



Perception about Online Financial Fraud of the Elderly: A Study in Thailand

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Abstract

This study aims to: (1) examine the digital literacy of older adults in Nakhon Si Thammarat Province; (2) explore their awareness of online financial scams; (3) investigate the demographic factors influencing digital literacy and scam awareness; and (4) analyze the relationship between digital literacy and scam awareness among older adults. A quantitative research approach was employed, using a questionnaire to collect data from 400 individuals aged 60 years and above residing in Nakhon Si Thammarat. The findings revealed that older adults possessed a relatively high level of digital literacy and a strong awareness of online financial fraud. In terms of demographic characteristics, gender, post-retirement occupation, and prior experience with scam-related threats showed no statistically significant influence on digital literacy. However, age, marital status, education level, pre-retirement occupation, income, and living arrangement were significantly associated with variations in digital literacy at the 0.05 level. Regarding scam awareness, post-retirement occupation showed no significant difference. In contrast, gender, age, marital status, education level, pre-retirement occupation, income, living arrangement, and prior experience with fraud significantly influenced scam awareness at the 0.05 level. Moreover, the study found a statistically significant positive correlation between digital literacy and scam awareness, indicating that older adults with higher digital literacy are more likely to be aware of and cautious about online financial scams.

Keywords: Older adults, digital literacy, awareness, scams, financial fraud

Introduction

The rapid advancement of information and communication technology in the digital era has significantly transformed various aspects of society, including the economy, politics, and education. Digital technology has become an indispensable part of everyday life, enhancing quality of life and providing boundless access to information. It facilitates communication, financial transactions, and numerous other activities through internet-based platforms. However, this convenience also comes with risks. The anonymity afforded by digital platforms creates vulnerabilities that can be exploited by malicious actors to perpetrate fraud and deception while evading legal accountability. Online fraud has emerged as a major global issue, inflicting substantial economic damage. According to recent estimates, global losses due to cyber fraud exceed USD 1.026 trillion, accounting for approximately 1.05% of the world's GDP. Thailand ranks as the fourth most affected country, with losses from online scams amounting to 3.1% of its GDP (GASA, 2023) ^[4]. Data from the Royal Thai Police indicates that, between March 2022 and June 2024, over 575,000 online fraud cases were reported nationwide, with total damages exceeding 65 billion Thai Baht (NBTC, 2024) ^[9]. Common scam methods in Thailand include phone calls, fraudulent text messages, and deception via social media platforms.

As Thailand transitions into a fully aged society, older adults have become increasingly vulnerable to digital fraud and scams. While internet and smartphone use among older adults is widespread, many still lack sufficient digital literacy and media awareness. This deficiency makes them a prime target for various forms of online fraud, such as deceptive money transfers, fake news, misleading advertisements, and identity theft conducted through messaging applications and social networking sites. The growing exposure of older adults to such threats highlights the urgent need to address this issue. Given this context, the present study seeks to examine the awareness of online financial fraud among older adults in Nakhon Si Thammarat Province. The study aims to assess the level of awareness and identify key factors influencing older adults' perceptions of digital financial scams. The findings are expected to inform the development of effective preventive measures and promote digital literacy and cybersecurity awareness within the elderly population.

Research Objectives

1. To examine the digital literacy of older adults in Nakhon Si Thammarat Province.
2. To investigate the awareness of online financial scams among older adults in Nakhon Si Thammarat Province.
3. To explore the demographic factors influencing digital literacy and scam awareness among older adults in Nakhon Si Thammarat Province.
4. To analyze the relationship between digital literacy and the awareness of online financial scams among older adults in Nakhon Si Thammarat Province.

Literature Review

To provide a clear understanding of the concepts of perception and digital literacy, this section presents definitions and key perspectives, along with a review of relevant studies.

Perception is a cognitive process that leads to learning, arising from physical interactions and the interpretation of environmental stimuli (Phuphoi, 2016) ^[11]. Individuals interpret and respond to stimuli in different ways, which results in diverse behaviors (Byagghantara & Chadcham, 2021) ^[1]. Perception plays a crucial role in shaping attitudes, emotions, and behavioral tendencies. Once a person perceives a stimulus, it triggers emotional responses that influence future behavior (Suwansaeng, 2011) ^[17].

