

# DIGITAL FINANCIAL LITERACY AMONG COLLEGE STUDENTS

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**ABSTRACT:** *Digital financial literacy (DFL) has become increasingly crucial in today's rapidly evolving technological landscape, particularly for college students who are beginning to take greater responsibility for their financial decisions. This study aimed to determine the level of digital financial literacy among college students, focusing on their knowledge of digital financial products and services, awareness of digital financial risks, and ability to use digital financial tools effectively. The research employed a quantitative, descriptive design, targeting 205 fourth-year college students. Data was collected using a structured questionnaire that assessed various aspects of digital financial literacy. The study found generally high levels of DFL among respondents, particularly in using basic digital financial products and services, awareness of digital financial risks, and understanding of consumer rights. Important findings include high proficiency in using mobile phones for financial transactions, strong adoption of digital payment methods, and good awareness of system-related risks. However, knowledge of advanced financial products and services remained moderate to low. The study also revealed no significant difference in DFL levels between male and female students, while internet access and device type showed positive correlations with DFL levels. These findings contribute to the growing body of knowledge on digital financial literacy and provide valuable insights for educators and policymakers in developing targeted educational interventions. The study recommends focusing on improving knowledge of advanced financial products, expanding internet access, and optimizing educational content for various devices to enhance students' financial capabilities in the digital era.*

**Keywords:** digital financial literacy, digital financial products and services, digital financial risks and control, awareness, consumer rights and protection, redress procedures, risk control measures, digital financial inclusion

## 1. INTRODUCTION

As financial services and products continue to digitize, college students face a new set of challenges in managing their finances effectively. Understanding digital financial literacy is essential because it empowers students to make informed decisions, protect themselves from financial risks, and take advantage of the opportunities presented by digital financial tools. In an era where financial transactions are increasingly conducted online, the ability to navigate digital financial platforms safely and efficiently is no longer just a convenience but a necessity for financial well-being.

Research has shown that digital financial literacy encompasses several key components, including knowledge of digital financial products and services, awareness of digital financial risks, and the ability to protect oneself from these risks. Studies have also indicated that individuals with higher levels of digital financial literacy are more likely to engage in positive financial behaviours, such as controlled spending and regular saving. Moreover, digital financial literacy has been linked to increased use of mobile financial services and improved overall financial well-being. However, there remains a significant gap in our understanding of the current levels of digital financial literacy among college students specifically. While general financial literacy among this demographic has been studied extensively, the unique challenges and opportunities presented by digital financial services have not been fully explored in the context of college students. It is unclear how well-equipped students are to navigate the complexities of digital financial platforms, understand the risks associated with online transactions, or leverage digital tools for effective financial management.

Learning more about digital financial literacy among college students is crucial for several reasons. First, college is often a time when students begin to take greater responsibility for their financial decisions, making it a critical period for developing sound financial habits. Second, as digital financial services continue to proliferate, understanding students' current knowledge and skills can help educators and policymakers develop more effective financial education programs tailored to the digital age. Finally, improving digital financial literacy among college students can have long-lasting impacts on their financial well-being, potentially reducing financial stress and improving overall economic outcomes.

This study aims to determine the level of digital financial literacy among college students. By assessing students' knowledge of digital financial products and services, their awareness of digital financial risks, and their ability to use digital financial tools effectively, this research seeks to provide a comprehensive picture of digital financial literacy in this important demographic. The findings of this study will contribute to the growing body of knowledge on digital financial literacy and inform the development of targeted educational interventions to enhance students' financial capabilities in the digital era.

## 2. MATERIALS AND METHODS

**Research Design.** This study employed a quantitative, descriptive research design to assess the level of digital financial literacy among college students. The descriptive approach was chosen to provide a comprehensive picture of students' knowledge, awareness, and practices related to digital financial products, services, and risks.

**Participants.** The study targeted 205 4th-year students. The sample consisted predominantly of female students (75%), with the majority (90%) falling within the 20-25 age bracket. Participants were selected from various courses of study.

