**Exploring the Relationship Between Household Income and online Banking Engagement** **in the Sri Lankan context**

**Abstract**

The advancement of digital technology has significantly transformed the global banking sector, with online banking becoming a vital tool for financial accessibility and convenience. Despite Sri Lanka’s increasing digital infrastructure and high general literacy rate, the actual usage of online banking services remains critically low particularly in rural areas. This study investigates the relationship between household income and online banking engagement, aiming to understand how income disparities influence online banking behavior. A quantitative approach was adopted, using a structured questionnaire administered to a sample of 382 bank customers in the Balangoda Divisional Secretariat Division of the Ratnapura District in the Sri Lanka. Data were analyzed using ANOVA to examine the variance in online banking usage across five income categories. The results reveal a statistically significant difference in online banking engagement among different income groups (p < 0.05), with higher-income households demonstrating greater usage. The study concludes that income plays a critical role in shaping digital financial behavior. Therefore, it is recommended that financial institutions and policymakers implement targeted strategies such as digital literacy programs and accessible banking tools tailored to lower-income groups, in order to enhance digital financial inclusion and reduce income-based disparities in online banking usage.

Keywords: Financial inclusion, Financial literacy, Income level, Online banking usage

1. **Introduction**

The rapid evolution of digital technologies has transformed the global banking landscape, offering customers the convenience of online platforms to manage their financial affairs. Online banking, encompassing services such as fund transfers, bill payments, and balance inquiries, has become a key component of modern banking systems (Frankenfield, 2023). While its adoption is increasing in many parts of the world, engagement with online banking remains uneven particularly in developing countries like Sri Lanka, where socio-economic and demographic factors such as household income significantly influence user behavior (Mano et al., 2020).

Household income, a central component of socioeconomic status, is widely recognized as a determinant of access to digital technologies and financial services. Research indicates that individuals from higher-income households are more likely to engage with online banking due to greater access to internet-enabled devices, higher levels of education, and more frequent interactions with formal financial institutions (Gavurova et al., 2019). In contrast, lower-income households often face structural barriers, including limited access to digital infrastructure, lower digital literacy, and mistrust in financial systems, which may hinder their adoption of online banking services (Hashim et al., 2021).

In the Sri Lankan context, although 24 licensed commercial banks offer digital services and mobile banking penetration has risen, actual usage remains critically low with only 1% of customers utilizing online banking services (Central Bank Annual Report, 2021; Mano et al., 2020). This underutilization exists despite the country's relatively high general literacy rate (93%) and growing digital literacy, indicating that other socioeconomic variables including household income may significantly influence online banking behavior (Department of Census and Statistics, 2021; Central Bank, 2018).

Empirical evidence from various studies underscores the correlation between financial capability and online banking engagement. For example, Andreou and Anyfantaki (2019) highlight that financial literacy positively correlates with online banking usage. However, household income often intersects with financial literacy, affecting access to both knowledge and digital tools required for effective engagement. This layered interaction between income, literacy, and access points to a broader, systemic issue that must be unpacked to enhance financial inclusion in digitally developing societies.

In this light, the present study seeks to explore the relationship between household income and online banking engagement, with particular attention to how income disparities may shape online banking behavior. By examining this relationship in the Sri Lankan context especially within under-researched rural areas this study aims to contribute to a nuanced understanding of the socioeconomic determinants of digital financial inclusion. The findings are expected to offer valuable insights for banks, policymakers, and development organizations to design targeted interventions that promote equitable access to online financial services.

1. **Literature Review**

The rise of online banking technologies has created new avenues for financial access, yet the extent of adoption remains uneven across different income groups. Household income is increasingly recognized as a critical determinant in shaping individuals’ engagement with online banking platforms. Existing literature points to a clear disparity in digital financial behavior, often influenced by socio-economic variables such as income, education, and access to technology (Gavurova et al., 2019; Hashim et al., 2021).

Income plays a pivotal role in determining access to digital infrastructure particularly internet-enabled devices and stable connectivity which are prerequisites for engaging with online banking services. Studies indicate that higher-income households are more likely to possess smartphones, computers, and home internet access, all of which facilitate digital financial participation (Central Bank Annual Report, 2018). In Sri Lanka, despite increasing internet penetration with 70.9% of individuals accessing the internet through mobile phones actual online banking usage remains disproportionately low, especially among lower-income groups (Mano et al., 2020).