Digital literacy refers to a set of knowledge and skills ranging from basic to advanced levels, enabling individuals to use digital technologies effectively. It also includes foundational cognitive, emotional, and social competencies necessary for engaging with digital environments (Kiss, 2017) ^[7]. According to UNESCO (2018) ^[19], digital literacy encompasses the ability to use digital tools, communication applications, and networks to access and manage information, create and share digital content, collaborate and communicate effectively, as well as solve problems and engage in learning, work, and social activities in a productive and creative manner. Digital literacy is typically categorized into three levels: basic, intermediate, and advanced digital skills (ITU, 2018) ^[6]. These skills are essential for navigating digital tools, communication platforms, and networks, including activities such as online information retrieval, email use, programming, and other specialized digital tasks (ECLAC, 2022) ^[3].

When examining digital literacy and the technological competencies of older adults, numerous studies have identified various factors influencing the level of digital skills. Sanjit (2021) ^[15] found that age, educational attainment, and social status significantly affect the knowledge and ability to use digital technologies. Specifically, older adults who are younger, more highly educated, or engaged in socially and technologically relevant roles tend to demonstrate higher levels of digital literacy. Notably, gender was not found to have a significant effect on digital competence. Similarly, Yodpanya (2021) ^[20], in a study involving provincial court personnel under the jurisdiction of the Region 5 Justice Office, reported that age, educational level, and length of service were significant predictors of digital skill levels. Personnel who were younger, better educated, and with fewer years of service were more likely to possess higher digital competencies. Again, gender did not appear to have a statistically significant impact on digital skill development. Kleechaya (2021) ^[8] emphasized that motivation to use technology and levels of digital media literacy vary by age group. Younger older adults showed greater motivation and higher competency in digital media literacy compared to their older counterparts. Additional factors affecting technology use among older adults include occupation, learning experience, self-development skills, and the cost of internet access. Furthermore, Rueangyot (2020) ^[12] found that gender and educational level were statistically significant variables affecting media usage behavior and awareness of social media literacy among older adults. These findings underscore that digital literacy and media awareness are influenced by a combination of individual characteristics and broader social contexts.

In the digital age, where the internet and information technology play an integral role in daily life, cyber threats have become embedded in various online activities. These include online scams, phishing emails designed to trick users into clicking malicious links, financial fraud, malware and spyware installations, and fake websites. As a result, cybersecurity awareness has emerged as a critical focus in academic and policy research. Runnares (2018) ^[13] found that demographic factors—specifically age, education level, and monthly personal income—significantly influence individuals' awareness of cyber threats. Those with higher age, education, and income levels tend to exhibit greater awareness. However, gender and prior experience with cyber threats were not found to be significant predictors of cybersecurity awareness. In contrast, a study by Methaporn Thammasiri and Siraphatsorn Wongthongdee (2022) ^[18] indicated that highest educational attainment, type of occupation, and cybersecurity experience significantly affected awareness of cyber threats, while gender, age, and years of work experience did not. Similarly, Saksheep and Sanrach (2023) ^[16] reported that age, work experience, and past exposure to cyber incidents influenced awareness levels—older individuals and those with more experience were more cautious and had higher levels of threat awareness. This finding aligns with Imjai (2022) ^[5], who emphasized that experience is a key factor influencing cybersecurity prevention behavior, whereas gender and general knowledge of cyber threats did not significantly impact such behavior. On the other hand, Daengsi et al. (2022) ^[2] reported contradictory results, suggesting that gender significantly

influenced cybersecurity awareness, while age did not. These diverse findings underscore the need to consider individual factors—particularly gender—when designing cybersecurity education and awareness programs to ensure effective prevention strategies.

Research Hypotheses

1. Older adults with different demographic characteristics will exhibit significantly different levels of digital literacy.
2. Older adults with different demographic characteristics will exhibit significantly different levels of awareness regarding online financial scams.
3. The digital literacy of older adults is significantly correlated with their awareness of online financial scams.

