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Research Article

Behavioral Economics Behind Digital Banking Adoption and Retention in the Philippines

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ABSTRACT

The account ownership in digital-only banks has marked a significant growth since the Bangko Sentral of Pilipinas (BSP) has exclusively segmented these banks apart from the traditional ones in November 2020. This warrants the probe on the behavioral economics behind digital banking adoption and retention in the Philippines to examine how cognitive biases play in one's decision to use and continually patronize digital-only banks.

Grounded on Prospect Theory, Technology Acceptance Model (TAM) and Psychological Ownership Theory, the researcher administered survey questionnaires to 385 Filipino users of the digital-only banks. Descriptive-correlational research has been employed with the use of robust statistical testing such as PERMANOVA and Spearman's rho.

The findings of the study reveal that young, predominantly female, college-educated, lower- to middle-income adults characterized the primary adopters, though their engagement remained tentative. Behavioral constructs, adoption and retention drivers consistently drew neutral responses, suggesting cautious acceptance rather than enthusiasm. However, behavioral factors strongly influenced younger, self-employed, and lower-income users, whereas higher earners and those with higher educational attainment relied more on logical evaluation, financial benefits, and product-specific features, indicating varying motivations shaped by demographic intersections.

This outcome calls for a more tailored customer experience so Filipinos can be enticed to adopt and retain digital banking services rather than a one-size-fits-all solution. This behavioral split unearths that some users crave control and confidence whilst the other seek connection and ease. Implications and recommendations have been provided in the end to help further the adoption and retention of digital banking services in the Philippines.

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Background

In November 2020, the Bangko Sentral ng Pilipinas (BSP), through Resolution No. 1536, has officially recognized the new distinct type of bank – "digital banks". These banks are operate exclusively online without the usual brick-and-mortar branches, offering innovative financial services designed to increase accessibility and financial inclusion (Bangko Sentral ng Pilipinas, 2024a). This marked a significant progress in terms of digital transformation in the Philippine banking sector. Currently, there are six (6) banks that have the license, namely - GoTyme Bank Corporation, Maya Bank, Inc., Overseas Filipino Bank, Inc., Tonik Digital Bank, Inc., Union Digital Bank, and UNObank, Inc.

Data shows that growth has surged from 3.6 million in 2023 to 8.7 million in 2024, comprising 7% of total bank accounts, and peso deposits in digital banks grew by over 32% during the same period (Cigaral, 2024). Upward trajectory is expected in terms of adoption with the BSP planning to further grant digital banking licenses in the coming years.

With this, it is only timely to understand what drives sustained engagement in digital banking, especially as financial institutions and regulators aim to bridge the gap between access and usage.

Previous studies on digital banking in the Philippines have focused largely on structural enablers and adoption drivers. Orencia (2023) highlighted the roles of government policy, fintech integration, and internet access, while Quimba et al. (2021) examined how digital platforms expanded financial access during the pandemic. Alcain et al. (2024) emphasized ease of use, trust, and social influence as key behavioral factors shaping adoption, particularly among younger users. Similarly, Salvador and Valenzuela (2021) explored trust, subjective norms, and perceived risk within an extended Technology Acceptance Model. Ballo et al. (2024) identified usefulness, ease of use, and security as primary factors in digital bank preference.

These studies provide valuable insights into adoption and platform choice. However, the researcher opines there is a need with a more in-depth focus on the behavioral mechanisms that influence continued usage. Building on this foundation, this study examines the behavioral economics behind digital banking adoption and retention in the Philippines. Drawing on Prospect Theory, the Technology Acceptance Model, and Psychological Ownership Theory, it explores how cognitive biases influence both the adoption and long-term retention of digital banking services.

Prospect Theory, developed by Kahneman and Tversky (1979), is a foundational concept in behavioral economics that explains how individuals make decisions under conditions of risk and uncertainty. Unlike classical economic theories that assume rational behavior, Prospect Theory posits that people often make decisions based on perceived gains and losses relative to a reference point, rather than final outcomes. This informs the adoption and retention processes by highlighting how cognitive biases such as loss aversion, reference dependence, and framing effects shape initial user decisions. By focusing on the cognitive biases and psychological framing that affect decision-making, this study can uncover deeper insights into why individuals choose to engage—or not engage—with digital-only banking services.

This study employs the Technology Acceptance Model (TAM) as a foundational framework to explore the determinants of digital-only banking adoption in the Philippine context. Originally developed by Davis (1986), TAM has been extensively validated in studies examining user acceptance of emerging technologies. The researcher posits that if users perceive digital banking platforms as both beneficial and easy to use, they are more likely to develop positive attitudes and intentions toward their adoption. Furthermore, TAM's simplicity and adaptability make it suitable for

integration with Prospect Theory, enabling the study to capture both rational evaluations and cognitive biases in financial decision-making.

Finally, this study has also assessed retention which is grounded in Psychological Ownership Theory (POT), introduced by Pierce, Kostova, and Dirks (2001), which explains how individuals develop a sense of ownership over objects, ideas, or institutions, even in the absence of legal possession. This assessed how perceived control, intimate knowledge, and self-investment contribute to customer loyalty and whether these effects are mediated by emotional attachment, satisfaction, user experience, and perceived value. By integrating POT into digital banking research, this study aims to offer a nuanced explanation of customer retention that goes beyond traditional satisfaction-based models.

This study contributes a nuanced, localized perspective to the broader conversation on digital financial inclusion. This study provides empirical findings from a survey of Filipino digital bank users, shedding light on how behavioral and psychological factors shape engagement in the country's evolving digital finance landscape.

Methods

This section covers the research design used in the study, the participants or respondents of the study, the instrumentation, the data gathering procedures involved, and the statistical methods applied in the analysis of data and interpretation thereof.

Research Design

This study used a descriptive-correlational approach. The descriptive aspect aims to identify and measure the factors influencing the behavioral economics behind adoption and retention of digital banking services. The correlational aspect seeks to determine the relationships and interactions between behavioral economics and adoption and retention, including their impact on digital banking behaviors. Survey questionnaires have been administered to gather data and support this study.

Sampling

This study focuses on Filipino individuals who currently use or have previously used digital banking services offered by any of the six licensed digital banks in the country.

According to recent estimates, there are about 8.7 million deposit accounts across these digital banks (Cigaral, 2024). Given the size of the population, the researcher adopted purposive sampling to identify participants who were most relevant to the study's objectives. This method allowed for the deliberate selection of individuals based on their actual experience with digital banking, ensuring that the responses were rich and relevant. A total of 385 responses were gathered—enough to support meaningful statistical analysis. The sample size is also in line based on Cochran's formula for sample size estimation, ensuring the sample is large enough to produce statistically significant results while considering practical constraints, such as time and resource availability.

Among the banks used by the respondents, Maya Bank emerged as the most commonly used, with 37% of participants indicating usage. GoTyme followed with 32%, while UnionDigital captured 18%. Fewer respondents reported using UNObank (5%), Tonik (4%), and the Overseas Filipino Bank (4%). These figures suggest that Maya and GoTyme currently enjoy stronger user preference, likely due to factors such as broader visibility, accessibility, or user satisfaction. Interestingly, many respondents had experience with more than one digital bank, hinting at a flexible and exploratory usage behavior among users.

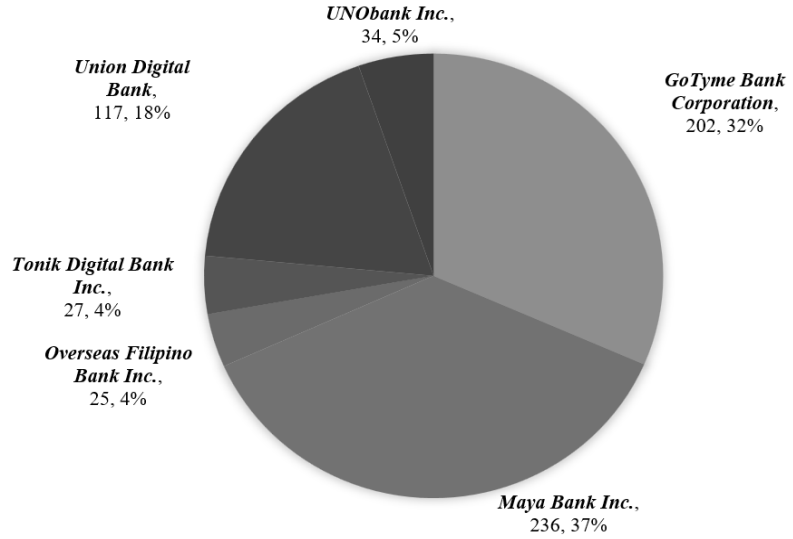

Figure 1. Sample distribution by respondents' bank of account

Instrumentation

This study focuses on Filipino individuals who currently use or have previously used digital banking services offered by any of the six licensed digital banks in the country.

A structured survey questionnaire was the primary instrument for data collection. The survey is designed to align closely with the research objectives. The questionnaire are distributed online via platforms such as Google Forms and social media channels to ensure broad reach and representation across diverse demographic groups. Potential challenges, such as limited internet access in certain areas, were aimed to be addressed by employing offline methods, such as distributing printed questionnaires and conducting in-person interviews, but none of these are necessary as all data has been collected online.

The first section collected data on the demographic profile of respondents, including their age, gender, educational attainment, source of income, monthly income, and the digital bank where they have an account. This information provides a foundational understanding of the respondents' backgrounds and help analyze potential demographic factors influencing digital banking adoption and retention. The second section focused on loss aversion, reference dependence and faming effects to evaluate the behavioral economics of the respondents to digital banking services grounded by the Prospect Theory. The third section tackled on perceived usefulness, perceived ease of use, subjective norms, and trust to assess the factors driving the adoption of digital banking services. The fourth section assessed retention factors, including emotional attachment, customer satisfaction, user experience, and perceived value.

The researcher has asked the expertise of a statistician to validate the survey questionnaire. The evaluation has a computed Cronbach's alpha coefficient is 0.892777 (89.28%), which places it in the "good" category of internal consistency. This suggests that the items in the questionnaire or survey are highly reliable and capable of consistently measuring the intended construct. A value close to 0.9 indicates that the items correlate well and produce stable results.

Result and Discussion

1. Demographic Profile of the Respondents

Distribution of respondents by age

Table 1 shows the age distribution of the 385 respondents. The majority belong to the 20–29 years old group, with 208 respondents or 54.03% of the total. This is followed by 81 respondents aged 30–39 years old (21.04%), 51 respondents below 20 years old (13.25%), 31 respondents aged 40–49 years old (8.05%), and 14 respondents aged 50 and above (3.64%).This indicates that digital banking

adoption in the Philippines is primarily driven by younger users, particularly those in their twenties, who are likely more tech-savvy and open to digital financial solutions.

As to gender, majority identify as female, with 222 individuals accounting for 57.66% of the total. This is followed by 136 males (35.32%) and 27 respondents identifying as LGBTQIA+ (7.01%). This gender profile suggests that women are more actively engaging with digital banking platforms in the Philippines, which may reflect higher digital financial participation or interest among female users in this sample.

