Model (TAM) identifies these factors as important determinants of attitudes and behaviors toward technology (Al-Rahmi et al., 2022; Aleisa, 2024). Perceived usefulness concerns whether technology improves performance, while perceived ease of use concerns whether the technology can be understood and operated without substantial difficulty (Davis, 1989). Research applying TAM further indicates that ease of use and usefulness can influence consumers' intentions toward online transactions (Nguyen, 2023; Nguyen et al., 2024). Extended applications of the model have incorporated perceived trust, security, privacy, information quality, behavioral intention, and actual system use (Al-Rahmi et al., 2022), while demographic characteristics such as age and gender have also been considered as moderating factors (Zeebaree et al., 2022). These findings establish the relevance of examining both technology-related perceptions and user characteristics in understanding Virtual Pag-IBIG adoption among OFWs.

E-government broadly involves using information and communication technologies to improve government operations and electronically exchange information and services with citizens, businesses, and other government institutions (United Nations DESA, 2024). Its value extends beyond digitizing existing transactions because effective e-government can improve efficiency, service quality, accountability, transparency, inclusion, and relationships between governments and citizens (United Nations DESA, 2024). ICT-enabled services have expanded into areas such as education, health, and municipal services, demonstrating the potential of technology to improve both service delivery and user experience (OECD, 2023; United Nations DESA, 2024). However, meaningful digital government requires services to remain accessible regardless of socioeconomic circumstances or geographic location. Its effectiveness therefore depends on efficiency, accountability, transparency, inclusion, citizen participation, and value creation (OECD, 2024; United Nations DESA, 2024). Future e-government systems are consequently expected to support collaborative problem-solving between governments, citizens, and other stakeholders (Kawabata & Camargo, 2023). Citizen participation is also important to successful e-government implementation. Continuous communication through digital and conventional channels can increase awareness and encourage engagement with government services (Kawabata & Camargo, 2023; Aleisa, 2024). At the same time, investments in digital government become more socially effective when citizens have equitable access to technology, emphasizing the need to address the digital divide (Mesa, 2023; G. C. et al., 2024). Digital government can reduce paper-based processes, operating costs, and human-resource requirements, but it must also maintain accurate and transparent information flows to strengthen public trust (United Nations DESA, 2024). Customer satisfaction with e-government is influenced by interconnected dimensions of service performance. Efficiency, trust, reliability, convenience, citizen support, and transparency contribute to satisfaction, with efficiency identified as particularly influential (Pham et al., 2023; G. C. et al., 2024). Despite the accessibility offered by e-government, low utilization can persist when government efforts to digitize services are not matched by citizen adoption (Pham et al., 2023; Aljukhadar et al., 2022). User satisfaction is also associated with security, trustworthiness, ease of use, website quality, responsiveness, benefits, and barriers (Aljukhadar et al., 2022; Pham et al., 2023). Trust is particularly important because citizens' confidence in an electronic system can affect their willingness to adopt government services (Balaskas et al., 2022; Aleisa, 2024). Presentation, content, and service characteristics can likewise affect user satisfaction (Aljukhadar et al., 2022; Pham et al., 2023), while effective service design requires consideration of both service perceptions and service complexity (Aljukhadar et al., 2022; Pham et al., 2023). Service quality and information quality have consequently been identified as significant influences on e-government satisfaction (Aljukhadar et al., 2022; G. C. et al., 2024). International experiences

reinforce these relationships. E-government can contribute to transparency and communication between citizens and government (Alsarraf et al., 2023), while accessibility and institutional accountability remain necessary to sustain public satisfaction (Alsarraf et al., 2023; United Nations DESA, 2024). Information quality, credibility, appropriateness, and simplicity of use can also shape users' perceptions of the value of electronic government services (Aljukhadar et al., 2022; Aleisa, 2024). Technology acceptance represents another central theme. TAM explains technology adoption through factors affecting users' willingness to accept and use new technologies (Davis, 1989). Website design, online content, usability, functionality, security, performance expectations, facilitating conditions, and trust can influence behavioral intention toward e-services (Aleisa, 2024; Nguyen et al., 2024). Perceived risks can discourage adoption, whereas confidence in government and the internet can strengthen favorable perceptions of electronic services (Balaskas et al., 2022; Aleisa, 2024). Perceived usefulness is especially relevant to usage intention. When users recognize immediate and long-term benefits, favorable attitudes and intentions toward digital financial services may develop. Ease of use is equally important because complex procedures, security requirements, and validation processes may discourage users even when such controls are necessary (Nguyen, 2023; Aleisa, 2024). E-government services can nevertheless save time and resources and facilitate more efficient task completion when systems adequately address citizens' requirements (OECD, 2024; United Nations DESA, 2024). Technology acceptance can additionally be influenced by compatibility, social influences, self-efficacy, facilitating conditions, attitudes, subjective norms, perceived behavioral control, risk, intention to use, and individual innovativeness (Zeebaree et al., 2022; Saleh et al., 2023). Perceived ease of use specifically concerns the degree to which technology can be used without substantial effort. Systems perceived as familiar, accessible, and uncomplicated are more likely to encourage continued interaction (Davis, F.D., 1989). Ease of use also reduces the time, effort, and energy required to understand and operate an information system (Nguyen, 2023; Nguyen et al., 2024). Indicators associated with perceived ease of use have likewise been examined in previous technology-adoption research (Nguyen, 2023; Nguyen et al., 2024). Research on e-government further emphasizes the interaction among service quality, trust, satisfaction, and continued adoption. The quality of electronic services can influence perceived usefulness, perceived ease of use, and intention to use. In online banking, these relationships extend to attitudes, behavioral intention, and actual use (Al-Rahmi et al., 2022; Pham et al., 2023). Perceived usefulness and perceived usability can similarly affect behavioral attitudes toward technology (Nguyen et al., 2024). Service quality is also associated with electronic satisfaction and loyalty, reinforcing its importance in understanding digital financial services (Pham et al., 2023). Compared with broader behavioral models, TAM is particularly applicable to information systems because of its direct emphasis on usefulness and ease of use (Al-Rahmi et al., 2022; Aleisa, 2024). Its application has extended to e-government environments (Mesa, 2023; OECD, 2024), supporting its relevance to the assessment of Virtual Pag-IBIG.

