The Impact of Financial and Digital Literacy on Awareness of Investment Scams: Evidence from Management Undergraduates in Sri Lankan State Universities

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Abstract

Financial literacy refers to the ability to understand and effectively apply knowledge and skills such as budgeting, saving, investing, and managing debt to make responsible financial decisions. Digital literacy is the capacity to access, evaluate, and use digital tools and information securely and efficiently. In the context of rising online financial fraud, both financial literacy and digital literacy play a critical role in protecting individuals from deceptive practices such as investment scams. This study investigates how financial literacy and digital literacy influence the awareness of investment scams among management undergraduates in state universities in Sri Lanka, with cybercrime awareness examined as a mediating factor. Data was collected through a quantitative survey of 350 students across seven state universities and analyzed using SPSS and Smart PLS. The results reveal that financial literacy, digital literacy, and cybercrime awareness all have a positive impact on students' awareness of investment scams. Both financial literacy and digital literacy significantly enhance cybercrime awareness, which in turn strengthens their effects on scam awareness. All relationships were found to be statistically significant at $p < 0.001$. The model explained 85.3 percent of the variance in scam awareness, with cybercrime awareness identified as the strongest predictor and an important mediator. These findings highlight the need to integrate financial literacy, digital literacy, and cybercrime awareness into higher education curricula. For developing economies such as Sri Lanka, where the threat of digital fraud is increasing, coordinated educational and policy initiatives could play a crucial role in reducing vulnerability to investment scams.

Keywords: Cybercrime awareness, digital literacy, financial literacy, investment scam awareness.

Introduction

The increasing sophistication of financial markets and the widespread use of digital financial platforms among undergraduates in Sri Lanka have highlighted the importance of both financial and digital literacy (Lusardi & Mitchell, 2014; Ng & Kwok, 2017). This study is motivated by

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the growing trend of investment frauds targeting inexperienced investors, resulting in significant financial losses (Kumar & Lee, 2019). Financial literacy equips individuals to make sound economic decisions, yet many lack the necessary knowledge and skills, which is further complicated by a digital divide that limits access to quality information on financial products and scams (OECD, 2020; van Deursen & van Dijk, 2019). Cybercrime awareness is also crucial, as many scams exploit cybersecurity vulnerabilities such as phishing and identity theft (Hadnagy, 2018; Smith, 2021). Therefore, this study includes cybercrime awareness as an intervening factor influencing students' susceptibility to investment scams (Jones et al., 2020). Previous research indicated that financial literacy could help individuals avoid scams; however, there is limited research applying these findings to the Sri Lankan context, considering its unique social, economic, and educational factors. A recent study by Thilakarathna et al. (2024) assessed the impact of digital financial literacy on investment choices among Generation Z management undergraduates in Sri Lanka, highlighting the importance of financial education in mitigating investment fraud risks. Furthermore, a study by Umar and Dalimunthe (2024) explored the influence of financial and digital literacy on investment scam awareness among university students in Indonesia, emphasizing the protective role of cybercrime awareness in reducing vulnerability to investment fraud.

Digital financial services offer new investment opportunities but also expose individuals, particularly undergraduates, to increased risks of financial fraud due to inadequate literacy and awareness. Despite improvements in financial inclusion and digital literacy, many young adults remain vulnerable to scams due to insufficient understanding of investment concepts and lack of critical evaluation skills. Furthermore, existing financial literacy programs in Sri Lanka often do not adequately address digital investment scams, especially for students outside economic disciplines. This study seeks to fill these gaps by investigating the combined effects of financial literacy, digital literacy, and cybercrime awareness on investment scam awareness among management undergraduates in state universities. The importance of this study lies not only in its theoretical contribution but also its practical implications, providing policymakers and educators with insights to enhance financial education and scam prevention strategies.

This study contributes to empirical literature by focusing on a developing country context, where data on the impact of financial and digital literacy on fraud awareness remains limited. A recent study by Nursanti and Trinugroho (2024) investigated the effect of financial literacy on the ability to detect investment fraud, highlighting the importance of financial education in identifying fraudulent schemes. Additionally, a study by Chaugule and Dandekar (2024) evaluated the role of digital financial literacy among individuals, emphasizing its significance in making informed financial decisions and preventing fraud. Practically, this research provides valuable insights for educational institutions, financial organizations, and policymakers to design targeted literacy programs aimed at enhancing young adults' resilience against investment fraud. Despite limitations such as reliance on self-reported data and a sample restricted to selected universities, the study seeks to offer foundational knowledge that can inform future research and interventions in this area. Accordingly, this study seeks to answer the research question: What is the impact of financial literacy and digital literacy on awareness

of investment scams among management undergraduates in state universities in Sri Lanka? Accordingly, this study aims to achieve the following objectives.

