



Financial inclusion in the Digital Era: An empirical analysis of behavioural drivers among undergraduate accounting students

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Abstract

Financial inclusion, particularly in developing economies, has evolved due to technological advancements and the rise of digital financial services, including mobile banking and fintech solutions. This study investigates the behavioural drivers and barriers to financial inclusion among undergraduate accounting students in the digital age, focusing on factors such as year of study, gender, and age. The study employed a descriptive survey of correlational design involving 318 students (38.4% male; 61.6% female; mean age = 20.07 ± 2.50) from universities in South West, Nigeria, selected using a snowball procedure. Data were collected via a validated and reliable structured questionnaire and analysed using descriptive statistics and multiple regression ($p < 0.05$). The regression analysis revealed significant predictors for behavioural drivers ($F = 8.146$, $p < .001$, $R^2 = 7.2\%$), with gender negatively predicting scores ($B = -3.246$, $p = .010$), while age ($B = 2.070$, $p = .020$) and year of study ($B = 1.796$, $p = .030$) were positive predictors. For barriers, the model was significant ($F = 3.148$, $p = .025$, $R^2 = 2.9\%$), with year of study negatively predicting barriers ($B = -3.174$, $p = .015$). The study concludes that demographic factors significantly influence financial inclusion behaviours, highlighting the need for targeted interventions to enhance digital financial literacy.

Keywords: Financial inclusion, digital age, behavioural drivers, barriers, undergraduate accounting students

Introduction

The concept of financial inclusion has significantly evolved in the digital age, driven by technological innovation and the increasing digitisation of financial services. Broadly, financial inclusion refers to ensuring that individuals and businesses, especially those historically excluded, can access affordable and effective financial products and services. This agenda has been particularly important in developing economies, where traditional banking structures remain limited (Allen *et al.*, 2016) [3].

Digital financial inclusion (DFI), often propelled by financial technology (fintech), has emerged as a cornerstone of modern inclusion strategies. Tools such as mobile banking, digital wallets, and internet-based transactions have expanded access to financial services, enabling underserved populations to participate more actively in the economy. The creation of comprehensive indices to measure DFI shows strong positive associations between digital service uptake and expanded access, particularly among youth who adapt readily to new platforms (Banik & Roy, 2023) [9]. Education and technology adoption also play central roles: higher education improves digital financial literacy, empowering more individuals to leverage fintech effectively (Gumilar *et al.*, 2024) [15, 23].

The benefits of digital technologies extend to lowering transaction costs and enhancing socio-economic opportunities. By reducing entry barriers, DFI fosters entrepreneurship, savings, and income growth within low-income contexts (Sahay *et al.*, 2021) [49]. In agricultural communities, for instance, access to digital credit and savings tools has been shown to increase productivity and resilience, thereby alleviating financial exclusion (Li *et al.*, 2022). Similarly, research demonstrates that rural

economies benefit from improved access to credit and reductions in poverty through the adoption of DFI (Ma *et al.*, 2024).

Yet, challenges remain. While DFI reduces inequalities in many contexts, it can also exacerbate disparities if the digital divide is left unaddressed. Limited access to technology, insufficient literacy, and weak regulatory frameworks can expose vulnerable populations to risks such as fraud or financial exclusion (Lawal & Williams, 2023 [35]; Ozili, 2020) [43]. These concerns underline the importance of complementing innovation with strong oversight and consumer protection mechanisms.

One of the key strengths of digital financial services lies in their ability to provide convenient and low-cost financial products via mobile devices and internet platforms. This bypasses traditional barriers such as physical distance from banks and strict account-opening requirements (Lu *et al.*, 2021). Evidence also shows that DFI narrows the rural-urban gap and stimulates entrepreneurship by connecting underserved communities to opportunities (Fernandes *et al.*, 2020) [18]. By expanding access to saving, investing, and income-generating tools, DFI strengthens the foundations of a more inclusive economy.

Digital financial literacy has emerged as an indispensable driver of success for fintech adoption. It ensures that users not only access digital platforms but also understand and maximise their benefits. Research suggests that improved literacy reduces risks, builds trust, and strengthens long-term financial well-being (Choung *et al.*, 2023 [12]; Hasan *et al.*, 2022) [25]. Likewise, fintech lending platforms have demonstrated significant potential in expanding access to credit in emerging markets where conventional systems are

limited, thereby broadening economic participation (Khera *et al.*, 2022)^[33].