The digital divide caused by income disparities also affects computer and digital literacy rates, which are essential for navigating online banking platforms. According to national statistics, computer literacy in Sri Lanka has gradually increased, from 24.9% in 2014 to 36% in 2022 (Department of Census and Statistics, 2022). However, these figures obscure underlying income-related differences, where low-income households are less likely to have exposure to digital tools or training, leading to limited engagement with digital financial services (Iit English 2, 2023).

Multiple studies conducted in different regional contexts support the assertion that income positively correlates with online banking usage. Andreou and Anyfantaki (2019) found that individuals with higher financial capacity were more likely to engage in online banking due to greater awareness and trust in digital systems. Similarly, Swindle et al. (2014) identified that low-income consumers, while interested in digital technologies, often lacked the necessary financial and technical literacy to actively use such platforms.

In the Sri Lankan setting, Mano et al. (2020) observed that the usage of e-banking services is significantly lower in rural districts than in urban areas, a disparity that can be attributed in part to income levels. Rural populations, which tend to have lower household incomes, face greater barriers such as lack of internet access, inadequate banking awareness, and limited technical proficiency, all of which inhibit the adoption of online banking.

Despite increased digital banking infrastructure, online banking usage in Sri Lanka remains critically low only 1% of bank customers utilize these services (Central Bank Annual Report, 2021). This underutilization persists even in areas with high general literacy rates, suggesting that income-related constraints may be more influential than previously understood. While prior studies have examined the relationship between financial literacy and online banking behavior (Karunarathna et al., 2023), limited empirical research exists on how income specifically affects online banking engagement, especially in rural or lower-income communities.

This gap underscores the need for focused research on the interplay between household income and online banking usage. By exploring this dynamic within the Sri Lankan context, particularly in underserved areas, this study aims to contribute to both academic understanding and practical strategies for enhancing financial inclusion.

1. **Methodology**

This study uses a quantitative analysis approach to explore the connection between household incomes and online banking usage. The sample consisted of 382 banks customers who lived in the Balangoda Divisional Secretariat Division of Ratnapura district in Sabaragamuwa Province. The sample was derived from a population using a simple random sampling, which sets each individual in the population equal probability of inclusion.

The Census of Population and Housing 2012 has recorded the population aged 20 years and above as 54,623 in the Balangoda Divisional Secretariat Division. To obtain the sample size for the study the Krejcie and Morgan (1970) sample size determination table was adopted which is accepted as the standard for selecting representative samples from large populations, the sample size was 382 respondents.

The study area, Sabaragamuwa Province, was chosen because of its unique demographic and technological features. It is the fifth most populous province in the country (Sri Lanka Census of Population and Housing, 2012) with a total population of 1,928,655. Furthermore, Computer Literacy Statistics (2022) stated that it has the 2nd highest percentage of computer owners and users nationwide, approximately 20.0%. The province's overall literacy rate is 94.8%, and its computer literacy rate is 19.9% which makes it one of the most digitally literate provinces. Notwithstanding these favorable conditions, few researches have been done in the region, especially in Balangoda how income influences online banking behavior. Hence the purposefully chosen location to fill an existing gap in literature.

The research utilized both primary and secondary data sources. Primary data was gathered through structured questionnaires and interviews, administered to the selected participants after informing them in advance. Secondary data were obtained from existing literature, previous research studies, and official publications such as annual reports of the Central Bank of Sri Lanka and the Department of Census and Statistics.

To analyze the relationship between household income and the frequency of online banking usage, an ANOVA test was employed. In this model, the independent variable was individual income level, categorized into five distinct income groups. The dependent variable was online banking usage, which was measured by the number of times individuals used online banking facilities per week. Data analysis was conducted using IBM SPSS (Version 23) and Microsoft Excel to ensure accurate and reliable statistical outcomes

03.1 Hypothesis of the Study

Income level is a fundamental socio-economic factor that significantly influences individuals' access to and engagement with digital financial services (Gavurova et al., 2019; Hashim et al., 2021). Households with higher income levels are more likely to possess internet-enabled devices and exhibit higher digital literacy, which facilitates frequent use of online banking platforms (Andreou & Anyfantaki, 2019). Conversely, individuals in lower-income groups often face structural barriers such as limited access to technology, lower awareness, and a lack of trust in digital systems (Mano et al., 2020; Central Bank of Sri Lanka, 2021). While global studies have consistently shown a positive relationship between income and online banking adoption, the Sri Lankan context particularly in rural areas like Balangoda remains underexplored. Investigating this relationship is crucial for enhancing digital financial inclusion and addressing income-based disparities in banking behavior.