The educational attainment of most respondents are college graduates, comprising 196 individuals or 50.91% of the total. This is followed by 145 high school graduates (37.66%), 41 with postgraduate degrees (10.65%), and 3 vocational graduates (0.78%). These results suggest that digital banking adoption in the Philippines is strongly represented among individuals with higher education, particularly those with college and postgraduate qualifications, indicating that educational background may influence openness to digital financial tools.

As to respondent's source of income, majority (167 or 43.38%) are employed in the private sector, followed by unemployed individuals (104 or 27.01%), self-employed (56 or 14.55%), working students (30 or 7.79%), and those employed in the government sector (28 or 7.27%). This suggests that digital banking reaches users across employment categories, but primarily attracts those in the private sector, possibly due to greater digital access and financial engagement in that segment.

Table 1. Demographic Profile of the Respondents (n=385)

Demographic Profile	Category	Frequency	Percentage (%)
Age	<20 y/o	51	13.25
	20–29 y/o	208	54.03
	30–39 y/o	81	21.04
	40–49 y/o	31	8.05
	50 y/o & up	14	3.64
Gender	Male	136	35.32
	Female	222	57.66
	LGBTQIA+	27	7.01
Educational Attainment	High School	145	37.66
	College	196	50.91
	Postgraduate	41	10.65
	Vocational	3	0.78
Source of Income	Employed (Private Sector)	167	43.38
	Employed (Government)	28	7.27
	Self-employed	56	14.55
	Working Student	30	7.79
	Unemployed	104	27.01
Monthly Income	Below 20,000	172	44.68
	20,000–39,999	111	28.83
	40,000–79,999	58	15.06
	80,000–109,999	31	8.05
	110,000 and above	13	3.38

A large portion of respondents (172 or 44.68%) earn below ₱20,000 monthly, while 111 (28.83%) earn between ₱20,000–₱39,999. The rest fall into higher income brackets: ₱40,000–₱79,999 (15.06%), ₱80,000–₱109,999 (8.05%), and ₱110,000 and above (3.38%). This distribution indicates that digital banking in the Philippines is more prevalent

among lower- to middle-income earners, suggesting that affordability and accessibility may be key drivers of adoption.

2. *Assessment of the respondents on the factors influencing behavioral economics in patronizing digital banks*

This part presents the assessment of the respondents on the factors influencing behavioral economics in patronizing digital banks in terms of (1) loss aversion, (2) reference point, and (3) framing effects.

Loss aversion

The table presents respondents' assessment of loss aversion factors influencing their use of digital banks.

All five indicators received mean scores ranging from 2.86 to 3.26, with verbal interpretations consistently marked as Neutral. The highest-rated concern was becoming significantly cautious when potential loss is perceived (Mean = 3.26), while the least concern was shown for potential losses weighing on adoption decisions (Mean = 2.86).

It reflects a balanced view where users recognize potential risks but are not decisively discouraged by them, which could be attributed to increasing digital literacy or trust in digital banking platforms.

The standard deviations, which range from 1.30 to 1.44 (overall SD = 1.35), suggest a moderate variability in responses. This implies that loss aversion is not a significant psychological barrier to digital bank usage for the surveyed respondents.

Table 2. Assessment of the respondents on the factors influencing behavioral economics in patronizing digital banks in terms of Loss Aversion

INDICATORS	Mean	Standard Deviation	Verbal Interpretation
1. I feel a greater concern about losing money through digital banking compared to traditional banks.	3.00	1.33	Neutral
2. Potential losses from digital banking weigh heavily on my decision to adopt these services.	2.86	1.30	Neutral
3. Avoiding financial loss significantly influences my choice to use digital banking.	2.95	1.32	Neutral
4. The risk of online fraud strongly discourages me from fully adopting digital banking.	2.97	1.35	Neutral
5. I become significantly cautious if I perceive any potential loss from digital banking transactions.	3.26	1.44	Neutral
OVERALL MEAN	**3.01**	**1.35**	**Neutral**

Reference Point

The table presents respondents' assessment of reference point as a behavioral economics factor influencing digital banking patronage.

All five indicators received neutral interpretations, with the highest mean of 3.21 for satisfaction being dependent on performance relative to traditional banking, and the lowest mean of 2.85 for expectations formed from past banking experiences. The overall mean is 3.02, indicating a general neutrality in respondents' reliance on traditional banking as a benchmark for evaluating digital banking.

Standard deviations range from 1.25 to 1.42, with an overall SD of 1.35, suggesting moderate variability in responses. This reflects that while the group sentiment is neutral, individual users differ in how much they use traditional banking as a reference when forming judgments about digital banking—highlighting the presence of both open-minded and comparison-prone users.

This neutrality implies that digital banking users are transitioning toward forming independent assessments of digital services rather than solely benchmarking them against traditional standards. It also highlights a potential evolution in user mindset, where digital banking is emerging as a distinct service domain rather than merely an alternative to brick-and-mortar banking.

From a behavioral economics standpoint, this suggests a weak or diminishing anchoring effect, where the reference point (traditional banking) is no longer the absolute basis for judgment—indicating a possible shift in consumer behavior patterns in the digital finance landscape.

Table 3. Assessment of the respondents on the factors influencing behavioral economics in patronizing digital banks in terms of Reference Point

INDICATORS	Mean	Standard Deviation	Verbal Interpretation
1. My choice of digital banking services heavily relies on comparing their features with traditional banking.	3.12	1.42	Neutral
2. Previous experiences with traditional banks set a benchmark for evaluating digital banking services.	3.00	1.32	Neutral
3. My expectations of digital banking are formed based on my earlier interactions with conventional banks.	2.85	1.25	Neutral
4. I find myself regularly comparing digital banking outcomes to what I have experienced with traditional banks.	2.92	1.32	Neutral
5. My satisfaction with digital banking depends on its performance relative to traditional banking standards.	3.21	1.41	Neutral
OVERALL MEAN	**3.02**	**1.35**	**Neutral**

Framing Effects

The table illustrates how respondents assess framing effects as a factor influencing their use of digital banking services.

All five statements received a neutral interpretation, with the highest mean (3.38) attributed to the impact of clearly communicated financial benefits, followed by positive framing about security (3.32), and the way information is presented (3.28). The lowest mean (2.89) was noted for the influence of promotional offers outweighing factual content. The overall mean stood at 3.20, suggesting that framing effects hold a modest influence on respondents' decisions.

Table 4. Assessment of the respondents on the factors influencing behavioral economics in patronizing digital banks in terms of Framing Effects

INDICATORS	Mean	Standard Deviation	Verbal Interpretation
1. How digital banking information is presented significantly impacts my willingness to use it.	3.28	1.46	Neutral
2. Positive framing about the security of digital banking increases my confidence to adopt it.	3.32	1.45	Neutral
3. Negative media coverage greatly reduces my likelihood of choosing digital banking services.	3.14	1.35	Neutral
4. Attractive promotional offers influence me more than factual information when adopting digital banking.	2.89	1.32	Neutral

INDICATORS	Mean	Standard Deviation	Verbal Interpretation
5. Clearly communicated financial benefits strongly affect my decision to use digital banking.	3.38	1.46	Neutral
OVERALL MEAN	**3.20**	**1.42**	**Neutral**

With standard deviations ranging from 1.32 to 1.46 (overall SD = 1.42), the data indicates a moderate spread in opinions. This implies that while the average response is neutral, individual views vary, hinting that some respondents are more responsive to how digital banking is framed—particularly in terms of clarity, perceived benefits, and security assurances.

This neutrality suggests that digital banking users may possess a moderate level of critical thinking and are not easily swayed by how information is framed. In behavioral economics terms, this tempers the assumption that framing alone can drive adoption or retention. Instead, it suggests that users may require more than persuasive messaging—such as actual service quality, experience, or trust mechanisms—to influence their digital banking behavior.

Assessment of the respondents on the factors influencing adoption of digital banking services

This part presents the assessment of the respondents on the factors influencing adoption of digital banks in terms of (1) perceived usefulness, (2) perceived ease of use, (3) subjective norms and (4) trust.

Perceived usefulness

As gleaned in Table 9 below, this section presents the respondents' evaluation of perceived usefulness as a factor in adopting digital banking services.

Table 5. Assessment of the respondents on the factors influencing adoption of digital banking services in terms of Perceived Usefulness

INDICATORS	Mean	Standard Deviation	Verbal Interpretation
1. Digital banking significantly enhances my financial management efficiency.	3.12	1.37	Neutral
2. Using digital banking noticeably simplifies my financial tasks.	3.07	1.40	Neutral
3. Digital banking effectively meets my banking requirements.	3.04	1.33	Neutral
4. Digital banking services considerably save my time.	3.65	1.47	Agree
5. Digital banking clearly improves the convenience of my financial transactions.	3.50	1.49	Agree
OVERALL MEAN	**3.28**	**1.44**	**Neutral**

Among the five indicators, the highest-rated were “saving time” (Mean = 3.65) and “improving convenience” (Mean = 3.50), both interpreted as Agree, while the remaining items—enhancing financial management, simplifying tasks, and meeting banking requirements—were rated Neutral. The overall mean score of 3.28 still falls under the Neutral interpretation.

This Neutral overall mean suggests that, on average, respondents are neither highly enthusiastic nor dissatisfied with the usefulness of digital banking—they acknowledge its practical benefits but may not yet view it as significantly transformative in managing their finances. With standard deviations ranging from 1.33 to 1.49 (overall SD = 1.44), the data reflects moderate variability, indicating that

individual opinions vary and that perceived usefulness is not uniformly strong across the user base.

Perceived ease of use

Table 10 presents how respondents evaluated perceived ease of use as a factor influencing their adoption of digital banking services. All five indicators received a Neutral interpretation, with the highest-rated being "performing banking transactions digitally is clear and simple" (Mean = 3.19), followed by "features are intuitive and user-friendly" (Mean = 3.17). The lowest-rated item was "rarely encountering difficulties" (Mean = 2.85). The overall mean is 3.03, indicating a Neutral stance.

Table 6. Assessment of the respondents on the factors influencing adoption of digital banking services in terms of Perceived Ease of Use

INDICATORS	Mean	Standard Deviation	Verbal Interpretation
1. Navigating digital banking platforms requires minimal effort.	3.04	1.39	Neutral
2. Learning to operate digital banking services is straightforward.	2.90	1.32	Neutral
3. Performing banking transactions digitally is clear and simple.	3.19	1.43	Neutral
4. Digital banking features are intuitive and user-friendly.	3.17	1.44	Neutral
5. I rarely encounter difficulties using digital banking platforms.	2.85	1.26	Neutral
OVERALL MEAN	**3.03**	**1.38**	**Neutral**

This Neutral overall mean implies that users neither strongly agree nor disagree that digital banking platforms are easy to use. It suggests that while some users may find the platforms accessible and user-friendly, others may still encounter challenges. The standard deviations, ranging from 1.26 to 1.44 (overall SD = 1.38), point to moderate variation in responses, highlighting diverse experiences in navigating and operating digital banking platforms.