Globally, e-government has become an important mechanism for improving the delivery of public services. Governments increasingly use ICT to reduce transaction costs, improve responsiveness, strengthen transparency, and make public services accessible beyond traditional government offices. The international literature nevertheless shows that technology alone does not guarantee adoption. Digital inclusion, infrastructure, user capabilities, service quality, trust, and perceived risk remain important conditions affecting successful implementation. E-government developed from a means of communication between governments and citizens into a broader system for delivering services to individuals and organizations. Its development reflects demographic, economic, social, and global changes and the need for more efficient public administration (Aleisa, 2024). Similar evidence from electronic banking shows that service quality affects perceived usefulness, perceived ease of use, attitudes, behavioral intention, and actual use (Al-Rahmi et al., 2022; Pham et al., 2023). These international findings are relevant to Virtual Pag-IBIG because the platform similarly involves remote digital access to financial and government-related services. Trust and digital inclusion remain particularly important. Citizens who perceive greater risks may prefer physical transactions, while users who trust government and internet systems may perceive online services as safer and more useful (Balaskas et al., 2022; Aleisa, 2024). Internet connectivity and confidence in government consequently affect perceptions of usefulness, usability, risk, and acceptance. Public communication through family, social networks, and multiple media channels can further shape awareness and acceptance of digital government (Balaskas et al., 2022; Aleisa, 2024). Trust can affect perceived service quality, security, usability, and willingness to recommend digital services to others (Alsarraf et al., 2023; Aleisa, 2024), while inadequate institutional and technological trust may reduce satisfaction and participation (Alsarraf et al., 2023; Fifaliana, 2026). In the Philippines, rapid digitalization has been accompanied by persistent infrastructure and access constraints. High social-media use and increased online transactions during the pandemic demonstrate substantial engagement with digital platforms, although misinformation and privacy concerns remain important issues (Philippine Statistics Authority, 2023; OECD, 2024). Limited connectivity also constrains digital inclusion. Expanded infrastructure, broader access, improved digital environments, and government-led digitization have therefore been identified as important components of inclusive digital transformation (National Economic and Development Authority, 2023; OECD, 2024). Government digital initiatives can contribute to this transition by improving processes and expanding electronic public services (National Economic and Development Authority, 2023). This national context is especially significant for OFWs. Because OFWs work outside the country or at sea, physical access to domestic government offices may be

difficult. Virtual Pag-IBIG addresses this geographic constraint by allowing members to perform transactions remotely using internet-connected devices. The platform enables access to services such as loan applications, savings management, contribution monitoring, and other Pag-IBIG transactions without requiring routine physical visits. Thus, Virtual Pag-IBIG represents a specific Philippine application of the broader movement toward e-government. Its effectiveness for OFWs depends not merely on the availability of the platform but on whether users perceive it as useful, easy to operate, trustworthy, reliable, and satisfactory.