- To examine the impact of financial literacy on awareness of investment scams among management undergraduates in state universities of Sri Lanka.
- To examine the impact of digital literacy on awareness of investment scams among management undergraduates in state universities of Sri Lanka.
- To examine the impact of cybercrime awareness on awareness of investment scams among management undergraduates in state universities of Sri Lanka.
- To examine the impact of financial literacy on cybercrime awareness among management undergraduates in state universities of Sri Lanka.
- To examine the impact of digital literacy on cybercrime awareness among management undergraduates in state universities of Sri Lanka.
- To examine the mediating role of cybercrime awareness in the relationship between financial literacy and awareness of investment scams among management undergraduates in state universities of Sri Lanka.
- To examine the mediating role of cybercrime awareness in the relationship between digital literacy and awareness of investment scams among management undergraduates in state universities of Sri Lanka.

Literature Review and Hypothesis Development

Financial Literacy (FL)

Defined as the critical life skill enabling effective financial asset management, informed decision-making, and navigation of complex financial ecosystems. It encompasses budgeting, saving, evaluating financial products, risk assessment, and planning (Lusardi & Mitchell, 2014; Klapper & Lusardi, 2019). FL is fundamental for building financial resilience and economic stability (Lusardi et al., 2020) and is crucial for recognizing and avoiding fraudulent investment schemes (Umar et al., 2024).

Digital Literacy (DL)

Encompasses the skills, knowledge, and competencies required to use digital devices and technologies effectively to find, analyze, and share information. It includes technical competencies, critical thinking, and ethical understanding (UNESCO UIS, 2024; Livingstone & Helsper, 2007). DL is essential for safely navigating online financial environments, evaluating digital financial tools, identifying credible information, and recognizing online scams like investment fraud (Umar et al., 2024).

Cybercrime Awareness (CCA)

Involve knowledge of online threats (e.g., phishing, hacking, identity theft, online fraud) and understanding prevention and response strategies (OECD, 2012). Heightened CCA is vital for safeguarding personal and financial information in digital transactions and recognizing red flags associated with investment scams (Umar et al., 2024).

Awareness of Investment Scams (AIS)

Refers to an individual's ability to recognize, understand, and avoid fraudulent investment schemes (e.g., Ponzi schemes, fake platforms) often characterized by unrealistic high returns

and low risks (Umar et al., 2024). AIS, underpinned by critical evaluation skills (Klapper & Lusardi, 2019), empowers individuals to identify warning signs (e.g., pressure tactics, lack of transparency) and make informed decisions, thereby reducing vulnerability to financial and psychological harm (Atkinson & Messy, 2012).

Research Gap

Empirical research on financial literacy and digital literacy has been dominated by studies in developed economies with well-established financial systems. These studies consistently show that financial literacy strengthens financial capability and reduces susceptibility to fraud (Lusardi & Mitchell, 2014; Klapper & Lusardi, 2019), while digital literacy is strongly associated with online safety and resilience against digital threats (Livingstone & Helsper, 2007). However, such findings emerge from contexts where individuals benefit from strong institutional support, widespread financial education, and advanced digital infrastructure. In contrast, research in developing economies is more limited and highlights a different set of challenges. For instance, Umar et al. (2024) demonstrate that financial and digital literacy positively influence awareness of investment scams among young adults in Indonesia but also reveal contextual barriers such as limited access to financial education, immature financial systems, and persistent digital divides. These findings suggest that while the underlying relationships may be universal, their strength and implications vary significantly depending on socio-economic and cultural conditions.

Crucially, the Sri Lankan context remains underexplored despite growing youth engagement with digital financial platforms and the parallel rise in online investment scams. Existing international evidence cannot be generalized without careful consideration, as local factors such as disparities in digital access, varying levels of financial education in universities, and limited regulatory safeguards may alter the dynamics between financial literacy, digital literacy, and scam awareness.