Research Methodology

This study, titled "Awareness of Online Financial Scams Among Older Adults in Nakhon Si Thammarat Province," employed a quantitative research design. The target population consisted of individuals aged 60 and above residing in Nakhon Si Thammarat Province. Since the total population size and proportion were unknown, the sample size was calculated using Cochran's formula (1977), resulting in a required minimum of 384 participants. However, a total of 400 respondents were included in the actual study to ensure robust data. A non-probability sampling technique was employed, specifically convenience sampling, to select participants. Data collection was conducted using a close-ended questionnaire, which was self-administered by the participants.

The collected data were analyzed using both descriptive and inferential statistics. Descriptive statistics included frequency, percentage, mean, and standard deviation. Inferential statistics were employed to test the research hypotheses and included the Independent Samples t-test, One-way ANOVA (F-test), and the Pearson correlation

coefficient to assess the relationships between variables.

Research Findings

1. The study involved 400 older adults aged 60 years and above residing in Nakhon Si Thammarat Province. Regarding demographic characteristics, the majority of respondents were female (59.8%) and most were between the ages of 60 and 65 years (50.5%). Nearly half were married (49.5%), and a substantial portion had completed only primary education (39.2%). Prior to retirement, the most common occupation was agriculture (29.3%), and even after retirement, many continued working in the agricultural sector (38.2%). In terms of income, 45.3% of participants reported earning less than 15,000 baht per month. Most respondents lived with their spouse (41.0%). Notably, a significant number (90.3%) had previously experienced some form of online scam. The most frequent type of scam reported was receiving phone calls from individuals impersonating officials from organizations such as banks, financial institutions, delivery companies, the Revenue Department, police departments, electricity authorities, and the Comptroller General's Department (reported by 72.8% of respondents).

2. In terms of digital literacy, the overall level among the elderly respondents was considered high ($\bar{X} = 3.41$). The domains in which digital skills were reported at a high level included digital safety ($\bar{X} = 3.69$), basic digital skills ($\bar{X} = 3.61$), self-awareness and digital well-being ($\bar{X} = 3.55$), communication and collaboration ($\bar{X} = 3.53$), and digital engagement and citizenship ($\bar{X} = 3.50$). On the other hand, the domains assessed at a moderate level included digital transactions ($\bar{X} = 3.33$), data and digital content management ($\bar{X} = 3.28$), digital problem-solving ($\bar{X} = 3.16$), and digital content creation ($\bar{X} = 3.02$). These findings indicate that while older adults in this province demonstrate strong foundational digital competencies—particularly in areas related to safety and communication—they may require further support in more technical and creative digital skills (Table 1).

Table 1: Mean Scores and Standard Deviations of Digital Literacy Among Older Adults

Digital Literacy Dimension	Mean (\bar{X})	S.D.	Interpretation
1. Basic Digital Skills	3.61	1.157	High
2. Digital Data and Content Management	3.28	1.224	Moderate
3. Communication and Collaboration	3.53	1.256	High
4. Digital Transactions	3.33	1.256	Moderate
5. Problem-Solving Using Digital Tools	3.16	1.147	Moderate
6. Digital Content Creation	3.02	1.236	Moderate
7. Digital Safety	3.69	1.298	High
8. Digital Participation and Citizenship	3.50	1.179	High
9. Self-Awareness and Digital Well-being	3.55	1.011	High
Overall Mean	3.41	1.031	High

Note: Interpretation of mean scores — 4.21–5.00 = Very High, 3.41–4.20 = High, 2.61–3.40 = Moderate, 1.81–2.60 = Low, 1.00–1.80 = No Skill

3. The overall level of awareness regarding online financial scams among older adults in Nakhon Si Thammarat Province was found to be high ($\bar{X} = 3.55$). When considering specific types of scams, the highest level of awareness was observed in relation to scams involving requests for personal and financial information ($\bar{X} = 3.87$). This was followed by impersonation scams, where fraudsters pose as officials or trustworthy individuals ($\bar{X} = 3.84$). Other types of scams with

high awareness levels included investment-related scams and SMS fraud (both $\bar{X} = 3.72$), psychological manipulation scams ($\bar{X} = 3.71$), and social media scams ($\bar{X} = 3.69$). These results suggest that while older adults are generally well-informed about various scam techniques, they are particularly vigilant when it comes to threats involving identity theft, impersonation, and financial deception (Table 2).