The study is anchored in the Technology Acceptance Model (TAM), which explains how users come to accept and use technology. TAM identifies perceived usefulness and perceived ease of use as major determinants of technology-related attitudes and behavior (Al-Rahmi et al., 2022; Aleisa, 2024). Perceived usefulness refers to the extent to which individuals believe that using a system improves their performance, whereas perceived ease of use concerns the extent to which they believe that using the technology requires minimal effort (Davis, 1989). TAM has been repeatedly applied and extended across information systems. Research has demonstrated relationships among perceived usefulness, perceived ease of use, behavioral intention, and technology use (Davis et al., 1989), including subsequent applications to online purchasing behavior (Nguyen, 2023; Nguyen et al., 2024). Expanded models have incorporated perceived trust, perceived security, perceived privacy, information quality, behavioral intention, and actual system use (Al-Rahmi et al., 2022), as well as demographic moderating factors (Zeebaree et al., 2022). Within e-government, TAM is appropriate because users' willingness to adopt online public services depends substantially on whether those services are perceived as useful and manageable. Perceived usefulness and perceived ease of use can influence behavioral intention and subsequent technology use, while other factors such as trust, quality, security, and user characteristics can strengthen or constrain these relationships. TAM is particularly suited to information-system environments because it directly addresses utility and ease of use (Al-Rahmi et al., 2022; Aleisa, 2024). For Virtual Pag-IBIG, the conceptual framework therefore treats perceived usefulness, perceived ease of use, and intention to use as principal technology-acceptance variables and customer satisfaction as the outcome of interest. Respondent characteristics—including age, civil status, educational attainment, job position, devices used for online transactions, internet connection, frequency of internet use, frequency of government e-service use, source of awareness about Virtual Pag-IBIG, and method of account creation—provide the profile dimensions through which differences may be examined. Customer satisfaction is further considered in relation to trust in the e-government website and the quality of the service, information, and system. This conceptualization is consistent with research indicating that technology acceptance involves perceived utility and ease of use and that these dimensions contribute to attitudes and actual technology utilization (Venkatesh & Davis, 2000). Behavioral intention can mediate the effects of perceived usefulness and perceived ease of use, while external variables can also influence adoption (Nguyen, 2023; Garcia-Rio et al., 2023). Service quality provides an additional perspective for understanding satisfaction. Service quality can be considered through tangibility, reliability, responsiveness, assurance, and empathy (Aljukhadar et al., 2022). Differences between users' expectations and their actual service experiences indicate areas for service improvement (Aljukhadar et al., 2022). Higher perceived service quality can, in turn, strengthen customer satisfaction and encourage the adoption and continued use of electronic government services (Pham et al., 2023; G. C. et al., 2024).

The reviewed literature establishes extensive relationships among perceived usefulness, perceived ease of use, behavioral intention, trust, information quality, system quality, service quality, technology acceptance, and customer satisfaction. However, the existence of an electronic government service does not necessarily ensure that intended users will adopt or remain satisfied with it. Low utilization continues to be reported even when governments have invested in digital public services (Pham et al., 2023; Aljukhadar et al., 2022), demonstrating the need to assess technology from the perspective of actual users. This issue is particularly relevant to OFWs because their physical distance from the Philippines increases their reliance on remote government transactions. Although Virtual Pag-IBIG provides online access to services, the study needs to determine how OFWs evaluate its usefulness, ease of use, and their intention to use it, as well as their satisfaction and trust in the platform. The literature indicates that trust influences technology adoption (Balaskas et al., 2022; Aleisa, 2024), while service and information quality influence user satisfaction (Aljukhadar et al., 2022; G. C. et al., 2024). These relationships require examination within the specific context of Virtual Pag-IBIG and its OFW users. The study also responds to the need to examine whether acceptance and satisfaction differ according to users' profiles and digital circumstances. Internet connectivity, devices, frequency of internet and government e-service use, educational background, occupational characteristics, and exposure to Virtual Pag-IBIG may affect how OFWs experience the platform. Digital inclusion is particularly relevant because unequal connectivity and technological capability can limit the benefits of e-government even when services are technically available. Accordingly, the study assesses the level of acceptance and customer satisfaction with Virtual Pag-IBIG among OFWs and examines the relationship between these constructs. It considers perceived usefulness, perceived ease of use, intention to use, trust in the e-government website, customer satisfaction, and technology acceptance while accounting for respondent profiles. The results can provide evidence for improving Virtual Pag-IBIG and contribute to understanding digital public-service delivery for Filipinos living and working outside the country.

The study naturally aligns with SDG 8 – Decent Work and Economic Growth, SDG 9 – Industry, Innovation and Infrastructure, SDG 10 – Reduced Inequalities, SDG 16 – Peace, Justice, and Strong Institutions, and SDG 17 – Partnerships for the Goals insofar as these objectives relate to the digital access, institutional efficiency, inclusion, and public-service dimensions already addressed in the study. Its strongest connection is with SDG 9 because Virtual Pag-IBIG represents the use of digital innovation and infrastructure to deliver government financial and membership services remotely. Philippine digital transformation requires broader infrastructure and inclusive access, particularly because limited connectivity remains an obstacle to widespread digitization (National Economic and Development Authority, 2023; OECD, 2024). Expanded digital infrastructure and government-led electronic services can help address these limitations (National Economic and Development Authority, 2023). The study also relates to SDG 8 because Virtual Pag-IBIG serves workers, including Filipinos employed overseas, by facilitating access to savings, loans, contributions, and other Pag-IBIG services. Evaluating whether OFWs find these services useful, easy to use, trustworthy, and satisfactory can support improvements in services intended for workers who may otherwise face geographic barriers to accessing government offices. Its relevance to SDG 10 arises from the broader challenge of digital inclusion. Effective e-government requires equitable access regardless of socioeconomic circumstances or location (OECD, 2024; United Nations DESA, 2024), while the digital divide can prevent citizens from receiving the full benefits of public investment in electronic government (Mesa, 2023; G. C. et al., 2024). For OFWs, remote digital access has particular significance because users are geographically separated from many physical government service points. The study further relates to SDG 16 through its emphasis on effective, accessible, responsive, and trustworthy government institutions. E-government can improve efficiency, transparency, accountability, and relationships between citizens and public institutions (United Nations DESA, 2024). Trust, reliable information, and transparent communication are therefore important dimensions of sustainable digital public services (United Nations DESA, 2024). Finally, the findings have potential relevance to SDG 17 because improving services for OFWs may involve coordination among Pag-IBIG Fund, government institutions, financial service providers, organizations supporting OFWs, and other stakeholders. Effective stakeholder participation is an important component of successful e-government implementation (Kawabata & Camargo, 2023; Aleisa, 2024).