This study directly addresses these shortcomings by examining the combined influence of financial literacy and digital literacy on awareness of investment scams among management undergraduates in Sri Lankan state universities. By incorporating cybercrime awareness as both a direct predictor and a mediator, the research not only responds to the lack of localized evidence but also extends existing literature that often treats these literacies in isolation. In doing so, the study aligns its objectives with the pressing need to design targeted educational interventions and policy measures that can enhance scam resilience among vulnerable populations in developing economies.

Methodology

The study examines how financial and digital literacy help management undergraduates at state universities detect and reduce scam risks, using survey data and quantitative analysis to inform educational and policy efforts.

Conceptualization

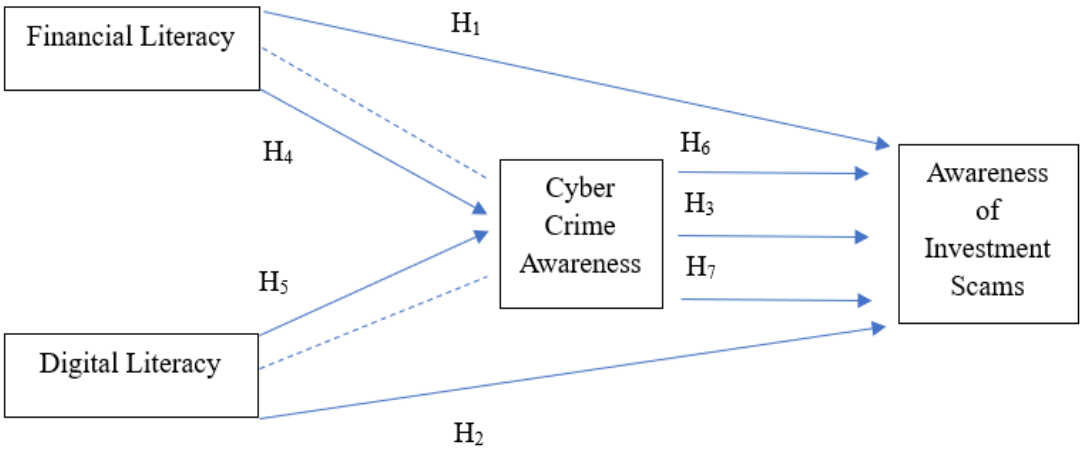

Figure 1: Conceptual Framework

Research Hypotheses

Prior research suggested that individuals with higher financial literacy are better at making informed financial decisions and less prone to scams (Lusardi, 2019), while digital literacy enhances the ability to critically evaluate online content and detect fraud (Livingstone & Helsper, 2007).
Based on this, the study proposes seven hypotheses:

H_1: Financial literacy positively impacts awareness of investment scams.
H_2: Digital literacy positively impacts awareness of investment scams.
H_3: Cybercrime awareness positively impacts awareness of investment scams.
H_4: Financial literacy positively impacts awareness of cybercrime.
H_5: Digital literacy positively impacts awareness of cybercrime.
H_6: Cybercrime awareness mediates the relationship between financial literacy and awareness of investment scams.
H_7: Cybercrime awareness mediates the relationship between digital literacy and awareness of investment scams.

To test these hypotheses, a quantitative research methodology was employed. The target population consisted of approximately 3,540 students across seven state universities, and a sample of 350 respondents was determined using Morgan's table. A structured online questionnaire was used as the primary data collection instrument, designed around the study's conceptual framework. Independent variables included financial literacy and digital literacy, while cybercrime awareness was examined as both a direct predictor and a mediating variable, with awareness of investment scams as the dependent variable. Responses were measured using a five-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree." Data were collected through convenience sampling due to the geographical distribution of universities and were analyzed using SPSS and Smart PLS. Prior to analysis, incomplete responses were removed to ensure data quality. Reliability analysis was conducted to confirm the consistency of measures. Descriptive statistics (mean, median, and standard deviation) were used to summarize variables. Correlation analysis assessed the relationships among key variables, followed by regression analysis to examine the predictive effects of financial literacy and digital literacy on investment scam awareness. Finally, structural equation modeling (SEM)

was employed to evaluate the strength of relationships and to test the mediating role of cybercrime awareness.

Results and Discussion

This section presents findings from the study Financial Literacy and Digital Literacy on Awareness of Investment Scams among management Undergraduates in State Universities in Sri Lanka. Using Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS software (Hair et al., 2019), this study systematically analyzes empirical data to address research questions and test hypotheses.