Table 2: Mean Scores and Standard Deviations of Awareness of Online Financial Scams

Type of Online Financial Scam	Mean (\bar{X})	S.D.	Interpretation
1. Scams requesting personal and financial information	3.87	1.007	High
2. Impersonation of officials or credible individuals	3.84	1.010	High
3. Investment scams	3.72	1.024	High
4. SMS fraud	3.72	1.041	High
5. Psychological manipulation scams	3.71	1.040	High
6. Social media scams	3.69	1.041	High
Overall Mean	3.55	0.911	High

Note: Interpretation of mean scores — 4.21–5.00 = Very High, 3.41–4.20 = High, 2.61–3.40 = Moderate, 1.81–2.60 = Low, 1.00–1.80 = Very Low

4. The findings for Hypothesis 1, which proposed that older adults with different demographic characteristics would exhibit different levels of digital literacy, revealed a statistically significant relationship in several aspects. Specifically, gender, post-retirement occupation, and experience with online scam threats did not significantly affect the digital literacy of older adults. In contrast, age, marital status, educational attainment, pre-retirement occupation, monthly income, and living arrangement showed statistically significant differences in digital literacy at the 0.05 level. Further analysis indicated that older adults aged 60 to 65 years had significantly higher digital literacy levels compared to those aged 66 years and above. In terms of marital status, respondents who were single outperformed those who were married, divorced, or widowed in digital literacy. Educational level also played a key role; individuals with a bachelor's degree or higher demonstrated higher levels of digital literacy than those with only primary, secondary, or vocational education. Regarding occupational background, older adults who had worked in agriculture had lower digital literacy than those previously employed in government service, state enterprises, private businesses or trade, corporate sectors, or as general laborers. In terms of income, those earning 30,001 to 45,000 baht or more per month reported significantly higher digital literacy than those earning less. Additionally, older adults living with a spouse had better digital literacy than those living alone, with parents or siblings, or with children or grandchildren. These results underline the importance of socio-demographic factors—especially age, education, and income—in shaping the digital competence of older adults in the context of a rapidly evolving digital society.

5. The findings for Hypothesis 2, which proposed that older adults with different demographic characteristics would exhibit different levels of awareness regarding online financial scams, revealed both significant and non-significant relationships. Specifically, post-retirement occupation was not significantly associated with scam awareness. However, gender, age, marital status, educational level, pre-retirement occupation, monthly income, living arrangement, and experience with scams were all found to significantly affect awareness levels at the 0.05 level of significance. Detailed comparisons indicated that female respondents had higher levels of awareness than male respondents. Those aged 60–65 years exhibited greater awareness than those aged 66 and above. In terms of marital status, individuals who were single demonstrated higher awareness compared to those who were married, divorced, or widowed. Regarding education, those holding a bachelor's degree or higher were more aware than those with only primary, secondary, or vocational education. As for occupational history, former farmers had significantly

lower awareness compared to individuals who had worked as government employees, state enterprise officers, business owners, company employees, or general laborers. Similarly, respondents with a monthly income above 30,000 baht demonstrated higher awareness than those with lower income. In terms of living arrangement, those living with a spouse had higher awareness than those living alone, with parents or siblings, or with children. Furthermore, individuals who had previously experienced scams showed higher levels of awareness than those with no such experience.

6. Regarding Hypothesis 3, the results confirmed that digital literacy among older adults was significantly correlated with their awareness of online financial scams at the 0.05 level of significance. The correlation was found to be positive and statistically significant, indicating that as digital literacy increased, so did scam awareness. Further analysis showed that all dimensions of digital literacy were moderately to strongly correlated with all dimensions of scam awareness, with Pearson correlation coefficients (r) ranging from .523 to .758. These findings suggest that improving digital literacy could play a vital role in enhancing scam awareness and self-protection capabilities among the elderly population.