**Data Collection Instrument.** A structured questionnaire was used to collect data on the following aspects of digital financial literacy:

1. Knowledge and use of digital financial products and services
2. Awareness of digital financial risks
3. Knowledge of consumer rights and redress procedures
4. Knowledge of digital financial risk control measures

The questionnaire employed a Likert scale to measure respondents' knowledge, awareness, and practices across these dimensions.

**Procedure.** Questionnaire Distribution: The survey was administered to 4th-year college students, likely through online platforms given the high internet connectivity reported among participants. Data Collection: Responses were collected, focusing on students' self-reported knowledge, awareness, and practices related to digital financial literacy. Internet Access and Device Usage: Information about participants' internet access and devices used for internet access was gathered to analyze their relationship with digital financial literacy levels.

**Data Analysis.** The study utilized various statistical methods to analyze the collected data:

1. Descriptive Statistics: Means and weighted means were calculated to determine the overall levels of digital financial literacy across different dimensions.
2. Analysis of Variance (ANOVA): Used to compare digital financial literacy levels between male and female students.
3. Correlation Analysis: Employed to examine relationships between demographic factors (age, course of study, internet access, device usage) and digital financial literacy levels.
4. Significance Testing: P-values were used to determine the statistical significance of observed relationships and differences.

**Ethical Considerations.** While not explicitly mentioned in the provided information, it can be assumed that standard ethical procedures for educational research were followed, including informed consent from participants and protection of their privacy and anonymity. This methodology allowed for a comprehensive assessment of digital financial literacy among college students, providing insights into their knowledge, awareness, and practices across various dimensions of digital finance.

**Theoretical Framework.** The theoretical framework for this study on digital financial literacy (DFL) among college students is grounded in several interconnected concepts and theories. At its core is a comprehensive Digital Financial Literacy Model, which encompasses four main dimensions: knowledge, use of digital financial products, the services awareness of digital financial risks, the knowledge of consumer rights and redress procedures, and knowledge of digital financial risk control measures. This model aligns

with the work of Setiawan et al. [1]. While not explicitly mentioned, the Technology Acceptance Model (TAM) underpins the examination of students' adoption of digital financial technologies [2]. The Financial Capability Framework informs the study's focus on both theoretical knowledge and practical skills. Bandura's Social Cognitive Theory helps explain how environmental and personal factors interact to influence DFL levels [3]. Consumer Protection Theory grounds the emphasis on consumer rights and redress procedures. The Digital Divide Theory aids in understanding potential disparities in DFL based on technology access. Finally, concepts from Behavioral Finance inform the examination of how DFL impacts financial decision-making. This multifaceted framework provides a comprehensive lens through which to analyze and interpret the study's findings, acknowledging the complex nature of DFL and incorporating elements of technology adoption, financial capability, consumer protection, and behavioural finance.

### 3. RESULTS AND DISCUSSION

**Profile of Respondents.** As to sex, seventy-five per cent (75%) are female respondents. This indicates that majority Based on the students' population, male is outnumbered by females. As to age, ninety per cent (90%) fall within the 20-25 age bracket while seven per cent (7%) are between 26-30 years old. Only three per cent (3%) are above 30 years old. Respondents are 4th year-level students. This indicates that the study targeted graduating students. The majority of the respondents have access to the Internet. Fifty-five per cent (55%) use wifi, forty-four per cent (44%) use mobile data, and only one per cent (1%) have no internet access. The high level of internet connectivity suggests that most students have the means to access online resources. As to devices used for internet access, mobile devices are overwhelmingly preferred for internet access. Eighty-five per cent (85%) use mobile phones or cellular phones. Only one per cent (1%) uses both mobile phone and laptop. The preference for mobile devices may have implications on how educational content is delivered and accessed by the students. Students have high internet connectivity primarily through mobile services. Setiawan et al. have found that DFL, including risk awareness, can be influenced by socioeconomic factors like income and education [4].