Subjective Norms

Table 11 presents the respondents' evaluation of subjective norms as a factor influencing their adoption of digital banking services.

Table 7. Assessment of the respondents on the factors influencing adoption of digital banking services in terms of Subjective Norms

INDICATORS	Mean	Standard Deviation	Verbal Interpretation
1. The opinion of my family and friends influences my use of digital banking.	2.73	1.25	Neutral
2. I am more likely to use digital banking if people close to me also use it.	2.84	1.30	Neutral
3. When others expect me to use digital banking, I tend to follow.	2.55	1.09	Disagree
4. I consider using digital banking as something expected in my environment.	2.92	1.28	Neutral
5. I feel more modern or up-to-date when I use digital banking like others do.	3.05	1.40	Neutral
OVERALL MEAN	2.82	1.28	**Neutral**

The indicator with the highest mean score (3.05) pertains to respondents feeling more modern or up-to-date when using digital banking in line with others, followed by the perception that digital banking is expected within their environment (Mean = 2.92), and the influence of peers who also use digital platforms (Mean = 2.84). Conversely, the item with the lowest mean (2.55) indicates a general disagreement with the notion of conforming to others' expectations regarding digital banking use. The overall mean of 2.82 is interpreted as Neutral.

The neutral overall mean implies that, on average, social influences—such as the opinions and behaviors of family, peers, and the broader environment—play a limited role in respondents' decision to adopt digital banking services. With standard deviations ranging from 1.09 to 1.40 (overall SD = 1.28), the results reveal moderate dispersion, suggesting heterogeneity in how individuals respond to perceived social pressures in their financial behavior.

Trust

Table 12 outlines the respondents' evaluation of trust as a factor affecting their adoption of digital banking services.

Table 8. Assessment of the respondents on the factors influencing adoption of digital banking services in terms of Trust

INDICATORS	Mean	Standard Deviation	Verbal Interpretation
1. I trust that my personal information is safe with digital banking.	2.81	1.16	Neutral
2. I believe digital banking reliably processes my transactions.	2.79	1.23	Neutral
3. I have strong trust that digital banking operates with integrity.	2.71	1.09	Neutral
4. I feel my money is protected when I use digital banking.	2.76	1.11	Neutral
5. My trust in digital banking increases as I continue to use it.	2.92	1.25	Neutral
OVERALL MEAN	**2.80**	**1.17**	**Neutral**

All five indicators were interpreted as Neutral, with the highest mean score (2.92) attributed to the item stating that trust in digital banking increases with continued use. This is followed by confidence in the safety of personal information (Mean = 2.81) and belief in reliable transaction processing (Mean = 2.79). The lowest mean score (2.71) was recorded for trust in the integrity of digital banking operations. The overall mean of 2.80 reflects a generally neutral stance.

This neutral overall mean indicates that while respondents are not strongly distrustful of digital banking, they also do not demonstrate high confidence in it. Trust, therefore, appears to be tentative and developing, rather than firmly established. The standard deviations, ranging from 1.09 to 1.25 (with an overall SD of 1.17), suggest a relatively consistent perception across respondents, signaling that cautious trust is a common sentiment among users.

Assessment of the respondents on the factors influencing retention of digital banking services

This part presents the assessment of the respondents on the factors influencing retention of digital banks in terms of (1) emotional attachment, (2) customer satisfaction, (3) user experience and (4) perceived value.

Emotional Attachment

As gleaned in Table 13 below, this section presents the respondents' assessment of emotional attachment as a factor influencing the

retention of digital banking services. All five indicators received a Neutral interpretation.

The highest-rated item was "I am emotionally inclined to continue using my current digital banking service" (Mean = 2.87), followed by feelings of personal investment and potential emotional loss from service discontinuation (both with Mean = 2.82). The lowest-rated item was identification with the digital banking service provider (Mean = 2.67). The overall mean score of 2.78 reflects a generally Neutral level of emotional attachment.

Table 9. Assessment of the respondents on the factors influencing retention of digital banking services in terms of Emotional Attachment

INDICATORS	Mean	Standard Deviation	Verbal Interpretation
1. I feel personally invested in my digital banking platform.	2.82	1.17	Neutral
2. I would miss my digital banking service if I could no longer use it.	2.82	1.22	Neutral
3. My digital banking service evokes positive emotions for me.	2.73	1.09	Neutral
4. I strongly identify with my digital banking service provider.	2.67	1.08	Neutral
5. I am emotionally inclined to continue using my current digital banking service.	2.87	1.25	Neutral
OVERALL MEAN	2.78	1.16	**Neutral**

This neutral overall mean implies that users do not display strong emotional bonds with their digital banking platforms. While some level of emotional connection exists, it is not intense enough to be a significant driver of retention. The standard deviations, ranging from 1.08 to 1.25 (overall SD = 1.16), indicate relatively consistent responses, suggesting that the lack of deep emotional attachment is shared by most respondents.

Customer Satisfaction

Table 14 displays the respondents' evaluation of customer satisfaction as a factor in retaining digital banking services. All five indicators received a Neutral verbal interpretation. The highest mean score (3.05) was recorded for the likelihood of recommending digital banking to others, while the lowest (2.70) was for overall positive experiences. Meanwhile, satisfaction with issue resolution (Mean = 2.82) and fulfillment of expectations (Mean = 2.79) were also rated neutrally. The overall mean stood at 2.82.

This neutral overall rating suggests that, while users are not dissatisfied, they are also not particularly impressed with the current digital banking experience. The moderate standard deviations, ranging from 1.17 to 1.36 (with an overall SD of 1.24), indicate that responses are relatively consistent, though some variability remains—pointing to room for improvement in delivering a more satisfying and memorable service experience.

Table 10. Assessment of the respondents on the factors influencing retention of digital banking services in terms of Customer Satisfaction

INDICATORS	Mean	Standard Deviation	Verbal Interpretation
1. My digital banking consistently meets or exceeds my expectations.	2.79	1.21	Neutral
2. I am fully satisfied with the quality of my digital banking services.	2.75	1.23	Neutral
3. My digital bank efficiently addresses any concerns or issues I have.	2.82	1.22	Neutral
4. I have had very positive overall experiences with my digital banking service.	2.70	1.17	Neutral

INDICATORS	Mean	Standard Deviation	Verbal Interpretation
5. I am likely to recommend digital banking service to another person.	3.05	1.36	Neutral
OVERALL MEAN	**2.82**	**1.24**	**Neutral**

User Experience

The table outlines respondents' evaluation of user experience as a factor contributing to the continued use of digital banking services.

All five statements were rated Neutral. The highest-rated indicator was the enjoyment of conducting transactions via digital platforms (Mean = 3.03), followed by satisfaction with ongoing feature improvements (Mean = 2.97) and the pleasantness of navigating the app (Mean = 2.96). Meanwhile, statements relating to the intuitiveness of the platform (Mean = 2.87) and the smoothness of user interactions (Mean = 2.85) received the lowest average ratings. The overall mean of 2.93 indicates a generally Neutral perception.

Table 11. Assessment of the respondents on the factors influencing retention of digital banking services in terms of User Experience

INDICATORS	Mean	Standard Deviation	Verbal Interpretation
1. My digital banking platform consistently provides an intuitive user experience.	2.87	1.29	Neutral
2. Interactions with my digital banking service are seamless and satisfying.	2.85	1.24	Neutral
3. I enjoy the process of performing transactions via my digital bank.	3.03	1.36	Neutral
4. My digital banking service regularly enhances features to improve my experience.	2.97	1.30	Neutral
5. Navigating and using my digital banking app or platform is always pleasant.	2.96	1.28	Neutral
OVERALL MEAN	**2.93**	**1.29**	**Neutral**

This result suggests that, although the user experience is neither poor nor dissatisfying, it falls short of being described as truly engaging or outstanding. With standard deviations ranging from 1.24 to 1.36 (overall SD = 1.29), the data reveals a moderate level of variation in how respondents perceive their digital banking experiences, implying that some users find the interfaces more satisfying and accessible than others.

Perceived Value

Table 16 depicts the respondents' perceptions of perceived value as a factor influencing the continued use of digital banking services

Table 12. Assessment of the respondents on the factors influencing retention of digital banking services in terms of Perceived Value

INDICATORS	Mean	Standard Deviation	Verbal Interpretation
1. The benefits of my digital banking service significantly outweigh any perceived inconveniences.	2.95	1.30	Neutral
2. My digital banking service provides high value relative to its cost and effort.	2.87	1.26	Neutral

INDICATORS	Mean	Standard Deviation	Verbal Interpretation
3. The efficiency gained from digital banking justifies its continued use.	3.16	1.39	Neutral
4. Digital banking offers superior financial value compared to traditional banking.	2.91	1.25	Neutral
5. The rewards and savings provided by digital banking clearly justify its ongoing use.	3.18	1.41	Neutral
OVERALL MEAN	3.02	1.33	**Neutral**

All five statements were rated as Neutral. The highest-rated item was the belief that rewards and savings from digital banking justify its continued use (Mean = 3.18), followed closely by the perceived efficiency gained (Mean = 3.16). Meanwhile, the lowest mean (2.87) was associated with the value of digital banking relative to its cost and effort. The overall mean was 3.02, still classified as Neutral.

This neutral rating suggests that, although users acknowledge some value in using digital banking platforms—particularly in terms of convenience and rewards, they are not overwhelmingly convinced of its superiority or cost-effectiveness. Standard deviations ranged from 1.25 to 1.41 (overall SD = 1.33), indicating moderate response variability, which implies that individual experiences with perceived value differ across the respondent group.

Multivariate Analysis of Significant Differences in Behavioral Economics, Adoption, and Retention of Digital Banking Based on Respondents' Demographic Profile

This section presents the results of the multivariate analysis conducted to determine whether there are significant differences in the respondents' assessments of behavioral economics, adoption, and retention of digital banking when grouped according to their demographic profile

First, we have to determine the normality of the distribution of data. Determining the normality of data distribution is a fundamental step in statistical analysis because many statistical tests-particularly parametric tests such as t-tests, ANOVA, and regression-assume that the underlying data are normally distributed. This assumption is critical for the validity and reliability of statistical inferences. If the normality assumption is violated, the results of these tests may be inaccurate, leading to incorrect conclusions.

Table 13. Normality Test of Data Distribution using Shapiro-Wilk Test

Variables	W statistic	p-value (Two-tailed)	Alpha	Verbal Interpretation
Behavioral Economics	0.972	<0.0001	0.05	Not normally distributed
Adoption	0.972	<0.0001	0.05	Not normally distributed
Retention	0.942	<0.0001	0.05	Not normally distributed

Assessing normality allows researchers to decide whether data transformations or non-parametric alternatives are necessary to ensure robust analysis. Statistical tests (e.g., Shapiro-Wilk, Anderson-Darling) and graphical methods (e.g., Q-Q plots) are commonly used to evaluate normality, and transforming non-normal data can enhance the reliability of subsequent analyses (Kim, 2023; Ayele, 2021; Lim, 2023). Using analytical statistical tools, the researcher has concluded that the distribution of the data is not normal. Please refer to the succeeding tables.