Discussion

The findings regarding digital literacy among older adults revealed no significant differences based on gender. However, statistically significant differences were observed across several demographic factors, including age, educational attainment, monthly income, pre-retirement occupation, and living arrangement. Specifically, older adults under the age of 70, with higher education levels, a monthly income of 30,000 baht or more, and a background in self-employment or government service prior to retirement, demonstrated significantly higher levels of digital literacy. Additionally, those living with a spouse or alone showed greater digital literacy than those residing with children or grandchildren. Although overall experience with online scams did not result in statistically significant differences in digital literacy, the data indicated that older adults who had previously encountered such threats scored higher in domains related to digital data management and online financial transactions than those with no such experience. This suggests that real-world exposure to digital threats may serve as a catalyst for skill development in specific areas of digital engagement. The results underscore that while gender differences in digital literacy may be diminishing, economic, social, and experiential factors continue to exert considerable influence on the ability of older adults to access and effectively use digital technologies. These findings align with previous studies by Yodpanya (2021)^[20], Phonthamchok (2023)^[10], and Kleechaya (2021)^[8], which emphasize the critical role of contextual

characteristics and life experiences in shaping digital competencies among the elderly population.

The study found that various demographic factors-including gender, age, marital status, educational attainment, pre-retirement occupation, monthly income, living arrangement, and prior experience with online scams-had a statistically significant effect on older adults' awareness of online financial scams ($p < .05$), with the exception of post-retirement occupation. Specifically, older women, younger individuals, those who were single, those with higher education, and those with higher incomes exhibited greater awareness of online scam risks. Similarly, older adults who had previously worked in government or business sectors, as well as those with direct experience facing online scam threats, demonstrated significantly higher levels of scam awareness compared to their counterparts. These findings are consistent with those of Runnares (2018) ^[13] and Thammasiri & Wongthongdee (2022) ^[18], who noted that higher levels of education, income, real-life experience, and access to information contributed to stronger scam awareness and self-protection capabilities among older populations. In contrast, those who were older, less educated, had lower income, lived with dependents, or had limited cyber-related experiences showed significantly lower levels of awareness. These findings suggest that limited access to digital resources, reliance on others for financial decisions, and a lack of direct experience dealing with cyber threats may contribute to lower awareness. Consequently, the results emphasize the importance of promoting lifelong learning and systematic digital safety education among older adults to strengthen their capacity to avoid becoming victims of online financial fraud.

The study also confirmed a significant positive relationship between digital literacy and scam awareness among older adults. Those with higher levels of digital literacy were better equipped to distinguish legitimate information from fraudulent content, recognize online threats, and apply knowledge of cybersecurity practices. These skills, in turn, reduce their vulnerability to online scams. This finding is consistent with prior research by Suksheep and Sanrach (2023) ^[16], Rueangyot (2020) ^[12], Phonthamchok (2023) ^[10], and Samart & Lerdtomornsakul (2023) ^[14], which collectively highlight the critical role of digital literacy in enhancing online safety and scam prevention in aging populations. Strengthening digital literacy is thus a key mechanism for promoting both confidence and security in conducting online financial transactions among older adults.

Conclusion and Recommendations

Although the overall digital literacy level of older adults in Nakhon Si Thammarat Province was found to be high, the study identified that specific areas-such as digital data and content management, digital transactions, problem-solving using digital tools, and digital content creation-were rated only at a moderate level. It is therefore recommended that targeted interventions be developed to enhance knowledge in these areas. Such efforts should take into account the demographic factors that influence digital literacy in order to align educational content with the needs of different subgroups of older adults. At the same time, awareness of online financial scams was also found to be high. However, demographic characteristics and personal experience with fraud emerged as key factors influencing this awareness. Relevant agencies are advised to develop tools and programs

that enhance older adults' knowledge of online threats in ways that are tailored to their unique socio-demographic contexts. Importantly, the findings indicated that older adults with higher digital literacy levels tend to be more capable of detecting and protecting themselves from online scams. Therefore, it is essential to implement systematic digital literacy promotion strategies that are sensitive to demographic diversity and are supported through collaborative efforts between public and private sectors. Such an approach is crucial for empowering older adults with media literacy, enhancing their digital safety, and promoting sustainable engagement with technology in a rapidly evolving digital society.

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