The study contributes primarily to socio-economic, technological, community, and institutional sustainability by examining whether an established digital government platform meets the needs of OFWs. From a socio-economic sustainability perspective, accessible digital government services can reduce the time, cost, and effort associated with obtaining services through physical offices. E-government is intended to improve efficiency and facilitate more effective public-service transactions (OECD, 2024; United Nations DESA, 2024). For geographically dispersed OFWs, sustained access to Virtual Pag-IBIG can support continued interaction with Pag-IBIG services regardless of physical location. Technological sustainability depends on more than introducing a digital platform. Systems must remain useful, usable, secure, reliable, and responsive to user needs. Technology acceptance is shaped by perceived usefulness and perceived ease of use (Davis, F.D., 1989), while trust, performance expectations, website characteristics, and facilitating conditions also influence intention to use electronic services (Aleisa, 2024; Nguyen et al., 2024). Evaluating these dimensions can therefore identify aspects of Virtual Pag-IBIG that support or constrain continued adoption. Institutional sustainability is associated with the capacity of government organizations to maintain effective and trusted digital services. Service quality, information quality, transparency, security, and responsiveness influence users' experiences of e-government (Aljukhadar et al., 2022; Pham et al., 2023). Trust is especially important because confidence in government and digital platforms shapes perceived risk and willingness to use electronic services (Balaskas et al., 2022; Aleisa, 2024). Sustained citizen satisfaction likewise depends on the quality, usability, security, reliability, and responsiveness of online government services (Aljukhadar et al., 2022; Pham et al., 2023). The study also contributes to community sustainability by focusing on OFWs as a geographically dispersed population that depends on accessible links to Philippine institutions. Digital services can help reduce the constraints of distance, but their value depends on inclusive access, digital literacy, and user confidence. Trust affects perceptions of service quality, security, usability, and adoption (Alsarraf et al., 2023; Aleisa, 2024), while low trust can reduce satisfaction and engagement with e-government platforms (Alsarraf et al., 2023; Fifaliana, 2026). Finally, sustainable use requires positive and satisfactory user experiences. Perceived usefulness and perceived ease of use influence technology acceptance and use (Venkatesh & Davis, 2000), while behavioral intention connects these perceptions with subsequent adoption (Nguyen, 2023). Service quality is likewise associated with satisfaction and continued use of electronic services (Pham et al., 2023). Examining these relationships in Virtual Pag-IBIG therefore provides a multidisciplinary basis for understanding how digital public services can remain accessible, accepted, trustworthy, and responsive to OFWs over time.

2. Material and methods

2.1 Research Design

The study used a descriptive-evaluative research design to describe the existing conditions and relationships among the variables associated with the level of acceptance and customer satisfaction with Virtual Pag-IBIG

among OFWs. A survey method was employed to obtain information on respondents' characteristics and their assessment of the platform, particularly in relation to technology acceptance and customer satisfaction.

2.2 Locale of the Study

The study was conducted among OFWs associated with selected Manning Agencies in Manila and those transacting with Pag-IBIG Fund OFW Centers in SM Manila, Pasay, and the Department of Migrant Workers, formerly the Philippine Overseas Employment Administration (POEA). The selected Manning Agencies included United Philippine Lines, Magsaysay Maritime Corporation, Solpia Marine, and Laurel Carriers. Data collection also covered locations where the researcher's team conducted Pre-Departure Orientation Seminar (PDOS) briefings for seafarers.

2.3 Respondents of the Study

The respondents were OFWs from selected Manning Agencies and OFWs who transacted over the counter at Pag-IBIG Fund OFW Centers in SM Manila, Pasay, and the Department of Migrant Workers. Respondents were screened to determine whether they were registered users of Virtual Pag-IBIG before completing the questionnaire. Their profiles included age, civil status, highest educational attainment, job position title, gadget regularly used for online transactions such as e-banking and e-payments, type of internet connection, frequency of internet use, frequency of using e-services on government websites, source of information about Virtual Pag-IBIG, and the option used to create their Virtual Pag-IBIG account.

2.4 Sample and Sampling Procedure

The population was based on 72,318 successful OFW registrants as of September 12, 2021. The required sample size was calculated using the "Raosoft" Sample Size Calculator, which generated a recommended sample of 383 respondents. Probability sampling, specifically simple random or systematic sampling, was identified as the sampling technique. Eligible participants were drawn from the selected Manning Agencies and OFWs transacting at the identified Pag-IBIG Fund OFW Centers.