Characteristics of the Respondents

The sample composition showed that the majority of respondents were male (66.8%), while female's respondents for 33.2%. Most participants were aged 24 years or above (69.7%), followed by those aged 23 years (22.5%), 22 years (4.0%), and 21 years (3.8%). University-wise, the highest representation from Rajarata University of Sri Lanka (22.5%), University of Jaffna (18.2%), and University of Colombo (13.3%), with other universities contributing between 10.7% and 12.1% each. In terms of academic year, final-year students formed the largest group (73.1%), followed by third year (18.2%), second year (5.8%), and first-year students (2.9%). This distribution indicates a participant profile with relatively advanced financial knowledge and greater exposure to real-world financial decision-making and potential scam risks. In the descriptive analysis, all measurement items for the latent variables Awareness of Investment Scams (AIS), Cybercrime Awareness (CCA), Digital Literacy (DL), and Financial Literacy (FL) showed mean scores above the neutral midpoint of 3.0, indicating generally moderate to high levels among the respondents. AIS items ranged from 3.465 to 3.879, reflecting a moderate to strong awareness of investment scams. CCA items ranged from 3.454 to 3.711, suggesting positive awareness of cybercrime. DL items had higher mean scores (3.535–3.850), highlighting respondents' confidence in digital skills, while FL items (3.497–3.616) indicated foundational financial knowledge with some potential for improvement. Standard deviations across all constructs (1.089–1.350) reflected reasonable response dispersion. Skewness (-1.117 to -0.401) and kurtosis (-0.883 to 0.659) values fell within acceptable ranges, confirming normality of the data and suitability for further statistical analyses such as PLS-SEM.

Assessment of Measurement Model

The initial analysis in PLS-SEM involves assessing the reliability and validity of the measurement model to ensure the consistency and accuracy of instruments measuring latent constructs Financial Literacy, Digital Literacy, Cybercrime Awareness, and Awareness of Investment Scams. This assessment includes indicator reliability, internal consistency, convergent validity, and discriminant validity.

Internal Consistency

Internal consistency was assessed using Cronbach's Alpha, with all values well above the 0.70 threshold, indicating high reliability.

Table 01: Internal Consistency

	Cronbach's Alpha	Composite Reliability
AIS	0.847	0.888
CCA	0.924	0.939
DL	0.900	0.931
FL	0.915	0.932

The reliability analysis demonstrated that all constructs exhibit strong internal consistency. Cronbach's alpha values ranged from 0.847 for Awareness of Investment Scams (AIS) to 0.924 for Cybercrime Awareness (CCA), exceeding the commonly accepted threshold of 0.70 (Nunnally & Bernstein, 1994). Similarly, composite reliability values were high, ranging from 0.888 (AIS) to 0.939 (CCA), indicating that the measurement items consistently capture their respective constructs. These results confirm that the survey instruments used for AIS, CCA, Digital Literacy (DL), and Financial Literacy (FL) are reliable and suitable for subsequent structural and inferential analyses.

Multicollinearity Assessment

Multicollinearity among indicators was evaluated using the Variance Inflation Factor (VIF). All VIF values ranged between 1.349 and 3.022, well below the critical threshold of 5 (Hair et al., 2019), indicating that multicollinearity is not a concern at the indicator level. Despite high HTMT ratios among constructs, these correlations do not inflate variance in a problematic way, supporting the reliability of the structural model estimates.

Significance of Path Coefficients

The structural model's hypothesized relationships were assessed using path coefficients, with significance tested through a bootstrapping procedure of 5,000 resamples. Paths were considered significant if p-values were below 0.05 or t-statistics exceeded 1.96, ensuring robust evaluation of the proposed relationships between constructs.

Table 02: Significance of Path Coefficients

	Original Sample	Sample Mean	Standard Deviation	T Statistics	P-Values
CCA -> AIS	0.422	0.419	0.071	5.911	0.000
DL-> AIS	0.262	0.261	0.062	4.200	0.000
DL -> CCA	0.604	0.603	0.065	9.335	0.000
FL -> AIS	0.279	0.284	0.057	4.891	0.000
FL -> CCA	0.342	0.344	0.068	5.037	0.000
DL-> CCA -> AIS	0.255	0.254	0.057	4.477	0.000
FL -> CCA -> AIS	0.144	0.143	0.032	4.506	0.000