The Shapiro–Wilk test for normality revealed that the distributions of the three dependent variables—Behavioral Economics (W = 0.972), Adoption (W = 0.972), and Retention (W = 0.942)—all significantly deviated from normality, with p-values less than 0.0001.

While the Shapiro–Wilk test effectively detects deviations in central tendency, the Anderson–Darling test adds sensitivity to deviations

in the tails of the distribution. Table 19 above shows consistent findings of non-normality of the data distribution. Since all p-values are far below 0.05, this reinforces the results of the Shapiro–Wilk test and confirm that the data do not follow a normal distribution.

Table 14. Normality Test of Data Distribution using Anderson-Darling Test

VARIABLES	A^2	p-value (Two-tailed)	Alpha	Verbal Interpretation
Behavioral Economics	3.936	<0.0001	0.05	Not normally distributed
Adoption	3.387	<0.0001	0.05	Not normally distributed
Retention	7.381	<0.0001	0.05	Not normally distributed

Given the violation of multivariate normality in the dataset, a non-parametric approach—Permutational Multivariate Analysis of Variance (PERMANOVA)—was employed. Unlike classical ANOVA or MANOVA, PERMANOVA does not assume normality and instead uses permutation tests on distance matrices to assess group-level differences across multiple dependent variables. This method ensures the robustness of the findings, particularly in the context of real-world survey data that often deviate from ideal statistical assumptions.

The PERMANOVA results in Table 19 reveal that several demographic variables and interaction terms significantly influence the multivariate assessment of behavioral economics, adoption, and retention of digital banking. Specifically, Highest Educational Attainment ($F = 3.08$, $p = 0.01$), Source of Income ($F = 2.17$, $p = 0.05$), and multiple interaction effects such as Age × Highest Educational Attainment ($F = 2.03$, $p = 0.04$), Age × Source of Income ($F = 2.26$, $p = 0.01$), and Gender × Source of Income ($F = 2.26$, $p = 0.02$) were statistically significant. These variables were marked as Significantly Different (SD). In contrast, individual demographic variables such as Age, Gender, and Monthly Gross Income on their own did not produce significant group differences and were thus interpreted as Not Significantly Different (NSD).

The findings suggest that digital banking behavior is not solely shaped by individual demographic traits, but rather by intersections of demographic attributes. For instance, while gender or income alone may not significantly influence digital banking behavior, the interaction between gender and income source does, possibly reflecting different financial motivations or access conditions between men and women based on how they earn. Similarly, the significant effect of educational attainment aligns with the notion that financial literacy and technological readiness play crucial roles in digital banking adoption and retention. The R^2 values, although modest (ranging from 0.01 to 0.06), are consistent with effect sizes typical in behavioral and social science research and indicate that these demographic dimensions collectively explain meaningful variance in user behavior.

There is a statistically significant difference in behavioral economics, adoption, and retention of digital banking when respondents are grouped by their source of income. Although the effect size ($R^2 = 0.02$) is relatively small, it suggests that how people earn (e.g., salary, business, remittances) influences their digital banking behavior—possibly due to differing risk appetites, financial literacy, or transactional needs

The interaction between age and education level is significantly associated with differences in digital banking behavior. This implies that the impact of education on digital banking varies across age groups—for instance, older individuals with higher education may be more confident or skeptical about digital platforms compared to younger, less educated users.

Table 15. Multivariate Analysis of Significant Differences in Behavioral Economics, Adoption, and Retention of Digital Banking Based on Respondents' Demographic Profile Using PERMANOVA

DEMOGRAPHIC PROFILE	Df	Sums OfSqs	Mean Sqs	F.Model	R2	Pr(>F)	VI
Age	4.00	0.07	0.02	1.13	0.01	0.35	NSD
Gender	2.00	0.02	0.01	0.63	0.00	0.57	NSD
Highest.Educational.Attainment	3.00	0.13	0.04	3.08	0.02	0.01	SD
Source.of.Income	4.00	0.13	0.03	2.17	0.02	0.05	SD
Monthly.Gross.Income	5.00	0.10	0.02	1.33	0.01	0.22	NSD
Age:Gender	6.00	0.32	0.05	3.64	0.05	0.00	SD
Age:Highest.Educational.Attainment	8.00	0.24	0.03	2.03	0.03	0.04	SD
Age:Source.of.Income	12.00	0.39	0.03	2.26	0.06	0.01	SD
Age:Monthly.Gross.Income	11.00	0.28	0.03	1.75	0.04	0.05	NSD
Gender:Highest.Educational.Attainment	4.00	0.07	0.02	1.22	0.01	0.30	NSD
Gender:Source.of.Income	8.00	0.26	0.03	2.26	0.04	0.02	SD
Gender:Monthly.Gross.Income	6.00	0.18	0.03	2.08	0.03	0.04	SD
Highest.Educational.Attainment:Source.of.Income	7.00	0.18	0.03	1.72	0.03	0.08	NSD
Highest.Educational.Attainment:Monthly.Gross.Income	4.00	0.09	0.02	1.51	0.01	0.18	NSD
Source.of.Income:Monthly.Gross.Income	7.00	0.15	0.02	1.48	0.02	0.16	NSD
Residuals	293.00	4.26	0.01		0.62		
Total	384.00	6.85			1.00		

Legend:

Df	Degrees of freedom – number of groups (or categories) minus one.
SumsOfSqs	Total sum of squared distances between group centroids (variation).
MeanSqs	Mean sum of squares = SumsOfSqs ÷ Df. Measures average dispersion.
F.Model	The pseudo-F statistic. A higher value suggests stronger group separation.
R^2	Proportion of variance explained by the groupings (effect size).
Pr(>F)	p-value from the permutation test. Indicates significance of group differences.
VI	Verbal Interpretaion
NSD	No significant difference
SD	Significantly different

Significant differences also exist in the digital banking behaviors across gender and income source interactions. For example, women earning through self-employment or remittances may show different patterns of trust, risk aversion, or reliance on digital channels compared to men with salaried incomes.

This interaction suggests a notable variation in digital banking behavior based on the combined effects of gender and income level. For instance, high-income males and low-income females may have differing usage patterns, confidence levels, or susceptibility to behavioral influences such as promotional framing or loss aversion.

The educational background and income type together significantly impact digital banking attitudes and behaviors. This may reflect how education shapes financial decision-making, especially when tied to more volatile or non-traditional sources of income (e.g., gig work vs. formal employment).

These results reinforce the importance of a targeted, multi-dimensional approach to understanding digital banking behavior in the Philippines. Policymakers and financial institutions should not generalize strategies based solely on singular demographic factors such as age or income level. Instead, they should recognize how combined socio-demographic factors—especially education, income source, and gender roles—interact to shape user experiences and engagement with digital banking platforms. These insights can inform the design of inclusive, behaviorally aligned financial services and marketing strategies aimed at improving digital banking adoption and retention across diverse population segments.

While the effect sizes (R^2 ranging from 0.02–0.04) are modest, they are meaningful

enough to suggest targeted interventions, such as (1) financial education campaigns focused on self-employed or informal earners, (2) gender-sensitive features to boost trust and usability, or (3) framing messages that resonate with specific age-education clusters.

Analysis of the Relationship Between Behavioral Economics and Digital Banking Adoption Across Demographic Profiles

This section determines if there is a significant relationship among the assessment of the respondents between behavioral economics and digital banking adoption across demographic profile. Behavioral economics influences digital banking behavior by shaping how users evaluate risk, process information, and make financial decisions. Instead of acting solely on rational utility, respondents are affected by behavioral patterns such as loss aversion, framing effects, and reference points, which in turn influence whether they adopt digital banking.

Relationship between Behavioral Economics and Digital Banking Adoption by Age

The analysis reveals a notable pattern in the strength and significance of the relationship between behavioral economics and digital banking adoption across different age groups. The "Below 20 years old" group registered the highest correlation coefficient ($\rho = 0.8108$, $\rho^2 = 0.6574$), indicating a very strong and statistically significant positive relationship. This suggests that behavioral tendencies such as framing effects, reference points, and loss aversion play a substantial role in influencing the digital banking decisions of the youngest users—likely due to their greater exposure to digital-native environments and emotionally guided choices. The 40–49 and 20–29 age groups followed with strong positive and significant correlations ($\rho = 0.7236$ and $\rho = 0.6179$, respectively), highlighting that these working-age individuals are also responsive to behavioral cues when deciding to adopt digital banking.

Table 16. Relationship between Behavioral Economics and Digital Banking Adoption by Age

Group	Sample Size	*p*-value	ρ^2	Spearman's rho (ρ)	Verbal Interpretation
Below 20 years old	51	0.0000	0.6574	0.8108	Significant - Very Strong Positive
40–49 years old	31	0.0000	0.5236	0.7236	Significant - Strong Positive
20–29 years old	208	0.0000	0.3818	0.6179	Significant - Strong Positive
30–39 years old	81	0.0000	0.2964	0.5444	Significant – Moderate Positive
50 years old and above	14	0.2095	0.1278	0.3575	Not Significant – Weak Positive

Meanwhile, the 30–39 years old group exhibited a moderate but still significant correlation ($\rho = 0.5444$), suggesting that while behavioral economics still influences this group, the effect is slightly tempered—potentially due to more rational, experience-based financial decision-making. Interestingly, the 50 years old and above segment presented a weak and statistically non-significant relationship ($\rho = 0.3575$, $p = 0.2095$), indicating that their adoption behavior may be less driven by behavioral heuristics and more influenced by structural factors such as technological comfort, accessibility, or traditional banking preferences.

Overall, the findings support the hypothesis that behavioral economics significantly impacts digital banking adoption, particularly among younger and middle-aged demographics. These insights offer strategic implications for digital banks: tailored interventions that leverage behavioral triggers (e.g., intuitive onboarding, risk-reduction framing, or gamified incentives) may prove most effective among younger cohorts, while older users might benefit more from reassurance-based messaging and usability enhancements.

Relationship between Behavioral Economics and Digital Banking Adoption by Gender

The analysis of gender groups reveals that behavioral economics significantly influences digital banking adoption across all gender identities, though the strength of this relationship varies. The LGBTQIA+ group demonstrated the strongest correlation ($\rho = 0.8384$, $\rho^2 = 0.7028$), classified as a very strong and statistically significant positive relationship. This implies that individuals within this community may be especially responsive to behavioral cues—such as how information is framed, perceived risks, and emotional associations—when deciding to adopt digital banking. The high coefficient of determination also suggests that behavioral economic factors explain a substantial portion of adoption behavior among LGBTQIA+ respondents.