2.5 Research Instrument

Data were collected using a researcher-made questionnaire designed around indicators relevant to the study objectives. The first part gathered respondents' demographic and digital-use profiles, including age, civil status, educational attainment, job position, gadget used for online transactions, internet connection, frequency of internet use, frequency of using government e-services, source of awareness about Virtual Pag-IBIG, and method used to create a Virtual Pag-IBIG account. The second part assessed the level of acceptance of Virtual Pag-IBIG among OFWs through perceived usefulness, perceived ease of use, and intention to use. The third part assessed customer satisfaction in terms of trust in the e-government website, satisfaction, and technology acceptance. The questionnaire underwent Cronbach Testing to establish the reliability of its items before administration.

2.6 Data Gathering Procedure

Prior to data collection, approval from Pag-IBIG Fund Management was sought to access information on the number of seafarers enrolled in Virtual Pag-IBIG and establish the required sample. The validated researcher-made questionnaire, accompanied by a signed request letter, was administered to qualified OFWs. Electronic questionnaires were distributed through Google Forms during online PDOS meetings conducted for seafarers from different Manning Agencies, with the survey link posted in the meeting chat box. Questionnaires were also personally distributed to OFWs transacting at Pag-IBIG Fund offices in SM Manila and the Department of Migrant Workers, formerly POEA. Respondents were first asked whether they were registered with Virtual Pag-IBIG before proceeding with the survey. After collection, the responses were accumulated, counted, and prepared for statistical analysis.

2.7 Data Analysis Techniques

The collected data were analyzed using frequency counts, percentages, mean, ranking, and Chi-square distribution. Frequency counts and percentages were used to summarize the respondents' profiles. Percentage represented the proportion of responses relative to the total number of respondents. Mean and ranking were used to summarize respondents' assessments of the study variables. The mean provided an average representation of responses, with weighted values accounting for the contribution of the response categories to the overall assessment. Chi-square distribution was used to examine differences in respondents' perceptions when grouped according to their profiles. Observed and expected frequencies were compared to determine whether significant relationships or differences existed between the relevant categorical variables.

3. Results and Discussion

3.1 Profile and Digital Characteristics of OFW Respondents

3.1.1 Demographic and Occupational Profile

Among the 490 respondents, the largest age group was 26–35 years old at 43.88%, followed by those aged 36–45 at 33.88%, while only 0.61% were aged 56–65. Single respondents comprised 49.18% and married respondents 48.57%, whereas only 0.41% were legally separated. College graduates represented the largest educational group at 48.98%, followed by high school graduates at 34.49%, while postgraduates accounted for 0.82%. In terms of occupation, the “Others” category, composed mostly of domestic helpers, accounted for the largest share at 42.04%, followed by Able Marine/Ordinary Seamen at 16.33%. The predominance of respondents aged 26–35 is consistent with the 2022 Survey on Overseas Filipinos released by the Philippine Statistics Authority in 2023, in which the 30–34 age group comprised the largest proportion of OFWs. The substantial proportion of college graduates also reflects the participation of educated Filipinos in overseas employment, where differences between expected and domestic salaries may encourage graduates to seek work abroad. Domestic cleaners and helpers likewise constitute an important occupational group among newly hired Filipino workers because of overseas demand and comparatively higher wages and employment benefits.

3.1.2 Digital Access and Internet Use

Mobile phones were the primary devices used by 95.51% of respondents, while tablets were used by only 0.41%. Mobile data was the dominant internet connection at 73.06%, followed by Wi-Fi at 26.12%, while broadband accounted for 0.82%. Most respondents, 82.04%, accessed the internet daily, whereas 1.84% reported using it twice a month. Government e-services were most commonly accessed monthly by 26.73% of respondents, while 19.80% reported never having used government e-services. The predominance of mobile devices and mobile data reflects the importance of mobile connectivity among Filipino users. Digital technologies became particularly important during COVID-19 because they allowed governments, businesses, and educational institutions to maintain services and transactions despite mobility restrictions. The high frequency of internet use among respondents consequently provides an environment conducive to online government services such as Virtual Pag-IBIG.

3.1.3 Awareness and Account Creation for Virtual Pag-IBIG

Most respondents, 57.76%, learned about Virtual Pag-IBIG through PDOS/Pre-Departure Orientation Seminar or Pag-IBIG Briefing, followed by 16.33% through friends, family, and co-workers and 13.27% through the Pag-IBIG Fund Official Website. Television and radio advertisements accounted for only 1.02%. For account creation, 45.92% used “Account Creation for OFWs,” 43.27% visited the nearest Pag-IBIG branch, and 10.82% used Loyalty Card Plus. The prominence of PDOS reflects its role in preparing OFWs for overseas employment and communicating information on government programs and services. Pag-IBIG Fund briefings form part of these orientations, providing OFWs with information on Fund programs, benefits, updates, and Virtual Pag-IBIG. The availability of several account-creation options also provides OFWs with alternatives based on their circumstances and access preferences.