The structural model analysis showed that all hypothesized paths were statistically significant. Cybercrime Awareness ($\beta = 0.422$, $p < 0.001$), Digital Literacy ($\beta = 0.262$, $p < 0.001$), and Financial Literacy ($\beta = 0.279$, $p < 0.001$) positively influenced Awareness of Investment Scams (AIS), with Cybercrime Awareness having the strongest direct effect. Digital Literacy ($\beta = 0.604$, $p < 0.001$) and Financial Literacy ($\beta = 0.342$, $p < 0.001$) also significantly enhanced Cybercrime Awareness (CCA), with Digital Literacy showing the most substantial impact. Indirect effects confirmed the mediating role of CCA, as Digital Literacy ($\beta = 0.255$, $p < 0.001$)

and Financial Literacy (β = 0.144, p < 0.001) positively influenced AIS through CCA, highlighting the importance of cybercrime awareness in mitigating investment scam risks.

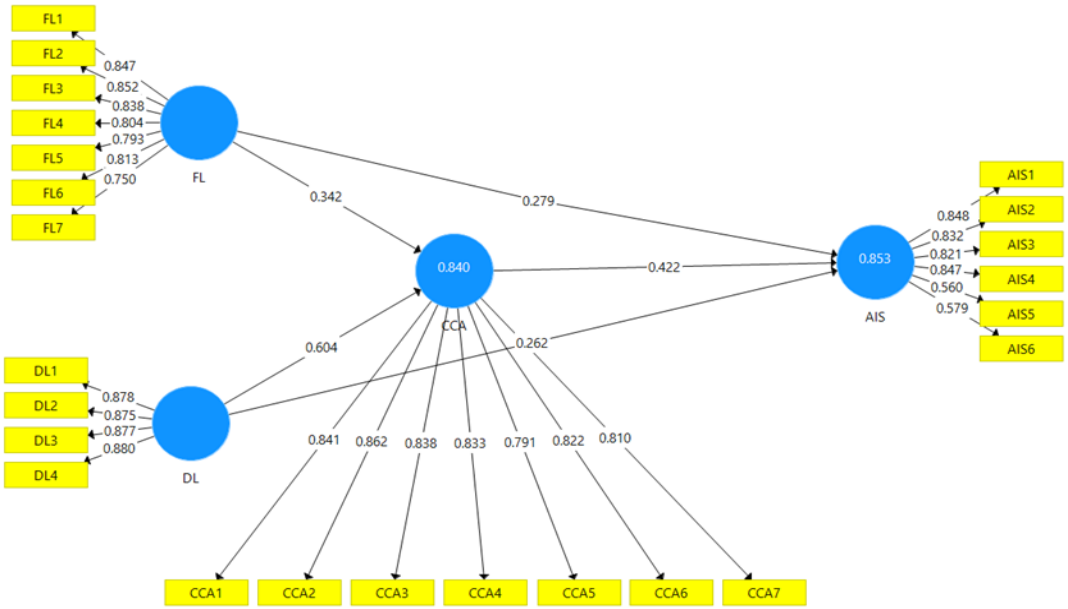

Figure 2: PLS SEM Model

Hypothesis Testing

Based on the analysis of the path coefficients from the structural model, a decision can be made for each of the research hypotheses. The results of the hypothesis testing are summarised in Table 03.

Table 03: Hypothesis Testing

Hypotheses	Coefficient	P value	Decision
H1: There is an impact of financial literacy on awareness of investment scams among undergraduates in Sri Lanka.	0.279	0.000	Supported
H2: There is an impact of digital literacy on awareness of investment scams among undergraduates in Sri Lanka.	0.262	0.000	Supported
H3: There is an impact of cybercrime awareness on awareness of investment scams among undergraduates in Sri Lanka.	0.422	0.000	Supported
H4: There is an impact of financial literacy on awareness of cybercrime among undergraduates in Sri Lanka.	0.342	0.000	Supported
H5: There is an impact of digital literacy on awareness of cybercrime among undergraduates in Sri Lanka.	0.604	0.000	Supported
H6: There is a mediating role of awareness of cybercrime in the impact of financial literacy on awareness of investment scams among undergraduates in Sri Lanka.	0.144	0.000	Supported
H7: There is a mediating role of awareness of cybercrime in the impact of digital literacy on awareness of investment scams among undergraduates in Sri Lanka.	0.255	0.000	Supported

Source: Survey data (2025)

The analysis supports all seven hypotheses. Financial Literacy, Digital Literacy, and Cybercrime Awareness significantly and positively predicted Awareness of Investment Scams, highlighting their direct role in recognizing fraudulent schemes. Financial Literacy and Digital Literacy also positively influenced Cybercrime Awareness, with Digital Literacy having a stronger effect, indicating their contribution to identifying general online threats. Additionally, the significant indirect effects confirm that Cybercrime Awareness mediates the relationship, showing that Financial and Digital Literacy enhances scam awareness both directly and indirectly through improved cybercrime awareness.