Table 17. Relationship between Behavioral Economics and Digital Banking Adoption by Gender

Group	Sample Size	*p*-value	ρ^2	Spearman's rho (ρ)	Verbal Interpretation
LGBTQIA+	27	0.0000	0.7028	0.8384	Significant - Very Strong Positive
Male	136	0.0000	0.5123	0.7158	Significant - Strong Positive
Female	222	0.0000	0.2736	0.5231	Significant - Moderate Positive

For male respondents, the correlation remained strong and significant ($\rho = 0.7158$, $\rho^2 = 0.5123$), underscoring that their adoption behaviors are similarly shaped by psychological tendencies. This may reflect behavioral traits such as risk aversion mitigated by perceived convenience, or reliance on status-quo framing during decision-making. In contrast, female respondents exhibited a moderate but still significant relationship ($\rho = 0.5231$, $\rho^2 = 0.2736$), indicating that while behavioral economics still plays a role in their decision to adopt digital banking, other structural or contextual factors may also be at play—such as security, user experience, or social endorsement.

Collectively, these findings confirm that behavioral economics is a critical factor in understanding digital banking adoption across gender lines, but that targeted strategies may be necessary. Digital banking providers should consider differentiated messaging: for instance, emotionally resonant campaigns or personalized digital experiences may be especially impactful for LGBTQIA+ and male users, while transparency, trust cues, and usability may resonate more with female users. Tailoring user engagement based on behavioral profiles aligned with gender identity could increase adoption and improve digital financial inclusion.

Relationship between Behavioral Economics and Digital Banking Adoption by Highest Educational Attainment

The analysis out of Table 22 reveals that educational attainment plays a critical role in shaping how behavioral economic factors influence the adoption of digital banking. Among college graduates and high school graduates, the correlation between behavioral economics and digital banking adoption was both strong and statistically significant ($\rho = 0.6799$ and $\rho = 0.6669$, respectively). These results indicate that individuals in these educational groups are likely influenced by behavioral triggers such as loss aversion, framing effects, and reference dependence when deciding to engage with digital banking services. The moderate-to-high coefficients of determination ($\rho^2 = 0.4622$ and 0.4448) suggest that a substantial portion of their adoption behavior can be explained by these psychological variables.

Table 18. Relationship between Behavioral Economics and Digital Banking Adoption by Highest Educational Attainment

Group	Sample Size	*p*-value	ρ^2	Spearman's rho (ρ)	Verbal Interpretation
College Graduate	196	0.0000	0.4622	0.6799	Significant - Strong Positive
High School Graduate	145	0.0000	0.4448	0.6669	Significant - Strong Positive
Postgraduate (Master's/Doctorate)	41	0.8478	0.0010	0.0309	Not Significant – Weak Positive
Vocational Graduate	3	0.0000	1.0000	1.0000	*Data is too few*

In contrast, respondents who had attained postgraduate education (Master's or Doctorate degrees) exhibited a very weak and statistically non-significant relationship (ρ = 0.0309, p = 0.8478). This suggests that advanced degree holders may rely more on analytical reasoning or established financial preferences when evaluating digital banking options, rather than being swayed by behavioral cues. It is also possible that this segment exercises greater cognitive control or financial discipline, reducing the impact of behavioral heuristics in their decision-making.

The vocational graduate group presented a perfect correlation (ρ = 1.0000), but the extremely small sample size (n = 3) renders this result unreliable and not generalizable. As such, it is prudent to treat this result as statistically inconclusive.

The findings affirm that behavioral economics has a stronger influence on digital banking adoption among those with basic to tertiary education, and a relatively diminished effect among postgraduate respondents. These distinctions imply that digital banks may benefit from customizing engagement strategies: for instance, emotion-driven marketing, intuitive app design, and behavioral nudges may be more effective for users with lower or mid-level educational attainment, while logic-based, data-driven messaging might resonate more with highly educated users.

Relationship between Behavioral Economics and Digital Banking Adoption by Source of Income

The correlation results in Table 23 indicate that behavioral economics significantly influences digital banking adoption across all income sources, though the strength of this relationship varies by economic role and level of financial autonomy. Among respondents receiving student allowances, the relationship was strong and significant (ρ = 0.6585, ρ^2 = 0.4336). This suggests that young or dependent individuals are particularly influenced by behavioral drivers—such as framing effects and reference points—when engaging with digital financial services. Their decisions may be shaped by peer norms, digital nativity, or emotionally charged perceptions of banking risk and convenience.

Table 19. Relationship between Behavioral Economics and Digital Banking Adoption by Source of Income

Group	Sample Size	*p*-value	ρ^2	Spearman's rho (ρ)	Verbal Interpretation
Employed (Private Sector)	167	0.0000	0.3249	0.5700	Significant - Moderate Positive
Allowance (if student)	104	0.0000	0.4336	0.6585	Significant – Strong Positive
Self-employed	56	0.0000	0.5113	0.7151	Significant – Strong Positive
Unemployed	30	0.0115	0.2072	0.4552	Significant - Moderate Positive

Group	Sample Size	*p*-value	ρ^2	Spearman's rho (ρ)	Verbal Interpretation
Employed (Government)	28	0.0006	0.3705	0.6087	Significant – Strong Positive

The self-employed group exhibited the strongest correlation among all groups (ρ = 0.7151, ρ^2 = 0.5113), highlighting a pronounced sensitivity to behavioral factors in their adoption decisions. This could reflect their heightened risk awareness, autonomy in financial management, and preference for tools that offer control and flexibility—traits which align closely with behavioral economic theories like prospect theory and mental accounting.

Similarly, both government (ρ = 0.6087) and private sector employees (ρ = 0.5700) showed moderate-to-strong significant correlations, suggesting that working professionals are also behaviorally responsive but to a slightly lesser extent. These users may adopt digital banking in response to framing related to time savings, ease of salary disbursement, or platform reputation.

The unemployed segment presented a moderate but significant correlation (ρ = 0.4552, p = 0.0115), with a lower coefficient of determination (ρ^2 = 0.2072). This may reflect a mix of adoption motivations—behavioral, practical, and access-based—among individuals with limited financial activity or fewer banking transactions.

The data suggest that behavioral economics remains a potent explanatory factor for digital banking adoption across all sources of income, but especially for self-employed individuals and students on allowance. For practitioners, these insights imply the need for tailored platform features and messaging strategies: while financial autonomy may drive behavioral influence among entrepreneurs and freelancers, emotionally resonant and convenience-framed narratives could be key to capturing the student market. Conversely, structural ease and trust-building may resonate more effectively with employed and unemployed users navigating traditional-to-digital transitions.

Relationship between Behavioral Economics and Digital Banking Adoption by Monthly Gross Income

The results reveal distinct behavioral patterns in digital banking adoption across income brackets, emphasizing how economic standing shapes psychological responsiveness to digital financial tools.

For the Below ₱20,000 and ₱20,000–₱49,999 income groups, the relationships were strong and statistically significant (ρ = 0.6563 and ρ = 0.6840, respectively), with moderately high coefficients of determination (ρ^2 = 0.4307 and 0.4679). This suggests that lower- to mid-income earners are highly susceptible to behavioral influences—such as convenience framing, trust cues, and fear of loss—when deciding to adopt digital banking. These users may prioritize perceived security, ease of use, and immediate cost-benefit perceptions in their financial choices.

Table 20. Relationship between Behavioral Economics and Digital Banking Adoption by Monthly Gross Income

Group	Sample Size	*p*-value	ρ^2	Spearman's rho (ρ)	Verbal Interpretation
Below 20,000	171	0.0000	0.4307	0.6563	Significant - Strong Positive
20,000–49,999	111	0.0000	0.4679	0.6840	Significant - Strong Positive
50,000–79,999	58	0.0008	0.1821	0.4267	Significant - Moderate Positive
80,000–109,999	31	0.0002	0.3759	0.6131	Significant - Strong Positive
110,000 and above	13	0.8606	0.0029	-0.0541	Not Significant - Very Weak Negative

The ₱50,000–₱79,999 and ₱80,000–₱109,999 groups also showed statistically significant correlations, albeit slightly weaker (ρ = 0.4267 and ρ = 0.6131). This implies a gradual decline in behavioral sensitivity as income increases, likely due to a shift toward more analytical or value-based financial decision-making. Nonetheless, behavioral economics still plays a considerable role in shaping adoption behavior among these segments.

Interestingly, the ₱110,000 and above group exhibited a very weak negative and statistically non-significant correlation (ρ = –0.0541, p = 0.8606). This suggests that individuals in the highest income bracket are least influenced by behavioral cues in their adoption of digital banking. Their choices may instead hinge on concrete factors such as platform functionality, advanced financial tools, integration with investments, or even institutional loyalty.

The foregoing analyses lay down a clear inverse relationship between income level and behavioral influence: the lower the income, the stronger the effect of behavioral economics on adoption. For digital banks, this implies that behaviorally informed strategies—such as gamification, time-limited incentives, or simplified onboarding flows—are likely to be most effective among low- and middle-income users. In contrast, higher-income users may require more sophisticated, feature-rich, and data-driven value propositions to motivate digital banking engagement.

Analysis of the Relationship Between Behavioral Economics and Digital Banking Retention Across Demographic Profiles

This section determines if there is a significant relationship among the assessment of the respondents between behavioral economics and digital banking retention across demographic profile. Behavioral economics influences digital banking behavior by shaping how users evaluate risk, process information, and make financial decisions. Instead of acting solely on rational utility, respondents are affected by behavioral patterns such as loss aversion, framing effects, and reference points, which in turn influence whether they retain patronizing digital banks.

Relationship between Behavioral Economics and Digital Banking Retention by Age

The analysis of behavioral economics and digital banking retention across age groups highlights clear variations in psychological engagement and long-term digital banking usage patterns. The 40–49 years old group exhibited the strongest correlation (ρ = 0.8750, ρ^2 = 0.7656), categorized as a very strong and statistically significant relationship. This suggests that individuals in this age group are highly influenced by behavioral cues—such as emotional framing, perceived loss from switching banks, and established usage routines—when deciding to continue using digital banking platforms. This age group may be at a stage of financial maturity where digital tools are deeply integrated into their financial habits, reinforcing loyalty.

Table 21. Relationship between Behavioral Economics and Digital Banking Retention by Age

Group	Sample Size	*p*-value	ρ^2	Spearman's rho (ρ)	Verbal Interpretation
20–29 years old	208	0.0000	0.2425	0.4925	Significant - Moderate Positive
30–39 years old	81	0.0000	0.1927	0.4389	Significant - Moderate Positive
Below 20 years old	51	0.0000	0.5559	0.7456	Significant - Strong Positive
40–49 years old	31	0.0000	0.7656	0.8750	Significant - Very Strong Positive
50 years old and above	14	0.3042	0.0876	0.2960	Not Significant - Weak Positive

Likewise, the Below 20 years old group showed a strong and significant correlation (ρ = 0.7456, ρ^2 = 0.5559), indicating that even at early stages of financial independence, behavioral economics significantly drives retention. This may be due to the emotional gratification,

convenience, and habitual use reinforced by digitally native behaviors in younger populations.