3.2 Level of Acceptance of Virtual Pag-IBIG Among OFWs

3.2.1 Perceived Usefulness

Respondents rated the perceived usefulness of Virtual Pag-IBIG as “Acceptable,” with a grand mean reported as 4.41. The highest-rated item concerned the usefulness of Virtual Pag-IBIG for payment transactions involving monthly savings or loan amortization, with a weighted mean of 4.42. Checking short-term and housing loan balances followed at 4.41, while applying for a housing loan received the lowest rating of 4.34, although it remained “Acceptable.” The findings indicate that respondents particularly valued Virtual Pag-IBIG for routine financial transactions and monitoring. The comparatively lower assessment of online housing-loan applications may reflect differences in users’ experiences with more complex digital transactions. More broadly, facilitating conditions, user support, trust, and prior experience can shape citizens’ willingness to rely on digital channels (Garcia-Rio et al., 2023; Aleisa, 2024).

3.2.2 Perceived Ease of Use

Virtual Pag-IBIG was rated “Acceptable” in perceived ease of use, with a grand mean of 4.35. Its 24/7 navigation without technical difficulty received the highest weighted mean of 4.37. Ease of use during emergency situations received the lowest mean of 4.33, while convenience, understanding procedures, and obtaining short-term loans were also rated “Acceptable.” These findings support the accessibility objectives of e-government. Contemporary digital-government frameworks emphasize accessible, reliable, user-centered digital public services supported by resilient infrastructure, data, and institutional capacity (OECD, 2024; United Nations DESA, 2024). Nevertheless, awareness, security, and trust may influence actual use. Recent Philippine policy and payment evidence continues to emphasize awareness, digital financial literacy, security, reliability, and convenient access as important conditions for digital-service use (Bangko Sentral ng Pilipinas, 2022, 2024).

3.2.3 Intention to Use

Respondents rated intention to use Virtual Pag-IBIG as “Acceptable,” with a grand mean of 4.37. The usefulness of Virtual Pag-IBIG during the pandemic and creating an account to address Pag-IBIG Fund concerns both obtained the highest weighted mean of 4.39. Preference for Virtual Pag-IBIG rather than visiting branches for immediate inquiries received the lowest mean of 4.30 but remained within the “Acceptable” range. The results indicate favorable intention to use the service while showing that some respondents still value physical interactions. System and service quality can strengthen intention to use e-services by promoting usability, interaction, and satisfaction. Because they prefer to engage with a live person, some people might favor over-the-counter submission as also reflected in recent e-government adoption research emphasizing user support, trust, and facilitating conditions (Garcia-Rio et al., 2023; Aleisa, 2024). Direct assistance may therefore remain important even when users recognize the convenience of online transactions.

3.3 Differences in Virtual Pag-IBIG Acceptance According to OFW Profile

3.3.1 Demographic and Occupational Differences in Acceptance

Acceptance did not significantly differ according to age or civil status across perceived usefulness, perceived ease of use, and intention to use, as the corresponding p-values exceeded the .05 level of significance. In contrast, significant differences occurred according to highest educational attainment, with p-values of 0.001 for perceived usefulness, 0.000 for perceived ease of use, and 0.002 for intention to use. Significant occupational differences were likewise observed for perceived usefulness ($p=0.005$), perceived ease of use ($p=0.002$), and intention to use ($p=0.001$). Educational attainment can affect users' familiarity with technology and perceptions of its benefits. More broadly, technology-adoption research identifies perceived usefulness and perceived ease of use as important influences on behavioral intention, while user characteristics and facilitating conditions can shape adoption patterns (Davis, 1989; Zeebaree et al., 2022; Aleisa, 2024; Nguyen et al., 2024). The present findings therefore suggest that educational and occupational differences should be considered when evaluating acceptance of Virtual Pag-IBIG among OFWs.

3.3.2 Digital Access and Experience Differences in Acceptance

No significant differences in acceptance were found according to gadget used, internet connection, frequency of internet use, frequency of government e-service use, or the option used to create a Virtual Pag-IBIG account. In contrast, the source through which respondents learned about Virtual Pag-IBIG produced significant differences in perceived usefulness ($p=0.006$), perceived ease of use ($p=0.000$), and intention to use ($p=0.005$). Under the Technology Acceptance Model (TAM), developed by Davis (1989), perceived ease of use reflects the extent to which users expect technology to require little effort, while perceived usefulness concerns its ability to improve task performance. Research on e-government adoption also indicates that social influence, awareness, trust, and facilitating conditions can shape behavioral intention and acceptance (Zeebaree et al., 2022; Aleisa, 2024; Nguyen et al., 2024). These perspectives provide a basis for interpreting the observed differences associated with respondents' sources of information about Virtual Pag-IBIG.