Research Questions

1. To what extent do year of study, gender, and age range collectively predict the behavioural drivers of financial inclusion among undergraduate students?
2. What is the relative contribution of each independent variable (year of study, gender, and age range) to the behavioural drivers of financial inclusion, and how do these relationships differ in direction and significance?
3. How effectively do years of study, gender, and age range collectively explain the variance in perceived barriers to financial inclusion among undergraduate students?
4. Which specific independent variables significantly influence perceived barriers to financial inclusion, and what is the nature of these relationships?

Literature Review

Defining Financial Inclusion in the Digital Era

Financial inclusion in the digital era is defined as the accessibility and efficient use of financial services through digital platforms, which integrate technology with finance to overcome barriers faced by the unbanked and underbanked. The United Nations first advanced the inclusive finance framework in the mid-2000s, but it has since evolved into digital inclusive finance—using innovations such as mobile banking and e-wallets to deliver financial services more widely and at lower costs (Xu *et al.*, 2024^[50]; Sahay *et al.*, 2021)^[49]. Empirical evidence highlights the role of banks and fintech institutions in expanding financial inclusion. Services like mobile banking bridge gaps between formal institutions and everyday users, especially in contexts with limited physical infrastructure (Sumaylo *et al.*, 2022).

Research consistently links digital finance adoption to economic growth in emerging markets, underscoring its transformative impact on developing economies (Khan *et al.*, 2022^[32]; Khera *et al.*, 2022)^[33]. However, access alone does not equal inclusion. As Jonker and Kosse (2022)^[29] argue, actual usage of digital services—such as transactions, savings, and credit applications—is critical. This makes digital literacy a necessary complement to technology provision. Studies confirm that as users become more financially literate, their usage of services grows, deepening financial inclusion (Jimoh & David, 2024^[28]; Okičić & Jukan, 2023)^[42].

Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM), developed by Davis in the 1980s, remains a foundational framework for understanding user adoption of digital finance. The model emphasises perceived usefulness (PU) and perceived ease of use (PEOU) as primary determinants of behavioural intention to use technology (Atmoko *et al.*, 2021)^[4]. Its relevance has been tested across education, healthcare, and finance, showing its robustness across contexts (Granić & Marangunić, 2019)^[21]. Over time, TAM has been extended to incorporate constructs such as trust, social influence, and institutional support. Salloum *et al.* (2019), for instance, demonstrated its value in e-learning contexts when enriched with external variables.

Similarly, Radić *et al.* (2024) found that external factors like training and complexity strongly affect PEOU in enterprise software adoption. In healthcare, research shows that

institutional support and training significantly shape technology acceptance, suggesting parallels for financial contexts where trust and regulation play comparable roles (Kim *et al.*, 2015). TAM has also proven adaptable across cultures. Studies in Africa reveal that local social and institutional factors modify adoption behaviours, indicating the importance of tailoring models to specific user environments (Bothma & Mostert, 2023^[11]; Kobane, 2023). In digital finance, TAM thus provides a flexible framework to examine how behavioural drivers—such as trust and literacy—interact with contextual realities.

Drivers of Digital Financial Inclusion

Digital literacy is a core determinant of successful adoption. It equips individuals to navigate platforms, manage personal finances, and assess risks effectively. Users with higher literacy levels perceive services as easier to use and more beneficial, aligning with TAM's predictions (Azeez & Akhtar, 2021^[6]; Dewmini *et al.*, 2023). Evidence shows that digital literacy also moderates the effect of PEOU, meaning that literate users adapt more quickly to innovations (Cuong *et al.*, 2025)^[13]. Trust is equally critical. Users who trust service providers are more likely to adopt and sustain usage, while distrust deters engagement. Trust often emerges from positive user experiences and reliable institutional frameworks (Abdulkareem & Oladimeji, 2024)^[1]. Studies confirm that perceived trust mediates the relationship between user attitudes and intention to adopt fintech, amplifying the role of transparent and secure service design (Aziz *et al.*, 2019^[7]; Sari *et al.*, 2023).

Perceived ease of use (PEOU) links directly to user satisfaction and adoption intentions. Research shows that when services are user-friendly, they enhance perceived usefulness and encourage sustained engagement (Raza *et al.*, 2017)^[47]. This effect is consistent across mobile banking, e-wallets, and digital payments, making usability design a vital adoption driver (Ruangkanjanases *et al.*, 2021^[48]; Patnaik *et al.*, 2023)^[44]. Financial awareness, which encompasses general literacy and knowledge of digital products, further strengthens inclusion. Informed users make more strategic decisions, manage risks better, and achieve stronger financial outcomes. For SMEs in particular, higher awareness correlates with improved financial performance (Kusumawardhani *et al.*, 2023^[34]; Alharbi *et al.*, 2021)^[2].