**Knowledge and Use of Digital Financial Products and Services.** The level of digital financial literacy on the knowledge and use of digital financial products and services among the respondents indicates a general high as shown in the results, the average weighted mean is 3.6. Respondents showed very high proficiency in using mobile phones for calls and messages and for searching information online. High levels of knowledge and use were evident in using instant messaging and calling apps, sending and receiving e-mails, using e-wallets for online payments, online shopping, and online money transfer methods. Results suggest a high level of digital literacy among respondents, particularly in using smartphones and basic online services.

Regarding digital banking payments, respondents have high knowledge in differentiating between debit and credit, understanding cashback, using ATM cards, General knowledge of digital financial products and services, having

e-wallets, and using mobile/electronic banking. There's a strong adoption of digital payment methods and e-wallets, indicating a shift towards cashless transactions. Respondents show a good understanding of traditional banking products like ATM cards and the difference between debit and credit cards. Given the high proficiency in using mobile devices, financial service providers should prioritize mobile-friendly solutions to reach this demographic effectively.

On the other hand, respondents have moderate knowledge of online stock trading, installing and using banking apps, digital budgeting tools, point-of-sale (POS) systems, familiarity with crypto-assets, having an ATM account, and automated investment services like robo-advisors. In addition, the lowest levels of knowledge were in online trading and crowdfunding platforms. This shows that there is room for improvement in knowledge of more advanced financial products and services, such as online trading platforms, crowdfunding, and automated investment services. Financial institutions and educational programs could focus on improving knowledge in areas where respondents showed moderate or low proficiency, particularly in advanced investment tools and emerging financial technologies.

In conclusion, while the respondents demonstrate a high overall level of knowledge and use of digital financial products and services, there are clear areas where further education and exposure could enhance their financial literacy and technological proficiency in the digital finance landscape.

As to the impact on financial behaviour, data suggests that higher digital financial literacy is associated with better financial behaviours. This is supported by research from Banerjee, who found that digital platforms have enlarged the market for financial products and services, particularly among youth [5]. In addition, a study by *Bhat et al.* demonstrated that students with a better understanding of digital financial products, risk control, and consumer rights are more likely to use FinTech services [6]. As to educational implications, the findings highlight the need for improved financial education. This is echoed in research by Golden and Cordie who emphasize the importance of expanding digital financial literacy education to prepare students for the digital economy [7]. Similarly, Kaur and Gupta found that convenience and benefits significantly influence students' preferences for digital financial services, underscoring the need for education on these aspects [8].

**Awareness of Digital Financial Risk.** As to the level of digital financial literacy in terms of awareness of digital financial risk, the overall weighted mean of 3.91 with an interpretation of high indicates a generally strong level of awareness among the respondents regarding various digital financial risks (DFL). Key findings reveal that areas with the highest awareness levels include transaction delays caused by the system, personal information theft for fraudulent transactions, system unavailability due to technical issues, and hacker access to customer accounts. These suggest that respondents are particularly cognizant of system-related risks and the potential for unauthorized access to their personal information.

On the contrary, the relatively lower scores include point-of-sale device failures, unauthorized fees charged by agents or merchants, and primary storage or backup breakdown leading to loss of transaction records. These slightly lower scores may indicate areas where additional education could be beneficial.

The high level of awareness across all risk categories is consistent with findings from Setiawan *et al.*, who constructed a four-dimensional indicator system for digital financial literacy (DFL) that included risk awareness as a key component [9]. This suggests that risk awareness is considered an important aspect of digital financial literacy in their research framework. On the variation in risk awareness, research by Lyons *et al.* suggested that awareness can vary significantly across different aspects of digital financial risks [10]. Despite the high awareness levels in the data, it's important to note that awareness alone may not significantly impact financial behaviour.