Discussion

The findings highlight that Financial Literacy, Digital Literacy, and Cybercrime Awareness are key contributors to undergraduates' ability to identify and prevent investment scams, supporting the proposed conceptual model. Cybercrime Awareness emerged as the strongest direct predictor of Awareness of Investment Scams and a significant mediator, emphasizing that knowledge of online threats and criminal techniques is crucial alongside financial and digital competencies. Additionally, Digital Literacy showed a stronger influence on Cybercrime Awareness than Financial Literacy, indicating that digital competence extends beyond operating technology to understanding associated risks. These results underscore the importance of integrating financial, digital, and cybercrime education for more effective scam awareness among students

Conclusions

The findings of this study provide strong empirical support for the role of Financial Literacy (FL) and Digital Literacy (DL) in enhancing Awareness of Investment Scams (AIS) among management undergraduates in Sri Lankan state universities, with Cybercrime Awareness (CCA) playing both a direct and mediating role. Consistent with previous studies (e.g., Lusardi & Mitchell, 2014; Almenberg & Dreber, 2015), our results confirm that financial literacy significantly contributes to individuals' ability to recognize and avoid fraudulent investment schemes. However, the study also extends prior research by demonstrating that digital literacy is an equally, if not more, critical determinant of scam awareness in the context of a rapidly digitizing financial environment. This aligns with findings by Ng & Tan (2021), who highlighted that digital competence enables individuals to critically evaluate online information and recognize deceptive tactics. Interestingly, the stronger effect of DL on CCA compared to FL suggests that in the digital era, technical navigation and critical digital skills may outweigh traditional financial knowledge when it comes to identifying online scams.

At the same time, our findings partially diverge from earlier studies that positioned financial knowledge as the dominant predictor of fraud prevention (e.g., van Rooij, Lusardi, & Alessie, 2011). The discrepancy may be explained by contextual factors: in developing economies like Sri Lanka, where digital financial services are expanding rapidly, exposure to online risks is more frequent, thereby amplifying the relevance of digital literacy and cybercrime awareness. Importantly, cybercrime Awareness emerged as the strongest direct predictor of AIS and a crucial mediator. This resonates with recent research (e.g., Button et al., 2022; Choi et al., 2020), which emphasizes that knowledge of cybercriminal strategies such as phishing, social engineering, and identity theft is essential for equipping individuals to mitigate scam risks. The mediating role of CCA also advances theoretical understanding by showing how financial and digital literacy interact with domain-specific awareness of cyber risks, thereby providing a more integrated framework for understanding resilience against financial scams.

From a practical perspective, the findings carry significant implications for policymakers, educators, and higher education institutions. First, they suggest that financial education initiatives should adopt a holistic approach that integrates financial skills with digital competence and targeted cybercrime awareness training. Traditional programs focusing solely on budgeting, saving, and investment decision-making may no longer suffice in the digital age. Instead, curricula should include modules on recognizing fraudulent websites, evaluating online financial platforms, and understanding common cybercrime tactics. Second, universities should consider embedding interdisciplinary programs that combine finance, information technology, and cybersecurity education to prepare undergraduates for the realities of digital finance. Such interventions would not only strengthen scam resistance but also cultivate informed and responsible financial behavior among young adults. Finally, for policymakers in developing economies, the findings highlight the urgency of implementing nationwide digital and financial literacy campaigns, particularly as mobile banking and digital payment platforms become more pervasive. By addressing both the financial and technological dimensions of literacy, governments can reduce systemic vulnerabilities to online scams, thereby promoting greater trust and stability in digital financial ecosystems.

Overall, this study advances the discourse by illustrating the interplay between financial literacy, digital literacy, and cybercrime awareness, and by showing that an integrated approach is essential for safeguarding young adults against investment scams in digitally enabled economies.

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