The 20–29 and 30–39 years old segments exhibited moderate but statistically significant correlations (ρ = 0.4925 and ρ = 0.4389, respectively), suggesting that behavioral influence still plays a meaningful role in digital banking retention, though not as strongly as in other age groups. These findings likely reflect a transitional mindset—these users may be open to alternatives but are swayed by trust, satisfaction, and perceived ease of use, consistent with constructs like psychological ownership and loss aversion.

In contrast, the 50 years old and above group presented a weak and statistically non-significant relationship (ρ = 0.2960, p = 0.3042), indicating that behavioral economics may not be a primary factor in their continued use of digital banking. Instead, their retention decisions could be more structurally driven—based on service reliability, traditional preferences, or access to physical banking channels.

The foregoing results underscore that younger and middle-aged users show stronger behavioral dependency in retaining digital banking services. Strategic interventions—such as personalized interfaces, rewards, and continuous engagement mechanisms—may help reinforce user retention among these segments. For older users, banks may need to emphasize security, usability, and blended channel integration to support consistent usage.

Relationship between Behavioral Economics and Digital Banking Retention by Gender

The findings suggest that behavioral economics significantly influences digital banking retention across all gender identities, with all three groups—Male, Female, and LGBTQIA+—showing moderate and statistically significant positive correlations.

Male respondents demonstrated the highest correlation (ρ = 0.5812, ρ^2 = 0.3378), suggesting that behavioral elements such as psychological ownership, inertia, and perceived switching costs meaningfully shape continued engagement with digital banking. This may indicate that men are particularly responsive to product consistency, loyalty cues, and habit-forming digital experiences once initial adoption has occurred.

Female respondents also exhibited a moderate and significant correlation (ρ = 0.5113, ρ^2 = 0.2614), implying that psychological factors contribute to retention, although possibly in a more nuanced or emotionally contextualized manner. For example, emotional satisfaction, safety perception, and reliability may be key behavioral anchors among female users.

Table 22. Relationship between Behavioral Economics and Digital Banking Retention by Gender

Group	Sample Size	*p*-value	ρ^2	Spearman's rho (ρ)	Verbal Interpretation
Male	136	0.0000	0.3378	0.5812	Significant - Moderate Positive
Female	222	0.0000	0.2614	0.5113	Significant - Moderate Positive
LGBTQIA+	27	0.0045	0.2801	0.5293	Significant - Moderate Positive

Interestingly, LGBTQIA+ respondents, though comprising the smallest subgroup, also showed a moderate and significant correlation (ρ = 0.5293, p = 0.0045). Despite the lower sample size, the result implies that behavioral drivers—such as perceived inclusivity, brand alignment, or community-based trust—may play a vital role in shaping long-term engagement for LGBTQIA+ users.

The foregoing statistical data reinforce that behavioral economics is a relevant and consistent determinant of digital banking retention across gender identities, though the psychological pathways may differ. For financial institutions, this underscores the importance of inclusive and behaviorally attuned engagement strategies. Retention efforts may be strengthened through personalized communication, consistent digital experiences, and features

that reinforce habit, satisfaction, and trust across all gender groups.

Relationship between Behavioral Economics and Digital Banking Retention by Highest Educational Attainment

The results suggest that educational attainment continues to influence how behavioral economics relates to digital banking retention, though the strength and significance of this relationship varies. Among college graduates, the correlation was strong and statistically significant ($\rho = 0.6119$, $\rho^2 = 0.3744$), indicating that psychological factors—such as perceived utility, habit formation, emotional investment, and trust—are important in sustaining digital banking engagement. This finding aligns with prior interpretations for adoption, showing that this group remains behaviorally responsive even in the retention stage.

Similarly, high school graduates showed a moderate and significant positive correlation ($\rho = 0.5550$, $\rho^2 = 0.3081$), implying that behavioral mechanisms like loss aversion and perceived switching costs also shape continued usage within this segment. Their engagement is likely influenced by emotional convenience, platform loyalty, or initial user satisfaction—principles well-supported by behavioral economic theory.

Table 23. Relationship between Behavioral Economics and Digital Banking Retention by Highest Educational Attainment

Group	Sample Size	*p*-value	ρ^2	Spearman's rho (ρ)	Verbal Interpretation
College Graduate	196	0.0000	0.3744	0.6119	Significant - Strong Positive
High School Graduate	145	0.0000	0.3081	0.5550	Significant - Moderate Positive
Postgraduate (Master's/Doctorate)	41	0.7660	0.0023	-0.0479	Not Significant - Very Weak Negative
Vocational Graduate	3	0.0000	1.0000	1.0000	Data is too few

In contrast, postgraduate respondents exhibited a very weak and non-significant negative correlation ($\rho = -0.0479$, $p = 0.7660$). This suggests that behavioral factors may play a minimal role in the retention behavior of this highly educated group. Their continued use of digital banking may be driven instead by rational evaluation of features, efficiency, integration with complex financial needs, or institutional trust. The result is consistent with the earlier findings on adoption, reinforcing the possibility that advanced education corresponds with greater resistance to behavioral biases.

The vocational graduate group displayed a perfect correlation ($\rho = 1.0000$), but with only three respondents, the sample size is too limited to yield reliable or generalizable insights.

To sum it up, behavioral economics significantly influences digital banking retention among users with basic to tertiary education, while its impact diminishes among postgraduate degree holders. These patterns suggest that digital banks should adopt differentiated retention strategies: behaviorally reinforced user experiences may retain college- and high school-educated users, while advanced users may require more logic-driven, high-value propositions to remain engaged.

Relationship between Behavioral Economics and Digital Banking Retention by Source of Income

The correlation analysis in Table 28 shows that behavioral economics has a significant influence on digital banking retention across all income source categories, though the degree of this influence varies meaningfully across subgroups.

Among those employed in the government, the relationship was strong and statistically significant ($\rho = 0.6590$, $\rho^2 = 0.4343$), suggesting that psychological factors such as habit formation, emotional commitment, or perceived institutional stability strongly support continued use of digital banking services within this segment. These users may associate digital

banking with security and convenience tied to their employment routines.

The unemployed group also demonstrated a strong and significant correlation (ρ = 0.6383, ρ^2 = 0.4075). Despite their lower financial activity, this group's retention appears driven by behavioral anchors—perhaps a reluctance to switch, positive past experiences, or emotional attachment to digital banking as a low-cost, accessible option.

Table 24. Relationship between Behavioral Economics and Digital Banking Retention by Source of Income

Group	Sample Size	*p*-value	ρ^2	Spearman's rho (ρ)	Verbal Interpretation
Employed (Private Sector)	167	0.0000	0.2560	0.5059	Significant - Moderate Positive
Allowance (if student)	104	0.0000	0.2372	0.4870	Significant - Moderate Positive
Self-employed	56	0.0000	0.3274	0.5722	Significant - Moderate Positive
Unemployed	30	0.0001	0.4075	0.6383	Significant – Strong Positive
Employed (Government)	28	0.0001	0.4343	0.6590	Significant – Strong Positive

In contrast, self-employed, private sector employees, and students on allowance all showed moderate but still significant positive correlations (ρ ranging from 0.4870 to 0.5722). These groups likely engage with digital banking out of practical need but are also influenced by behavioral triggers such as loss aversion, personalized features, or inertia. For the self-employed, retention may also be tied to autonomy, ease of managing accounts, and time-efficiency—core behavioral priorities for independent earners.

The private sector group (ρ = 0.5059) and student/allowance group (ρ = 0.4870) reflect moderate yet meaningful levels of behavioral engagement. For students, this may stem from digital familiarity, while private sector employees may be influenced by default salary disbursement settings or perceived convenience in high-paced environments.

In totality, these findings depict that behavioral economics underpins retention behaviors across diverse economic roles, with particularly strong influence among the unemployed and government-employed. For financial institutions, this insight supports the development of tailored retention strategies: incentives or loyalty rewards may be especially effective for low-activity or economically constrained users, while functional, habit-reinforcing features (e.g., auto-bill pay, financial summaries) can deepen engagement among professionals and entrepreneurs.

Relationship between Behavioral Economics and Digital Banking Retention by Monthly Gross Income

The Spearman Rho's highlights a declining influence of behavioral economics on digital banking retention as income increases, with significant relationships found primarily among lower- to middle-income earners.

For respondents earning below ₱20,000 and ₱20,000–₱49,999, the relationship between behavioral economics and digital banking retention was moderate and statistically significant (ρ = 0.5937 and ρ = 0.5986, respectively). These findings indicate that individuals in these income brackets are more likely to be influenced by behavioral triggers such as default bias, emotional attachment to a trusted platform, or aversion to switching. The moderate strength of these correlations suggests that behavioral cues can meaningfully sustain long-term usage among these users, likely due to their heightened sensitivity to usability, trust, and perceived security.

Table 25. Relationship between Behavioral Economics and Digital Banking Retention by Monthly Gross Income

Group	Sample Size	*p*-value	ρ^2	Spearman's rho (ρ)	Verbal Interpretation
Below 20,000	171	0.0000	0.3525	0.5937	Significant - Moderate Positive
20,000–49,999	111	0.0000	0.3583	0.5986	Significant - Moderate Positive
50,000–79,999	58	0.0002	0.2272	0.4766	Significant - Moderate Positive
80,000–109,999	31	0.0504	0.1256	0.3544	Not Significant - Weak Positive
110,000 and above	13	0.7486	0.0097	-0.0986	Not Significant - Very Weak Negative

The ₱50,000–₱79,999 group showed a slightly weaker but still significant moderate correlation (ρ = 0.4766, p = 0.0002), pointing to a transitional behavioral pattern. These individuals may retain digital banking use due to convenience and efficiency, but their decisions are likely also influenced by increasing rationality and experience in evaluating alternatives.

However, the trend shifts among higher earners. The ₱80,000–₱109,999 segment exhibited a weak and statistically non-significant correlation (ρ = 0.3544, p = 0.0504), suggesting that behavioral economics has less influence on retention behavior at this income level. Similarly, those earning ₱110,000 and above showed a very weak and non-significant negative relationship (ρ = –0.0986, p = 0.7486), indicating that their continued use of digital banking is not meaningfully driven by behavioral biases.

These results emphasize a consistent pattern seen in adoption: behavioral economics exerts a stronger impact on retention for lower-income users. For this segment, loyalty can be enhanced through habit-based features, nudges, and emotionally engaging platforms. In contrast, higher-income users may rely on logic-driven evaluation, seeking advanced services, integration, or data security—factors that transcend behavioral framing.