Barriers to Digital Financial Inclusion

Despite its potential, DFI faces barriers that can undermine progress. Cybersecurity concerns are a major deterrent. Risks such as data breaches and fraudulent activities raise fears among users, particularly those with low digital literacy (Yudina *et al.*, 2024). Without robust protections, public confidence in fintech diminishes, slowing adoption. The complexity of systems is another significant barrier. When platforms are overly sophisticated, users feel overwhelmed, leading to alienation rather than empowerment. Research highlights that complexity often exceeds users' literacy, resulting in disengagement and poor outcomes (Dewmini *et al.*, 2023; Normawati *et al.*, 2021). Lack of trust in digital institutions also obstructs adoption. In the absence of strong frameworks for consumer protection and transparency, individuals hesitate to adopt digital services (Ozili, 2020^[43]; Obiora & Ozili, 2024)^[41]. Establishing trust through regulatory oversight is, therefore,

crucial for advancing inclusion. Economic constraints further exacerbate exclusion. Low-income populations often cannot afford the devices or connectivity required for digital finance. High initial costs, fees, and the digital divide disproportionately marginalise vulnerable groups (Rahayu *et al.*, 2022 ^[46]; Gosal & Nainggolan, 2023) ^[19]. This perpetuates cycles of limited literacy, low adoption, and financial exclusion (Shrestha *et al.*, 2023). Together, these barriers demonstrate that while DFI is transformative, it is not automatically inclusive. Addressing them requires a balance of innovation, education, regulation, and affordability to ensure that all groups can benefit equally.

Methodology

Research Design

This study adopted a quantitative research design, specifically a descriptive survey, to empirically investigate the behavioural drivers and barriers influencing financial inclusion in the digital era among undergraduate accounting students. The descriptive survey design was considered most appropriate because it permits the systematic collection of data from a relatively large group, followed by statistical analysis that can reveal patterns, trends, and relationships within the data (Demirgüç-Kunt *et al.*, 2018) ^[14]. By employing this design, the study was able to capture both the breadth and depth of financial behaviours in a population directly affected by technological transformations in financial services.

Population and Sampling

The population of the study comprised all undergraduate accounting students enrolled in universities offering accredited programmes in accounting within the selected region. Given the large and diverse nature of this population, a sample of 318 students was determined to provide adequate representation and allow for generalisation of findings.

The sampling process followed a multistage approach. In the first stage, three universities were randomly selected from a comprehensive list of accredited institutions. From each of these universities, the Faculty of Management Sciences (or equivalent) was identified, and the Department of Accounting was purposively selected, since it housed the population of interest. To further refine the selection, proportionate stratified random sampling was used to ensure that students from all academic levels, ranging from Year One to Year Four, were included in the sample in proportion to their actual numbers in each department. Within these strata, simple random sampling was then applied to select individual respondents. This multistage method provided both diversity and fairness in representation across demographic categories such as gender, age, and year of study.

Instrumentation

Data for the study were gathered using a structured questionnaire developed by the researchers after a thorough review of literature on financial inclusion and behavioural factors influencing the adoption of digital finance solutions (Banik & Roy, 2023 ^[9]; Gumilar *et al.*, 2024) ^[23]. The questionnaire was organised into three major sections. The first section elicited demographic information from respondents, including age, gender, year of study, and access to digital devices. The second section focused on

behavioural drivers of financial inclusion, such as digital literacy, trust in technology, perceived ease of use, and financial awareness. The third section dealt with barriers to financial inclusion, including cybersecurity concerns, lack of trust, high transaction costs, complexity of digital platforms, and economic constraints. All items in Sections Two and Three were constructed on a five-point Likert scale, ranging from 1 (“Strongly Disagree”) to 5 (“Strongly Agree”), thereby providing a uniform quantitative scale for measuring attitudes, perceptions, and experiences.

To ensure that the research instrument was both valid and reliable, multiple measures were taken. Content validity was established through consultation with academic experts in the fields of accounting, behavioural finance, and research methodology, who reviewed the items to confirm that they adequately represented the constructs being measured. A pilot study was then conducted with 30 students who were not part of the final sample, enabling the researchers to test the clarity, comprehensibility, and structure of the items. Feedback obtained during this pilot stage led to minor revisions that improved the overall usability of the instrument. For reliability, Cronbach’s alpha was employed to test internal consistency across items in the questionnaire. The analysis yielded a coefficient of 0.87, well above the generally accepted threshold of 0.70, indicating that the instrument was highly reliable for the purposes of the main study (Grohmann *et al.*, 2018) ^[22].