3.4 Customer Satisfaction with Virtual Pag-IBIG

3.4.1 Trust in the E-Government Website

Respondents were “Satisfied” with trust in the e-government website, with a grand mean of 4.42. Trust in Virtual Pag-IBIG for various Pag-IBIG Fund transactions received the highest weighted mean of 4.43, while confidence that the platform adheres to the Data Privacy Act received the lowest mean of 4.36. Security of personal information and protection against fraud and illegal hacking were also rated within the “Satisfied” range. The findings indicate generally favorable trust but show comparatively greater caution regarding data privacy. Effective e-government requires not only institutional assurances but also technical infrastructure, transparent processes, and appropriate information sharing (Xin et al., 2022). The legal basis for protecting personal information is provided by the Data Privacy Act of 2012 (Republic Act No. 10173, 2012), making compliance and visible privacy safeguards important to maintaining OFW confidence.

3.4.2 User Satisfaction

Overall user satisfaction was rated “Satisfied,” with a grand mean of 4.32. Satisfaction with the prescribed processing period for account creation received the highest weighted mean of 4.36. Immediate access to application information obtained 4.31, while the item concerning never encountering technical problems during navigation received the lowest mean of 4.24. The results indicate that processing convenience was positively evaluated, although technical performance remained the comparatively weakest aspect. Website design, content quality, usability, and performance influence satisfaction, and users generally prefer interfaces that are understandable and easy to navigate (Aljukhadar et al., 2022). Page performance is also relevant because slow digital experiences can discourage users (Aljukhadar et al., 2022).

3.4.3 Satisfaction with Technology Acceptance

Technology acceptance as a customer-satisfaction dimension received a grand mean of 4.35 and was interpreted as “Satisfied.” Confidence in using online transactions such as Virtual Pag-IBIG received the highest weighted

mean of 4.36, followed by preference for online payment facilities at 4.35. Preference for submitting short-term or housing loan applications through Virtual Pag-IBIG instead of personally visiting a branch received the lowest mean of 4.31. The comparatively lower preference for online loan submission indicates that some OFWs continue to favor physical transactions. Philippine financial-inclusion and digital-payment frameworks emphasize awareness, digital financial literacy, security, reliability, and convenient access as important conditions for the use of digital financial services (Bangko Sentral ng Pilipinas, 2022, 2024). Perceived complexity, familiarity with traditional processes, and internet reliability may likewise affect technology acceptance, particularly where users encounter technical difficulties or unstable connectivity.

3.5 Differences in Customer Satisfaction According to OFW Profile

3.5.1 Demographic and Occupational Differences in Satisfaction

When grouped by age, trust and user satisfaction did not differ significantly, while technology acceptance showed a significant difference at $p=0.050$. Respondents aged 56–65 had the lowest mean rank for technology acceptance. By civil status, trust did not significantly differ, whereas user satisfaction ($p=0.049$) and technology acceptance ($p=0.013$) showed significant differences. Significant differences across educational attainment were observed for trust, user satisfaction, and technology acceptance, all at $p=0.000$. Occupation also produced significant differences across all three dimensions, with $p=0.000$. Prior technology-adoption literature recognizes demographic characteristics and user conditions as factors that can moderate or shape acceptance (Zeebaree et al., 2022), while education and digital inclusion are closely connected to access and confidence in e-government services (Mesa, 2023). Perceived complexity is also relevant within technology-acceptance frameworks (Venkatesh & Davis, 2000; Aleisa, 2024). Technology acceptance itself concerns willingness to adopt technology (Davis, 1989), particularly through perceived usefulness and perceived ease of use, while satisfaction can also be affected by service experience and quality (Pham et al., 2023). Educational differences may relate to digital literacy and expectations regarding usefulness and usability (Mesa, 2023), as well as trust and service-quality expectations (Aleisa, 2024). Occupational differences are similarly associated in the cited literature with trust and satisfaction (Alsarraaf et al., 2023), technology acceptance (Garcia-Rio et al., 2023), and differences in technological access and resources (Mesa, 2023; Zeebaree et al., 2022).

3.5.2 Digital Access and E-Government Experience Differences in Satisfaction

Customer satisfaction did not significantly differ according to gadget regularly used, internet connection, or frequency of internet use. Frequency of using government e-services did not significantly affect trust in the e-government website ($p=0.105$), but significant differences occurred for user satisfaction ($p=0.010$) and technology acceptance ($p=0.023$). How respondents learned about Virtual Pag-IBIG significantly differentiated trust ($p=0.001$), user satisfaction ($p=0.001$), and technology acceptance ($p=0.000$). The method used to create a Virtual Pag-IBIG account did not significantly differentiate any of the three satisfaction dimensions. Differences associated with government e-service experience are consistent with research identifying perceived usefulness, ease of use, social influence, and trust as determinants of technology acceptance and satisfaction (Al-Rahmi et al., 2022; Aleisa, 2024). Infrastructure, knowledge, and security concerns may also constrain satisfaction (Aleisa, 2024), while poor internet connectivity, inadequate knowledge, and language barriers can present difficulties for users of e-government services (Mesa, 2023; G. C. et al., 2024). The significant effect of information source further indicates that awareness, technical understanding, security concerns, promotion, and support can shape how OFWs evaluate the platform.