Findings

This section presents the summary of the key findings derived from the analysis of data collected through survey responses. The research aimed to explore the influence of behavioral economics on digital banking adoption and retention in the Philippine market. The findings are summarized as follows:

Demographic Profile of Respondents. The demographic profile of the 385 respondents reveals a concentration of younger and middle-income users in the Philippine digital banking landscape. A majority of the participants were aged 20–29 years old (54.03%), followed by 30–39 years (21.04%), while only 3.64% were aged 50 and above. Females comprised 57.66% of the sample, with males at 35.32% and LGBTQIA+ individuals at 7.01%. Regarding educational attainment, 50.91% were college graduates and 10.65% held postgraduate degrees. Most respondents worked in the private sector (43.38%), followed by the unemployed (27.01%) and self-employed individuals (14.55%). The predominant income bracket was below ₱20,000 (44.68%), with only 3.38% earning ₱110,000 and above. These findings suggest that digital banking in the Philippines is largely utilized by young, educated individuals within the lower- to middle-income range, particularly those employed in private institutions.

Respondents' Assessment of Behavioral Economics Factors. The responses revealed a generally neutral stance across the three behavioral economics dimensions examined—loss aversion, reference point (mean = 3.02, SD = 1.35), and framing effects (mean = 3.20, SD = 1.42). On the 5-point Likert scale used in the survey, a score around 3.0 signals neither

agreement nor disagreement, often interpreted as ambivalence or a sign that respondents are still navigating their digital banking experiences without firm behavioral leanings.

Loss aversion, often associated with risk-avoidant financial behavior, appeared to have minimal influence, with only moderate concern expressed over potential losses. Reference point responses also remained neutral, hinting that many users may no longer be relying heavily on traditional banking as a benchmark. Interestingly, framing effects—particularly those emphasizing gains such as waived fees or incentives—elicited slightly more favorable responses, though still within a modest range.

These patterns suggest that while cognitive biases like loss sensitivity and framing do exist, they are not the primary forces shaping user behavior at this stage. Users—especially those with more experience and higher education levels—seem to be moving toward more practical and evaluative decision-making, assessing digital banking services based on usability and performance rather than emotion or habit. This shift does not necessarily imply full rationality, but rather a growing familiarity and cautious confidence in the digital banking space.

Respondents' Assessment of Digital Banking Adoption Factors. With regard to adoption, respondents reported neutral sentiments on all four determinants: perceived usefulness (mean = 3.28, SD = 1.44), perceived ease of use (mean = 3.03, SD = 1.38), subjective norms (mean = 2.82, SD = 1.28), and trust (mean = 2.80, SD = 1.17) —with neutrality here referring to scores near the midpoint of a 5-point Likert scale. While digital banking was seen as somewhat useful for its convenience, overall attitudes did not reflect strong conviction in digital banking's transformative capabilities. This might suggests that interfaces were not always intuitive, social influence was limited, and trust remained uncertain. Ease of use was not firmly established, and subjective norms revealed limited social influence on adoption behavior. Trust remained tentative, with users neither fully assured nor skeptical. This neutrality may reflect early-stage or habitual users who have yet to develop strong attitudes, suggesting room for improvement in service delivery, platform design, and assurance mechanisms.

Respondents' Assessment of Digital Banking Retention Factors. When asked about their experience with digital banking, most users didn't lean strongly in one direction. Results in four indicators of retention score neutral— emotional attachment (mean = 2.78, SD = 1.16), satisfaction (mean = 2.82, SD = 1.24), user experience (mean = 2.93, SD = 1.29), and perceived value (mean = 3.02, SD = 1.33). On a 5-point scale, these numbers suggest that most people felt neutral—neither fully satisfied nor dissatisfied. It's not that they had no opinion, but more that their experiences so far haven't given them a reason to feel strongly either way.

Some said they appreciated the convenience or quick access to funds. A few liked the rewards or promos. But overall, these positives didn't seem to create a solid emotional connection. Satisfaction seemed tied to the basics—getting things done without hassle—but not necessarily anything memorable. Interestingly, people who had used digital banking longer or who had more education tended to rate their experience a bit better, though the difference wasn't dramatic.

What this suggests is that digital banks are doing enough to keep users from leaving—but maybe not enough to make them stay long-term. Building loyalty may require more than just working apps or cashback offers. A stronger focus on personalized service and meaningful interactions might be what nudges users from neutral to loyal.

Significant Differences in Behavioral Economics, Adoption, and Retention Across Demographic Profiles. The PERMANOVA analysis revealed significant differences in behavioral economics, adoption, and retention assessments when grouped by certain demographic variables. Specifically, highest educational attainment ($F = 3.08$, $p = 0.01$) and source of income ($F = 2.17$, $p = 0.05$) emerged as significant, alongside interaction effects like Age × Education ($F = 2.03$, $p = 0.04$), Age × Source of Income ($F = 2.26$, $p = 0.01$), and Gender × Source of Income ($F = 2.26$, $p = 0.02$). Conversely, age, gender, and monthly income inde-

pendently did not yield significant group differences. These findings suggest that digital banking behaviors are shaped more by combinations of socio-demographic factors rather than singular traits, reinforcing the need for multidimensional user segmentation in digital banking strategies.

Significant Relationship Between Behavioral Economics and Digital Banking Adoption. The relationship between behavioral economics and digital banking adoption was statistically significant across most demographic groups, with stronger effects seen among younger respondents, lower-income users, and those with lower educational attainment. Notably, respondents aged below 20 years old (ρ = 0.8108), the LGBTQIA+ group (ρ = 0.8384), and self-employed individuals (ρ = 0.7151) showed the highest correlation coefficients. In contrast, postgraduate degree holders and high-income earners (₱110,000 and above) exhibited weak or non-significant relationships. This suggests that behavioral triggers such as framing, loss aversion, and reference dependency are more influential among digitally native or financially less-empowered users, whereas higher socioeconomic status correlates with more rational, deliberate decision-making.

Significant Relationship Between Behavioral Economics and Digital Banking Retention. Finally, behavioral economics also demonstrated a significant relationship with digital banking retention, though to a slightly lesser extent. Strong correlations were observed among the 40–49 age group (ρ = 0.8750), unemployed individuals (ρ = 0.6383), and government employees (ρ = 0.6590). Moderate correlations existed among most other groups, while the 50 and above age group (ρ = 0.2960) and highest income earners (ρ = –0.0986) showed weak or non-significant relationships. Educational level followed a similar pattern: college graduates (ρ = 0.6119) and high school graduates (ρ = 0.5550) displayed stronger behavioral dependencies than postgraduates. These findings affirm that behavioral economics meaningfully predicts digital banking retention among users with emotional, routine-driven, or economically constrained profiles—supporting tailored engagement strategies that align with users' cognitive and behavioral contexts.

Conclusion

The data reveals that most users are young adults, predominantly female, often college-educated, and earning within the lower to mid-income brackets—many of whom are employed in the private sector. This profile paints a picture of early adopters who are open to using digital financial tools, but whose engagement still appears somewhat tentative or conditional.

On the psychological side, respondents didn't show strong leanings either way when it came to behavioral constructs like loss aversion, reference points, or framing. Across the board, responses hovered around the neutral mark. While certain cues like clear presentation or comparisons with traditional banks showed slightly more influence, no single behavioral trigger stood out. This might mean that users are beginning to assess digital banks on their own terms—perhaps a sign that Filipinos are growing more comfortable, and even rational, in navigating online banking platforms.

When it comes to adoption, users weren't especially convinced nor disapproving. The perceived usefulness and ease of use were acknowledged but didn't evoke strong agreement. Trust in digital banks and influence from peers (subjective norms) were also received neutrally. One way to read this is that digital banking, while accepted in daily life, hasn't yet won over the deeper confidence or enthusiasm of many users.

Same as above, retention factors—emotional attachment, satisfaction, experience, and perceived value—followed the same tone: generally neutral. This could mean that loyalty is still weak and digital banks have work to do in creating long-term, emotionally resonant user experiences.

Significant differences were found, however, when looking at combinations of demographic variables. For instance, educational attainment and source of income played major roles—but more so when paired with age or gender. Rather than viewing age or income alone, it seems digital banking behavior in the

Philippines is shaped by how multiple demographic layers interact. In this sense, user behavior is less about single traits and more about context—who they are, how they earn, and what phase of life they're in.

As for the relationships between behavioral economics and digital banking usage, the link was strong in most groups—especially among younger users, lower-income earners, and the self-employed. Behavioral tendencies like risk sensitivity and emotional framing were clearly present here. Meanwhile, those in the highest income bracket or with postgraduate degrees didn't show the same behavioral patterns. Their decisions might be driven more by logic, product features, or even habit built on long-term banking experiences.

Retention followed a similar but slightly more nuanced trend. Adults aged 40–49, unemployed users, and those in government work showed stronger behavioral influences on retention, hinting at habit formation, routine, or even institutional trust. In contrast, older adults and higher earners were less behaviorally driven, likely maintaining accounts out of necessity or preference, rather than emotion or bias.

Behavioral economics offers a useful lens for understanding digital banking behavior—but only if we consider users in context. Filipino users, especially those new to digital platforms or facing financial constraints, tend to rely more on framing, emotional cues, or habits. But as income rises or education advances, people seem to make decisions based more on analysis than instinct. This shows the need for a layered approach: emotional engagement for new or cautious users, and more feature-driven value for the rational, seasoned ones. Ultimately, banks that understand both the heart and the head of their users may be in the best position to build lasting relationships.

Implications

The results of this study not only confirm the presence of behavioral economic influences on digital banking usage but also raise meaningful considerations for theory development, institutional practice, and public policy. As digital financial services continue to expand in reach and complexity, understanding the deeper psychological drivers behind user behavior becomes increasingly vital—not just for encouraging initial adoption, but for sustaining long-term engagement.

This section discusses the broader implications of the findings along two dimensions: theoretical and practical. Theoretically, the study contributes to the growing body of literature that integrates behavioral economics into financial technology research, offering insights into how cognitive biases and emotional heuristics interact with traditional technology acceptance models. Practically, the findings serve as a guide for digital banks, regulatory bodies, fintech developers, and financial educators in designing behaviorally informed strategies, policies, and programs that are both inclusive and effective.

Theoretical Implications

This study contributes to the evolving discussion on how behavioral economics intersects with digital banking behavior, particularly in developing economies like the Philippines. One of the most notable observations is the neutrality of respondents toward classic behavioral constructs such as loss aversion, reference points, and framing effects. The expected cognitive biases weren't as strongly expressed as some theories might predict. This suggests that while behavioral economics remains a useful lens, its explanatory power might depend on the user's maturity in digital contexts or financial literacy levels. It could also imply that as digital tools become more normalized, emotional or irrational biases begin to fade—making way for a more rational and evaluative mode of decision-making.

Interestingly, the strength of behavioral influence appeared to diminish with increased income and education. Users from higher income brackets and those holding postgraduate degrees showed little to no significant correlation between behavioral economics and their digital banking decisions. This somewhat contradicts broad-stroke assumptions of universal behavioral tendencies and suggests that socioeconomic context moderates the impact of behavioral economics. The study, therefore, adds nuance to existing models, implying that be-

havioral biases might be most active in conditions of uncertainty, limited financial literacy, or early-stage adoption.