Data Collection Procedure

The data collection procedure spanned a period of four weeks. Questionnaires were distributed in two formats: physical copies administered during lectures for students who could be reached in person, and online survey links sent securely to those who were unavailable physically. This dual approach ensured maximum coverage and response. Prior to participation, students were provided with clear information about the study, and their informed consent was obtained. Respondents were assured that their participation was voluntary and that their responses would remain confidential through anonymisation of data.

Data Analysis

For data analysis, both descriptive and inferential statistical methods were employed, using the Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics such as means, standard deviations, frequencies, and percentages were used to summarise demographic characteristics and highlight general patterns in behavioural drivers and barriers. Inferential analyses included Pearson’s correlation, which examined the relationships among the key variables, and multiple regression analysis, which tested the predictive power of independent demographic variables (age, gender, year of study) on both behavioural drivers and barriers to financial inclusion. A statistical significance level of $p < 0.05$ was adopted, meaning that results with a probability value less than five per cent were regarded as statistically significant (Allen *et al.*, 2016 ^[3]; Evans, 2018) ^[17].

Ethical Considerations

The study also strictly adhered to ethical standards governing research involving human participants. All respondents gave informed consent, participation was entirely voluntary, and confidentiality was protected by

anonymising responses during data processing and analysis. In addition, the research protocol received formal approval from the relevant departmental ethics committee before commencement.

Results

Table 1: Summary of Multiple Regression Analysis on composite contributions of Independent Variables (Year of Study, Gender, Age range)

ANOVA ^a						
Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	2842.407	3	947.469	8.146	<.001 ^b
	Residual	36520.071	314	116.306		
	Total	39362.478	317			
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson	
	.269 ^a	.072	.063	10.78452	1.935	

a. Dependent Variable: Behaviour drivers of financial inclusion among undergraduate students

b. Predictors: (Constant), Year of Study, Gender, Age range

Table 1 presents the results of a multiple regression analysis aimed at understanding the impact of various independent variables—namely, year of study, gender, and age range—on the dependent variable related to behaviour drivers of financial inclusion among undergraduates. The analysis yielded a significant regression model with an F-value of 8.146 and a p-value less than .001, indicating strong predictive capability. The regression explained approximately 7.2% of the variance in the behaviour drivers, as shown by the R Square value. The Durbin-

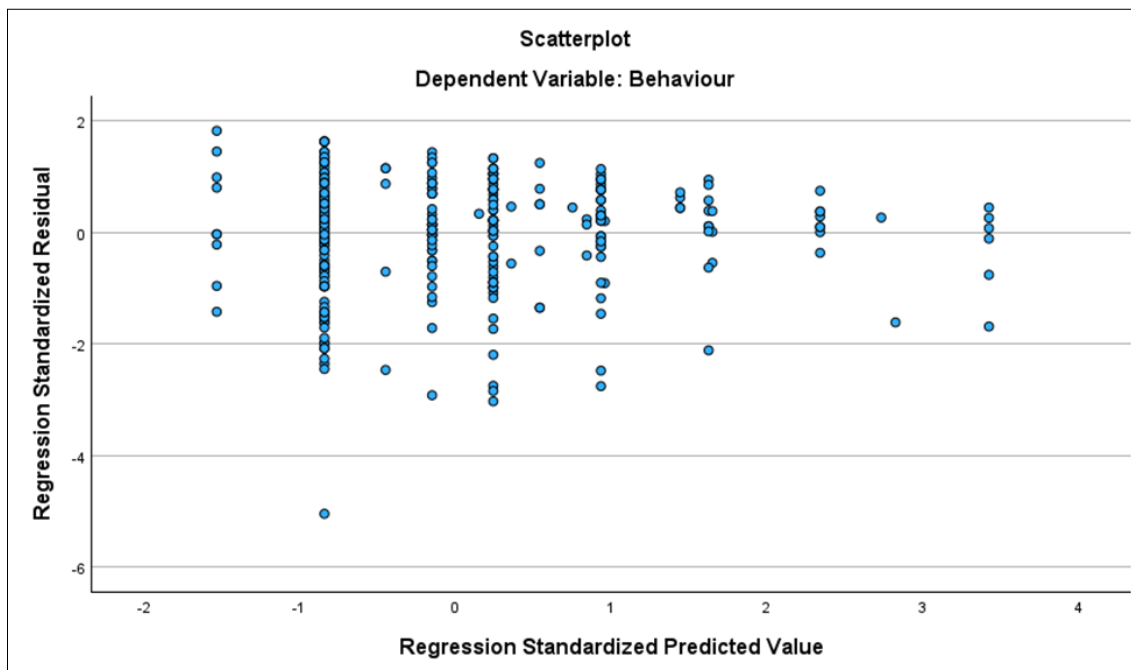
Watson statistics of 1.935 suggest that autocorrelation in residuals is not a concern.