In light of the above discussion, the following hypotheses are proposed:

Null Hypothesis (H₀): There is no significant difference in online banking engagement across different household income levels.

Alternative Hypothesis (H₁):There is a significant difference in online banking engagement across different household income levels.

1. **Results and Discussion**

The results obtained from the research can be described as follows.

Table 01: Summary of demographic profile for users of online Banking

|  |  |  |
| --- | --- | --- |
| **Description** | **Frequency** | **Percentage** |
| **Gender** |  |  |
| Male | 170 | 44.5 |
| Female | 212 | 55.5 |
| **Age group** |  |  |
| 20-29 | 202 | 53 |
| 30-39 | 140 | 37 |
| 40-49 | 28 | 7 |
| 50$\leq $ | 12 | 3 |
| **Monthly Income Level** |  |  |
| 20000 > | 70 | 18 |
| 20 000 - 40 000 | 123 | 32 |
| 40 001 - 60 000 | 93 | 24 |
| 60 001 - 80 000 | 52 | 14 |
| 80 000 < | 44 | 12 |

Source: Survey data (2024)

As for the gender distribution of the online banking users, 170 (44.5%) were men and 212 (55.5%) were women.
Whereas considering the age of respondents, it was divided into 4 broad groups. Only those above 20 years of age were used for this study. Thus, 202 (53%) respondents in the age group of 20-29 years, 140 (37%) in the age group of 30-39 years, 28 (7%) in the age group of 40-49 years and 12 (3%) respondents above the age of 50 years were included in the sample.

According to the income level of the respondents, it was clear that there were 70 people (18%) in the less than 20,000, 123 people (32%) in the 20,000 - 40,000, 93 people (24%) in the 40,001 - 60,000, 52 people (14%) in the 60,001 - 80,000, and 44 people (12%) in the income level above 80,000.

Table 02: Online Banking Usage related data

|  |  |  |
| --- | --- | --- |
| **Description** | **Frequency** | **Percentage** |
| **Number of account ownership** |  |  |
| One bank  | 207 | 54.19 |
| Two Banks  | 159 | 41.62 |
| Three banks  | 13 | 3.40 |
| More than three banks  | 3 | 0.79 |
| **Online bank/s relationship duration** |  |  |
| Less than 1 year  | 59 | 15.45 |
| 1 to 3 Years  | 171 | 44.76 |
| 4 to 7 Years  | 132 | 34.55 |
| More than 7 Years  | 20 | 5.24 |
| **Number of times use online banking in a week** |  |  |
| One time | 91 | 23.82 |
| Two times | 110 | 28.80 |
| Three times  | 52 | 13.61 |
| Four times | 39 | 10.21 |
| Five times | 38 | 9.95 |
| Six times | 32 | 8.38 |
| Seven times | 13 | 3.40 |
| More than seven times | 7 | 1.83 |

Source: Survey data (2024)

From table 2 respondents' accounts held at different banks, the majority of customers prefer to deal with a single bank, and they have all their accounts with that bank as a percentage of 54.15, while 41.6% of the respondents prefer to hold accounts with two banks. Hence, nearly 95% of the respondents don't like to deal with or maintain accounts in over two banks simultaneously, and 3% of the respondents’ desire to maintain individual accounts in individual banks.

Also, table 2 shows the years for which respondents have been receiving online bank/s services, and nearly 44% of respondents have received banking services for 1-3 years, and 34% for 4-7 years. Just 15% of respondents have been receiving banking services only for one year, very few respondents (5%) have been receiving banking services for more than 7 years.

When focusing on the use of online banking services provided by banks by customers in a week, the number of customers who use it only once a week was 91, while the number who use it twice was 110 and the number who use the services three times was 52. Similarly, the number of people who use the services four times was 39, the number who use it five times was 38 and the number who use it six times was 32. In addition, the number of people who use online banking services seven times or more per week was 13 and 7 respectively.

Table 03: ANOVA

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | Sum of Squares | df | Mean Square | F | Sig. |
| Between Groups | 1245.857 | 4 | 311.464 | 1303.977 | .000 |
| Within Groups | 90.049 | 377 | .239 |  |  |
| Total | 1335.906 | 381 |  |  |  |

Source: Survey data (2024)

Based on the table 03, The constructed hypothetical test was performed. The null hypothesis was rejected because the result is P <0.05 (0.00 <0.05). Accordingly, it had to be acknowledged H1, there was a significant difference in online banking engagement across different household income levels.