Overall, the data presents a positive representation of digital financial risk awareness, with consistently high levels across various risk categories. Yet, when compared with other studies, it becomes clear that high awareness does not necessarily translate to DFL or improved financial behaviour. Future efforts may be considered to focus not just on maintaining a high level of awareness but also on improving knowledge of risk control measures, consumer rights, and the practical application of this awareness in decision-making.

#### **Knowledge of Consumer Rights and Redress Procedures.**

The data presented reveals a generally high level of digital financial literacy (DFL) regarding knowledge of consumer rights and redress procedures among the surveyed population. The average weighted mean of 3.77, verbally described as "High," indicates that respondents are well-informed about their rights and the procedures for seeking redress in digital financial services.

Regarding the awareness of rights, respondents demonstrated a strong understanding of their rights as users of digital financial products and services, with a weighted mean of 4.20. This aligns with the findings of Lyons *et al.* who identified self-protection as a key dimension of digital financial literacy [11]. The strong awareness of rights among respondents as indicated by the high weighted mean has several important implications. This includes enhanced consumer empowerment which suggests that consumers are better equipped to make informed decisions when using digital financial products and services; improved consumer protection where consumers are more likely to recognize and report unfair practices, potentially leading to better overall consumer protection in the digital financial ecosystem; increased market efficiency where consumers can make more rational choices, which may lead to a more efficient and competitive digital financial market; reduced vulnerability to exploitation, consumers who understand their rights are less likely to fall victim to predatory practices or exploitation, particularly important for low-income communities; and greater confidence in digital finance. These implications highlight the importance of maintaining and further improving consumer awareness of rights in digital finance as it forms a crucial component of overall digital financial literacy and consumer protection.

On data privacy and protection, the highest score was observed in the awareness of rights to data privacy and protection with a weighted mean of 4.24, verbally described as very high. This corresponds with the emphasis placed on data protection by the International Telecommunications Union (ITU) framework for digital financial services [12]. Also, on fraud protection, respondents showed high awareness of their rights to protection against fraud and misuse. This echoes the importance of fraud prevention highlighted in the ITU's framework for a digital financial services ecosystem. Also, on reporting procedures, knowledge of where to report problems and file reports in case of fraud was high, though slightly lower than general rights awareness. This relates to the "dispute resolution" theme identified by the ITU. While knowledge of rights for redress was high (3.52), understanding how to file for redress was comparatively lower (3.40, Moderate). This discrepancy is noteworthy and aligns with concerns raised in the G20 High-Level Principles for Digital Financial Inclusion regarding the need for efficient and accessible complaints resolution mechanisms [13].

On legislative awareness, knowledge of specific legislation (RA 11765, Financial Products and Services Consumer Protection Act) was high (3.54), indicating effective dissemination of regulatory information[13].

The overall high level of awareness on the level of digital financial literacy (DFL) regarding knowledge of consumer rights and redress procedures among the surveyed population, suggests that efforts to educate consumers about their rights in the digital financial sphere have been largely successful.

**Knowledge of Digital Financial Risk and Control.** The average weighted mean across all categories is 4.17, corresponding to a "high" level of digital financial literacy. This indicates that consumers generally have a strong understanding of digital financial risks and employ various control measures. The impact of digital financial literacy on financial behaviour" by Alkhaldeh *et al.* found a significant relationship between digital financial literacy and financial behaviour, with digital financial literacy explaining 58.1% of the variance in financial behaviour [14]. This supports the observation of a high overall level of digital financial literacy and its impact on consumer behaviour. In addition, research by Fan C.Y. highlighted that digital financial literacy plays a crucial role in residents' financial risk prevention capabilities and the security of the overall financial consumption environment [15].

The top five areas where respondents demonstrate the highest level of awareness and practice include not sharing passwords with friends and family, checking account statements after online purchases, not sharing personal information on social media, not giving personal information through e-mail, messages, or phone calls, and not clicking links or attachments from unexpected emails or messages. These scores suggest that consumers are particularly vigilant about protecting their personal information and financial data. On the other hand, the three areas with the lowest scores include regularly changing passwords on online shopping and payment websites, regularly changing passwords on mobile phones and

computers, and installing and updating anti-virus software. These scores indicate potential areas where consumer education and practice could be enhanced.