Table 2: Summary of the Multiple Regression Analysis showing the Relative contribution of the Independent Variables (Year of Study, Gender, Age range)

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
	(Constant)	77.970	3.030				25.730
Gender	-3.246	1.249	-.142	-2.600	.010	.992	1.008
Age range	2.070	.888	.136	2.331	.020	.868	1.153
Year of Study	1.796	.825	.127	2.176	.030	.872	1.147

a. Dependent Variable: Behaviour driver

Table 2 presents the results of a multiple regression analysis examining the influence of independent variables (Year of Study, Gender, and Age Range) on a dependent variable. The constant indicates a baseline score of 77.970. Gender has a negative unstandardized coefficient of -3.246, suggesting that being male is associated with lower scores. Conversely, Age Range and Year of Study both show positive contributions, with coefficients of 2.070 and 1.796, respectively. The significance values indicate that Gender and Age Range are statistically significant predictors, while Year of Study is marginally significant, highlighting the importance of these variables in the analysis.



The scatterplot shows standardised residuals plotted against standardised predicted values for the dependent variable *Behaviour*. The residuals appear randomly scattered around zero without a clear pattern, indicating that the assumptions of linearity and homoscedasticity are reasonably met.

No strong funnel shape or curvature is visible, suggesting constant variance of errors. However, a few points lie further from the cluster, indicating possible outliers. Overall, the plot supports the adequacy of the regression model, with residuals distributed randomly across predicted values.

Table 3: Summary of Multiple Regression Analysis on composite contributions of Independent Variables (Year of Study, Gender, Age range)

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2694.608	3	898.203	3.148	.025 ^b
Residual	89605.870	314	285.369		
Total	92300.478	317			
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
	.171 ^a	.029	.020	16.89287	2.027

a. Dependent Variable: Barriers to financial inclusion
b. Predictors: (Constant), Year of Study, Gender, Age range)

Table 4: Summary of the Multiple Regression Analysis showing the Relative contribution of the Independent Variables (Year of Study, Gender, Age range)

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	45.268	4.747		9.537	<.001		
	Gender	2.768	1.956	.079	1.416	.158	.992	1.008
	Age range	-.072	1.391	-.003	-.052	.959	.868	1.153
	Year of Study	-3.174	1.293	-.146	-2.455	.015	.872	1.147

a. Dependent Variable: Barriers

Table 4 presents the results of a multiple regression analysis examining the influence of independent variables such as year of study, gender, and age range on a dependent variable. The constant value is significant, indicating a baseline effect of 45.268. Gender shows a positive coefficient but is not statistically significant, while the age range has a negligible negative contribution. Notably, the year of study exhibits a significant negative impact, suggesting that as students progress through their studies, it may correlate with a decrease in the dependent variable. The collinearity statistics indicate no multicollinearity concerns among the variables.

Discussion

Influence of Demographics on Behavioural Drivers

The findings indicate that gender and age range significantly influence financial inclusion behaviours, while year of study exerts a more modest effect. The negative influence of gender, with males demonstrating lower behavioural drivers, aligns with previous research highlighting gender disparities in financial attitudes and literacy (Kara *et al.*, 2018) [31]. Female students may be more inclined toward careful financial management and cautious adoption of digital services, thereby reporting stronger behavioural engagement. Similarly, the positive role of age reflects evidence that older individuals exhibit higher levels of financial awareness and digital adaptability compared to younger counterparts (Powell *et al.*, 2023) [45]. The contribution of the year of study suggests that extended exposure to higher education gradually improves students’ digital financial literacy and confidence. This finding resonates with literature emphasising the role of academic progression and peer influence in shaping digital financial behaviours (Handayani *et al.*, 2021) [24]. Together, these demographic variables confirm that financial inclusion is not only a technological or institutional issue but also a socio-demographic phenomenon influenced by experience and maturity.