3.6 Relationship Between Technology Acceptance and Customer Satisfaction

3.6.1 Technology Acceptance and Trust in the E-Government Website

Technology-acceptance variables were significantly and positively related to trust in the e-government website. Perceived usefulness had a correlation coefficient of 0.747, perceived ease of use 0.760, and intention to use 0.838, with all relationships significant at $p=0.000$. These results indicate very strong positive relationships, with intention to use showing the strongest association with trust. Existing e-government research likewise identifies perceived usefulness, perceived ease of use, trust, service quality, and behavioral intention as closely related dimensions of adoption and satisfaction (Al-Rahmi et al., 2022; Balaskas et al., 2022; Aleisa, 2024; Nguyen et al., 2024). These studies provide broader support for interpreting the positive relationships observed between technology acceptance and trust in Virtual Pag-IBIG.

3.6.2 Technology Acceptance and User Satisfaction

Perceived usefulness was positively correlated with user satisfaction at 0.682, interpreted as a strong positive correlation. Perceived ease of use showed a very strong positive correlation of 0.740, while intention to use produced the strongest relationship at 0.791. All three relationships were statistically significant at $p=0.000$. These results support the importance of technology acceptance in determining satisfaction with virtual services. Al-Rahmi et al. (2022) found technology acceptance to be a strong predictor of online-banking satisfaction, while Pham et al. (2023) reported a favorable relationship between technology acceptance and satisfaction with virtual government services. Nguyen et al. (2024) likewise identified perceived usefulness and ease of use as important predictors of technology acceptance and satisfaction.

3.6.3 Technology Acceptance and Overall Technology-Related Satisfaction

Perceived usefulness showed a strong positive correlation of 0.682 with the technology-acceptance dimension of customer satisfaction. Perceived ease of use had a very strong positive correlation of 0.728, while intention to use recorded the strongest correlation at 0.777. All relationships were significant at $p=0.000$, resulting in rejection of the null hypothesis. The results reinforce the relationship between acceptance of technology and satisfaction with Virtual Pag-IBIG. Existing research on digital and e-government services similarly links perceived usefulness, perceived ease of use, service quality, behavioral intention, and technology acceptance with user satisfaction and continued use (Al-Rahmi et al., 2022; Pham et al., 2023; Nguyen et al., 2024). Overall, the findings indicate that perceived usefulness, ease of use, and particularly intention to use are closely associated with OFWs' trust and satisfaction with Virtual Pag-IBIG services.

4. Conclusion & Recommendations

The study concludes that OFWs generally demonstrate a favorable level of acceptance and satisfaction with Virtual Pag-IBIG. Respondents particularly recognized its usefulness for payment transactions, convenient 24/7 website access, and ability to address Pag-IBIG Fund concerns, while also expressing trust in the platform, satisfaction with account-processing periods, and confidence in conducting online transactions. Acceptance varied significantly according to educational attainment, occupation, and how respondents learned about Virtual Pag-IBIG, while customer satisfaction also differed across selected respondent characteristics. Most importantly, technology acceptance showed a very strong positive correlation with customer satisfaction in terms of trust in the e-government website, user satisfaction, and technology acceptance, indicating that greater acceptance of Virtual Pag-IBIG is associated with greater satisfaction with its services.

Pag-IBIG Fund should further improve Virtual Pag-IBIG by providing accessible customer and online support through phone, email, chat, video lessons, and other appropriate channels; clearly communicating its security and privacy measures; continuously collecting OFW feedback and conducting usability testing; and providing clear, simple instructions, including appropriate language support. The platform should remain accessible and user-friendly by clearly communicating technical and internet requirements, improving infrastructure and usability, simplifying online application procedures, and regularly upgrading services according to user needs and technological developments. Pag-IBIG Fund should also strengthen awareness through social media, educate OFWs about the benefits of online transactions and loan applications, provide appropriate support and training, and make the platform more accessible to occupational groups with specific needs.

The study was limited to OFWs who had created a Virtual Pag-IBIG account through the Pag-IBIG website and to respondents reached through Pre-Departure Orientation Seminar (PDOS) briefings and seafarers who personally transacted at selected OFW Center offices in SM Manila, Pasay, and POEA. Data were collected primarily through an online survey from October 7, 2021 to September 28, 2022, with face-to-face distribution becoming possible beginning in July 2022. Accordingly, the findings reflect the experiences and assessments of the respondents covered within these specified settings, channels, and data-collection period.

5. Compliance with ethical standards

The study observed appropriate procedures in the conduct of data collection among qualified Overseas Filipino Workers (OFWs). Prior to data gathering, approval from Pag-IBIG Fund Management was sought to obtain information needed to establish the study sample. A validated researcher-made questionnaire accompanied by a signed request letter was administered to qualified respondents through Google Forms during online Pre-Departure Orientation Seminar (PDOS) meetings and through personal distribution at selected Pag-IBIG Fund offices. Respondents were screened to confirm that they were registered Virtual Pag-IBIG users before participating in the survey.

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