It can be observed that as to personal information protection, consumers show a very high level of awareness in protecting their personal information, with scores ranging from 4.34 to 4.52 for not sharing passwords, not disclosing personal information, and reading privacy policies. The study "Effect of Digital Financial Literacy on Digital Consumer Protection" (2024) found that digital financial literacy significantly impacts digital consumer protection, financial self-efficacy, and financial confidence[16]. This supports the observations on consumers' high awareness of protecting personal information and cautious online transaction behaviour. As to online transaction safety, there's a very high level of caution when conducting online transactions. Consumers regularly check website security, verify seller credibility, and validate their payments through various methods. As to password management, while respondents are very conscious about creating strong passwords and not sharing them, there's room for improvement in regularly changing passwords and using different passwords for different accounts. As to device security, respondents show high awareness of keeping their devices secure, with high scores for updating software and not leaving mobile phones unattended. However, there's potential for improvement in installing and updating anti-virus software. As to logging off and browser settings, respondents are highly aware of the importance of logging off after using applications and not allowing browsers to save passwords.

**Table 1. Significant Difference as to Sex**

Level of Digital Financial Literacy	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.334	1	.334	1.058	.305
Within Groups	64.024	203	.315		
Total	64.358	204			

The provided ANOVA (Analysis of Variance) in table 1 presents the results of a statistical analysis comparing the level of digital financial literacy between two groups, likely male and female. There is no significant difference in the level of digital financial literacy between males and females. Between groups, the high p-value (0.305) suggests that any observed differences in digital financial literacy between males and females are likely due to random chance rather than a true population difference. On within-group variation, the large within-groups sum of squares (64.024) compared to the between-groups sum of squares (0.334) indicates that individual differences within each sex group account for much more of the variation in digital financial literacy than differences between the sexes. On effect size, the small F-value (1.058) suggests that even if there were a real difference between groups, the effect size would be small. Concerning the sample size, with 205 total participants, the study has a reasonable sample size for detecting moderate to

large effects. However, small effects might still go undetected. From a practical standpoint, this analysis suggests that interventions or educational programs aimed at improving digital financial literacy may not need to be tailored differently for males and females, as there is no significant difference between the groups.

In conclusion, it can be noted that there is no statistically significant difference in digital financial literacy levels between males and females in this sample. Any observed differences are more likely attributable to individual variations rather than sex-based differences.

**Table 2. Relationship between various demographic factors and digital financial literacy.**

Level of Digital Financial Literacy and	N	r-value	p-value	Decision	Interpretation
Age	205	.072	.305	Fail to Reject H <sub>0</sub>	Not Significant
Course		.049	.484	Fail to Reject H <sub>0</sub>	Not Significant
Access to Internet		.139	.047	Reject H <sub>0</sub>	Significant
Device Used to Access Internet		.127	.049	Reject H <sub>0</sub>	Significant

The provided data offers insights into the relationship between various demographic factors and digital financial literacy. In terms of age, the correlation between age and digital financial literacy is weak and not statistically significant. This suggests that age does not have a meaningful impact on levels of digital financial literacy in this sample. Similar to age, the correlation between course and digital financial literacy is very weak and not statistically significant. This indicates that the type of course taken by respondents does not significantly influence their level of digital financial literacy. It can be observed that there is a statistically significant positive correlation between access to the Internet and digital financial literacy at the 0.05 significance level. This indicates that as access to the internet increases, so does the level of digital financial literacy among respondents, suggesting that improved internet access may enhance financial literacy skills. Also, the correlation between the device used to access the internet and digital financial literacy is statistically significant at the 0.05 level. This suggests that the type of device used (e.g., smartphone, tablet, computer) may influence levels of digital financial literacy, indicating that certain devices may facilitate better learning or engagement with digital financial tools.