Table 3 presents the findings from a multiple regression analysis investigating the relationship between barriers to financial inclusion and various independent variables, including year of study, gender, and age range. The analysis indicates a statistically significant regression model, with an F-value of 3.148 and a significance level of .025. The model explains a modest portion of the variance in barriers to financial inclusion, as suggested by an R-squared value of .029. Additionally, the results include various statistical metrics, such as the mean square of the regression and residual, along with the Durbin-Watson statistics to assess independence.

Barriers to Financial Inclusion

The results further highlight that barriers to digital financial inclusion are perceived differently depending on academic exposure. Students at lower levels of study reported greater barriers, including concerns about cybersecurity, complexity, and economic costs. These barriers are well documented in the literature, particularly in low- and middle-income contexts where weak consumer protections and financial literacy gaps persist (Yudina *et al.*, 2024; Ozili, 2020) [43].

Interestingly, gender and age range were not significant predictors of barriers, suggesting that structural issues, such as affordability and regulation, may overshadow personal characteristics when it comes to challenges. This finding is consistent with Iqbal and Sami (2017) [26], who note that access to financial services often depends on institutional quality rather than individual traits. The observed decline in barriers as students’ progress academically reinforces the importance of targeted financial education programs, which can mitigate perceptions of complexity and build trust in digital platforms (Grohmann *et al.*, 2018) [22].

Integration with Broader Literature

The study’s findings align with broader research demonstrating that psychosocial factors—such as self-efficacy (Bandura, 1997) [8], economic status (Demirgüç-Kunt *et al.*, 2018) [14], and access to technology (Donovan, 2012) [16]—interact with demographic characteristics to influence financial behaviours. Younger individuals often face greater hurdles due to limited financial literacy and weaker financial habits (Jaya, 2022), while older and more advanced students appear better positioned to engage with digital financial services.

The emphasis on trust and literacy as recurring themes resonates strongly with global evidence. Trust deficits, often linked to fears of fraud and weak regulation, remain a critical challenge to adoption (Obiora & Ozili, 2024) [41]. Similarly, inadequate literacy perpetuates exclusion by

preventing users from fully understanding or utilising financial technologies (Azeez & Akhtar, 2021^[6]; Shrestha *et al.*, 2023). As such, addressing barriers requires more than technological advancement; it demands regulatory safeguards, transparent practices, and inclusive educational initiatives.

Overall, the results underscore the multi-layered nature of digital financial inclusion. While demographics shape behavioural drivers, structural barriers require systemic interventions. This finding reinforces calls for holistic models of inclusion that combine individual, institutional, and technological dimensions (Allen *et al.*, 2016^[3]; Evans, 2018)^[17].

Conclusion

This study examined behavioural drivers and barriers influencing financial inclusion in the digital age among undergraduate accounting students. The findings demonstrate that demographic factors, specifically gender, age, and year of study, significantly shape behavioural engagement with digital financial services. Female students, older students, and those at more advanced academic levels exhibited stronger behavioural drivers, highlighting the importance of maturity, experience, and exposure to financial education in shaping digital financial practices.

At the same time, barriers such as cybersecurity concerns, lack of trust, complexity, and economic constraints continue to hinder full participation in digital finance. Interestingly, the year of study emerged as the only demographic factor significantly reducing perceived barriers, suggesting that academic progression plays a critical role in lowering students' sense of exclusion. These findings align with broader global evidence that financial inclusion is not merely a technological phenomenon but a socio-demographic and institutional one. Demographic factors interact with psychosocial variables such as self-efficacy, financial literacy, and trust, as well as with external conditions including institutional quality and regulatory safeguards.

Thus, promoting digital financial inclusion requires a holistic approach: strengthening digital literacy, enhancing trust through transparent and regulated systems, simplifying user interfaces, and addressing affordability challenges for low-income groups. For policymakers, universities, and financial institutions, the implications are clear. Building capacity through targeted financial education programs, coupled with systemic reforms in digital finance regulation and accessibility, can significantly advance financial inclusion. By fostering an environment where young adults are both capable and confident in using digital financial platforms, stakeholders can contribute to a more inclusive and equitable financial ecosystem.

Future research could extend this study through longitudinal approaches that track how attitudes and behaviours evolve over time, particularly as fintech innovations continue to reshape financial landscapes. Expanding beyond undergraduate accounting students to include broader populations would also enhance generalisability and deepen understanding of digital financial inclusion across diverse demographic groups.

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