Table 04:Multiple Comparisons

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| (I) income level | (J) income level | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval |
| Lower Bound | Upper Bound |
| 20000 > | 20 000 - 40 000 | -.829\* | .073 | .000 | -1.03 | -.63 |
| 40 001 - 60 000 | -2.269\* | .077 | .000 | -2.48 | -2.06 |
| 60 001 - 80 000 | -4.038\* | .089 | .000 | -4.28 | -3.79 |
| 80 000 < | -5.614\* | .094 | .000 | -5.87 | -5.36 |
| 20 000 - 40 000 | 20000 > | .829\* | .073 | .000 | .63 | 1.03 |
| 40 001 - 60 000 | -1.440\* | .067 | .000 | -1.62 | -1.26 |
| 60 001 - 80 000 | -3.209\* | .081 | .000 | -3.43 | -2.99 |
| 80 000 < | -4.784\* | .086 | .000 | -5.02 | -4.55 |
| 40 001 - 60 000 | 20000 > | 2.269\* | .077 | .000 | 2.06 | 2.48 |
| 20 000 - 40 000 | 1.440\* | .067 | .000 | 1.26 | 1.62 |
| 60 001 - 80 000 | -1.770\* | .085 | .000 | -2.00 | -1.54 |
| 80 000 < | -3.345\* | .089 | .000 | -3.59 | -3.10 |
| 60 001 - 80 000 | 20000 > | 4.038\* | .089 | .000 | 3.79 | 4.28 |
| 20 000 - 40 000 | 3.209\* | .081 | .000 | 2.99 | 3.43 |
| 40 001 - 60 000 | 1.770\* | .085 | .000 | 1.54 | 2.00 |
| 80 000 < | -1.575\* | .100 | .000 | -1.85 | -1.30 |
| 80 000 < | 20000 > | 5.614\* | .094 | .000 | 5.36 | 5.87 |
| 20 000 - 40 000 | 4.784\* | .086 | .000 | 4.55 | 5.02 |
| 40 001 - 60 000 | 3.345\* | .089 | .000 | 3.10 | 3.59 |
| 60 001 - 80 000 | 1.575\* | .100 | .000 | 1.30 | 1.85 |

Source: Survey data (2024)

The results indicate statistically significant differences in banking usage between all income groups, with p-values less than 0.05 in every comparison. Specifically, respondents in the lowest income category (less than 20,000) reported significantly lower banking usage compared to those in higher income brackets. For example, the mean difference in banking usage between the lowest income group and the highest income group (more than 80,000) is -5.614, indicating a substantial gap in usage. A clear pattern emerges, suggesting that banking usage increases progressively with income. This is evidenced by the consistently positive mean differences when comparing higher income groups to lower ones. The largest disparities are observed between the lowest and highest income earners, reinforcing the idea that income level plays a significant role in determining the extent of engagement with banking services. Additionally, all 95% confidence intervals for the differences exclude zero, further confirming the statistical significance of these results. Overall, the findings highlight a strong positive relationship between income and online banking usage, implying that individuals with higher incomes tend to utilize banking services more extensively, likely due to better financial access, resources, or awareness.

1. **Conclusion**

The findings of this study clearly demonstrate that online banking usage significantly varies across different household income levels. Statistical evidence derived from the ANOVA test confirms a strong positive relationship between income and online banking engagement, with respondents in higher income brackets showing markedly greater usage than those in lower income categories.

This progressive pattern suggests that income is a key determinant of online banking behavior, likely due to differences in access to technology, financial literacy, and familiarity with formal financial institutions. These findings align with previous studies highlighting the digital divide rooted in socio-economic inequality (Gavurova et al., 2019; Hashim et al., 2021).

Given the critical role that income plays in shaping online banking adoption, there is a pressing need for targeted mechanisms and policy interventions that address these disparities. Financial institutions and regulatory bodies should consider implementing income-sensitive digital literacy programs, subsidized access to digital tools, and simplified banking platforms tailored to the needs of lower-income populations. Such initiatives would not only enhance financial inclusion but also support broader socio-economic development by bridging the digital gap in financial services.

Consent

As per international standards or university standards, Participants’ written consent has been collected and preserved by the author(s).

Disclaimer (Artificial intelligence)

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Details of the AI usage are given below:

1.

2.

3.

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