Findings suggest that efforts to improve digital financial literacy should focus on expanding internet access, device considerations, age-agnostic approach, beyond formal education.

**Expanding Internet Access.** Given the significant correlation between internet access and digital financial literacy, initiatives to broaden internet availability could have a positive impact on financial literacy levels.

**Device Considerations.** The type of device used for internet access matters. Educational programs or financial service providers might consider optimizing their content and services for various devices to maximize engagement and learning.

**Age-Agnostic Approach.** Since age doesn't significantly correlate with digital financial literacy, programs should be designed to cater to all age groups rather than assuming older or younger individuals need more support.

**Beyond Formal Education.** The weak correlation with course suggests that digital financial literacy is not strongly tied to formal education. Alternative learning methods and practical experiences might be more effective in improving these skills.

While personal characteristics like age and course of study do not significantly impact digital financial literacy, access to technology – both in terms of internet connectivity and the devices used – plays a crucial role. This underscores the importance of technological infrastructure and device accessibility in fostering digital financial literacy in today's increasingly digital financial landscape.

The analysis indicates that there is no statistically significant relationship between sex and the level of digital financial literacy among the respondents in this study. This implies that, within this sample, being male or female does not appear to affect one's level of digital financial literacy.

**4. CONCLUSION AND RECOMMENDATION**

Overall, the research digital financial literacy (DFL) indicates a generally high level of digital financial literacy among the surveyed college students. This is particularly evident in their knowledge and use of basic digital financial products and services, awareness of digital financial risks, and understanding of consumer rights and redress procedures.

**Knowledge and Use of Digital Financial Products and Services.** Students demonstrate high proficiency in using mobile phones for various purposes, including financial transactions. There is a strong adoption of digital payment methods and e-wallets, indicating a shift towards cashless transactions. However, knowledge of more advanced financial products and services, such as online trading platforms and automated investment services, remains moderate to low.

**Awareness of Digital Financial Risks.** Students show a high awareness of system-related risks and potential unauthorized access to personal information. There is room for improvement in understanding risks related to point-of-sale device failures and unauthorized fees charged by agents or merchants.

**Consumer Rights and Redress Procedures.** Respondents demonstrate a strong understanding of their rights as users of digital financial products and services. While knowledge of rights to redress is high, understanding how to file for redress is comparatively lower, indicating a potential area for improvement.

**Risk Control Measures.** Students show a high level of awareness and practice levels in protecting personal information and maintaining online transaction safety. There is potential for improvement in areas such as regularly changing passwords and installing anti-virus software.

**Demographic Factors.** No significant difference in DFL levels was found between male and female students. Age and course of study do not significantly impact DFL levels. Access to the internet and the type of device used for internet access show statistically significant positive correlations with DFL.

The following are the recommendations:

1. Educational programs should focus on improving knowledge of advanced financial products and services.
2. Efforts to enhance DFL should prioritize expanding internet access and optimizing content for various devices.
3. Financial education initiatives should be designed to cater to all age groups and not be limited to formal education settings.
4. There is a need for improved education on practical application of risk awareness in decision-making. Financial institutions and educational programs should focus on mobile-friendly solutions to reach this demographic effectively.
5. Future research should focus on DFL among vulnerable populations, including low-income students or those from underrepresented groups. This would help in developing targeted interventions to address specific challenges faced by these groups.

Investigating the long-term economic impact of improved DFL among college students could provide valuable insights for policymakers. This could include studying how DFL levels correlate with future earning potential, entrepreneurship rates, or overall economic mobility. By pursuing these research directions, future studies can contribute to a more comprehensive understanding of digital financial literacy among college students and inform the development of more effective educational strategies and policies.

In conclusion, while college students demonstrate a solid foundation in digital financial literacy, there are clear areas for improvement. By addressing these gaps and leveraging the factors that positively influence DFL, educators and policymakers can better prepare students for the increasingly digital financial landscape they will navigate in their personal and professional lives.

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