Moreover, the findings support the notion that demographic intersections—not singular traits—provide a richer foundation for understanding financial behavior. The interaction of age with education or income with gender had more explanatory power than each variable alone. This opens up space for future research to move toward more intersectional behavioral models, rather than treating demographics as fixed, isolated predictors.

Practical Implications

Digital Banking Providers. For digital banks and financial service providers, these results serve as both a caution and a guide. While digital banking is clearly gaining traction in the Philippines, the users' neutral responses around adoption and retention suggest that many are still "testing the waters." The absence of strong emotional attachment or high satisfaction means that users could easily switch platforms—or worse, disengage—if their expectations aren't met. What this calls for is not just more features, but more meaningful user experiences. Simpler interfaces, real-time support, and personalization could do more for retention than traditional rewards programs.

Behavioral cues—like highlighting security or using time-sensitive offers—might still work, but mainly for specific segments. Younger users, those with lower income, and people who are self-employed or unemployed were more responsive to these behavioral nudges. For them, emotional reassurance, ease of use, and even gamified savings challenges might actually move the needle. On the other hand, for high-income or postgraduate users, persuasion alone probably won't work. These are users who want reliability, advanced financial tools, and well-integrated platforms. Emotional framing may even come off as condescending to them. What they need is logic, not sentiment.

In terms of segmentation, the study urges a rethink. Age and income alone are not enough. Banks need to start building campaigns and products based on overlapping user traits—like young working mothers in the gig economy, or middle-aged professionals with formal education but no time for in-branch services. These micro-segments are more likely to reveal actionable behavior than traditional categories.

Regulators (i.e. Bangko Sentral ng Pilipinas (BSP)). From a policymaking standpoint, institutions like the BSP could benefit from crafting financial literacy campaigns that recognize behavioral triggers among underserved groups. For instance, training materials for self-employed individuals might be more effective if they go beyond explaining fees and instead frame digital banking as a way to build routine and control. Likewise, students receiving allowances could be introduced to nudges and default settings that help build healthy financial habits from an early age.

Financial educators and literacy advocates. the results suggest that standard, one-size-fits-all content might no longer be enough. Since behavioral tendencies like loss aversion and framing effects were more evident among younger, lower-income, and less formally educated users, learning materials for these groups should be designed with these behavioral triggers in mind. It's not just about explaining how digital banking works; it's about shaping behavior in real-world contexts. For example, instead of generic financial planning tips, content could include relatable scenarios like "how to avoid fear-based decisions during online bank outages" or "why digital wallets shouldn't replace budgeting habits."

Also, since those with postgraduate degrees and high incomes appeared less influenced by behavioral biases, financial literacy efforts targeting these users could focus more on rational comparison tools—like cost-benefit calculators or investment risk breakdowns—instead of emotion-driven persuasion. This segment seems to value structure, data, and autonomy, so the tone of educational campaigns might need to be adjusted accordingly.

Another implication for educators is the importance of intersectional targeting. A college graduate in their 40s who is unemployed, for instance, might have very different banking behavior than a 21-year-old college student living on allowances. If advocacy programs want to

make real impact, they need to be more layered—not just by age or income, but by lifestyle and cognitive habits. Behavioral segmentation could become a practical approach for tailoring seminars, webinars, or even TikTok-based learning series that match people's actual psychological and digital realities.

Fintech Start-ups. Start-ups tend to focus heavily on tech features, speed, and branding—but what this study shows is that emotional framing and trust still matter, especially for emerging users. New entrants into the digital banking space might have a better chance at gaining traction if they address behavioral cues early: offer onboarding flows that reduce risk perception, create transparent security messages, and design features that support financial habits like goal-setting or expense tracking.

Start-ups targeting the younger or self-employed market may benefit from gamification strategies, behavioral nudges, or opt-out savings settings—all of which align with the segments that showed higher behavioral responsiveness. For instance, offering an auto-transfer savings tool with encouraging feedback each week could build emotional attachment and increase retention. At the same time, more mature users—those in the upper-income brackets or with postgraduate degrees—may expect sophistication. This group likely won't be impressed by flashy UI alone; they may be looking for seamless integration with business tools, tax management, or multi-currency support.

Also, the neutral overall scores in both adoption and retention suggest there's still a lot of unclaimed user loyalty. Fintech firms—especially the newer ones—have a window of opportunity here. If they can create not just a product, but a behaviorally aligned experience that feels natural, secure, and habit-forming, they might win over users who aren't yet tied emotionally to any one platform.

In summary, the study underscores that understanding digital banking behavior in the Philippines demands a dual lens: one that appreciates the rational dimensions of technology use, and another that deeply considers the behavioral nuances that truly drive adoption and retention. By aligning theoretical insights with real-world application, this study bridges a critical gap between behavioral economics and digital financial inclusion policy and practice.

Recommendation

Based on the insights drawn from the study's findings and implications, this section offers a set of practical and thoughtful recommendations aimed at improving how digital banking is adopted and retained in the Philippine setting. These suggestions are intended for key stakeholders—such as banks, fintech developers, government regulators, educators, and even financial literacy advocates—who play important roles in shaping the future of digital finance.

Enhance behavioral-based digital design among banks. Incorporate features that stimulate habit-building and emotional reinforcement. These may include swipe-to-save tools embedded into the main dashboard, visual savings progress trackers that update weekly, and encouraging in-app messages like "Well done—you've saved ₱500 this week!" to reward consistent behavior and drive user engagement.

Move beyond generic user segmentation. Digital banking platforms should design user pathways based on specific demographic intersections collected at sign-up. For example, working students could be given access to a simplified interface with study-related budgeting templates, while self-employed individuals might receive access to income-versus-expense dashboards, tax calculators, and invoice generation tools. Users with children could be offered a family budgeting module, while OFWs could be onboarded into a remittance-friendly layout with multi-currency features.

Incorporate behavioral science in government-led financial inclusion campaigns. The Bangko Sentral ng Pilipinas (BSP), in partnership with local government units and private partners, should produce localized, behavioral-based educational content. This can include short explainer videos or reels featuring actual market vendors or tricycle drivers demonstrating how digital banks help track daily income and manage expenses. Additionally, downloadable visual guides or comic-style infographics showing safe and smart digital

banking practices can be disseminated through barangay centers and public schools.

Tailor financial literacy education to user behavior and life context. Schools, universities, cooperatives, and NGOs delivering financial education should redesign their modules to include behavioral simulations. For instance, students can participate in decision-based games where they choose between framed financial offers and reflect on why they were persuaded. Lessons should also include real-world topics like how social media promos influence spending, or how loss aversion might lead users to avoid transferring savings. Banks and other institutions can also feature localized story videos, interactive framing exercises, and family-oriented workshops—translate abstract concepts into relatable experiences. Short reels tailored to jeepney drivers or overseas workers illustrate practical budgeting, or mini-games demonstrate loss aversion in everyday decisions. Partnerships with barangay centers engage parents and teens in co-creating budgets, leveraging strong behavioral correlations among younger cohorts to foster lasting understanding and encourage exploration of app features.

Target younger users and informal workers with gamified and habit-forming tools. Fintech platforms should introduce gamified features that reward users for consistency. Examples include digital badges for saving three days in a row, leveling-up mechanics when financial goals are met, or unlocking rewards such as reduced transfer fees after maintaining a weekly transaction habit. These mechanics may be especially effective among students, online sellers, and delivery riders who tend to be highly mobile and digitally immersed.

Advance AI-driven personalization. Advanced AI-driven personalization transforms the app into a proactive financial ally for data-oriented users. Smart dashboards simulate savings scenarios, chatbots offer on-demand product recommendations, and predictive alerts flag overdraft risks for high-income segments, catering to college graduates and postgraduate users who value logical evaluation. By integrating multi-account management and jargon-free security explanations, this initiative supports rational decision-making and reinforces trust among sophisticated digital bankers.

Build sophisticated tools for high-income and highly educated users. Platforms should offer advanced features tailored to rational, data-oriented decision-makers. These might include investment performance dashboards, automatic portfolio rebalancing suggestions, and customizable monthly financial reports. Users in this segment should be given the option to manage multi-account integrations and receive security alerts with detailed, jargon-free explanations of risks and protections.

Address emotional friction points in digital trust-building. Digital banks should visibly embed trust and security messaging within the user interface. For example, before each transaction, a short line may appear stating "This payment is protected by encryption and two-factor authentication." Additionally, platforms may include explainer pop-ups showing how fees are calculated or how transaction history is stored and protected, reducing cognitive ambiguity and supporting informed trust.

Design onboarding flows that match cognitive comfort levels. New users—especially those self-employed or with limited digital exposure—should not be overwhelmed with too many features at once. The onboarding experience should be modular, beginning with simple tasks like "Add your first contact" or "Pay your first bill," followed by layered tutorials that are unlocked as the user grows more familiar. Visual cues, interactive checklists, and voice-guided assistance may also be explored.

For policymakers: recognize the importance of demographic intersections. Future digital finance policies and public campaigns should be crafted with specific behavioral profiles in mind rather than relying on general categories. For instance, instead of "targeting youth," a campaign could be designed for "college-educated females aged 20–29 who are self-employed and managing irregular income." This approach ensures interventions are based on lived experience, not assumptions.

Shift mindset from access to behavioral retention. As most Filipinos now have some form of access to digital banking, the next frontier is retention. Platforms must aim to sustain usage

by turning one-time behaviors into repeat habits. This includes introducing features like personalized nudges when users save consistently, tracking long-term goal progress visually, or celebrating milestones such as one year of active usage. Behavioral retention should now be treated as the core metric of success—not just account activation.

Enhance inclusivity and accessibility. Ensuring offline inclusivity and accessibility addresses barriers faced by data-constrained, low-literacy, and senior citizen/aged users. Toggleable large-text and voice modes reduce navigation hurdles, USSD transaction menus enable feature-phone access without data charges, and zero-rated partnerships with local telcos eliminate cost-related friction. These measures recognize that nearly half of the sample earns below ₱20,000 and may rely on basic devices; by lowering usability obstacles, they support continued engagement and stronger retention among underserved demographics.

Continuous improvement. A continuous feedback framework built on bi-monthly UX labs, in-app micro-surveys, and quarterly "Voice of User" reviews closes the loop on usability challenges. Regular sessions with representative demographic clusters uncover emerging friction points—such as unclear performance flows—while brief post-task surveys capture immediate impressions. By systematically synthesizing lab insights, survey data, and support logs into product roadmaps, this iterative process ensures that design refinements align with user needs and enhance overall satisfaction.

Pursue further research with behavioral and longitudinal dimensions. To deepen understanding and guide future interventions, academic institutions and research agencies should conduct (1) longitudinal studies tracking behavior change over time, especially pre- and post-intervention (e.g., after launching a savings nudge or gamified feature), (2) qualitative interviews to capture user stories and emotional experiences with digital banking, and (3) cross-cultural comparisons to see how behavioral economics applies to other ASEAN economies with similar socioeconomic profiles. This would build a stronger behavioral foundation for evidence-based policymaking and financial product design in the future.

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