

Financial literacy and quality of life: a moderated mediation approach of fintech adoption and leisure

Financial
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quality of life

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Abstract

Purpose – This study explores the relationship between financial literacy and quality of life (QoL). The study further examines the mediating effect of fintech adoption and the moderating effect of leisure on the relationship between financial literacy and QoL.

Design/methodology/approach – Using convenience sampling, 345 respondents participated in a cross-sectional survey. To test the moderated mediation hypotheses, the PROCESS macro was used.

Findings – The results reveal the mediating effect of fintech adoption on the relationship between financial literacy and QoL, highlighting the importance of digital literacy in an increasingly digitalized society. Moreover, leisure moderates the mediating relationship. Individuals with high leisure are more likely to perceive the uncertainties and risks associated with new technology optimistically – an observation supported by existing literature on the relationships among leisure, perceived freedom, and internal locus of control.

Practical implications – Financial literacy must incorporate digital literacy in order to utilize innovative technology for more efficient financial management. Additionally, having a sense of control over life outcomes can lead to well-being.

Originality/value – Previous research on fintech adoption is mostly related to financial inclusion for the unbanked population in underprivileged rural areas. Here, fintech usage by the general public is the focus. The study also reveals the significance of leisure, as those who have high financial literacy are more likely to adopt fintech when they have more freedom in their lives, which leads to higher QoL.

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Keywords Financial literacy, Quality of life, Fintech adoption, Leisure

Paper type Research paper

1. Introduction

Financial literacy has economic significance in today's world: one needs good financial literacy to make informed decisions in financial planning, wealth accumulation, investment, borrowing, and retirement savings. These financial management skills are key to life satisfaction and well-being in life – in other words, quality of life (QoL) (Bowling and Windsor, 2001; Xiao *et al.*, 2009). Financial literacy directly influences wealth creation (Behrman *et al.*, 2012), stock market participation (Van Rooij *et al.*, 2011), retirement planning (Lusardi and Mitchell, 2007), and debt management (Chotewattanakul *et al.*, 2019), leading to improved well-being. However, several scholars argue that the relationship between financial literacy and QoL is complex and indirect (Amonhaemanon and Isaramalai, 2020; Pahlevan Sharif *et al.*, 2020).

Financial literacy is vital for rapidly aging countries. An extended retirement period requires well-planned savings to ensure well-being during retirement. This study was conducted



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in Thailand, the first developing economy to enter a super-aged society. By 2035, more than 20% of its population will be aged 65 years or older (Chittinandana *et al.*, 2017). With a state pension system that is limited and underdeveloped, Thai households have to save for retirement without expecting government support. Many financial products are available today, but the propensity of the citizens to take advantage of them depends on their financial literacy (Ketkaew *et al.*, 2022). Thus, it is important to access financial literacy in the country to guide the formulation of appropriate policy. Since 2013, the Bank of Thailand (BOT) has conducted financial literacy surveys based on a framework adapted from the Organization for Economic Cooperation and Development (OECD). Three main components were considered: financial literacy, financial behavior, and financial attitude. The COVID-19 pandemic raised public awareness of the importance of long-term financial planning as unexpected events can deteriorate financial stability. The latest survey in 2020 indicated that Thai households have improved their financial skills since the 2018 survey with a score well above the OECD average (The Nation, 2021). Even then, the survey surprisingly revealed that only 39% of the respondents had sufficient funds for three month's worth of expenses in case of an emergency (Banchongduang, 2021). Most Thai people do not have emergency funds and are unprepared for unexpected situations. Financial difficulties arising from unforeseen events lead to stress and anxiety, worsening the QoL. Although the central bank's study suggests that Thais' financial skills have improved, they need to improve their understanding of, and attitude toward financing planning. Indeed, a recent study conducted in a rural area of Thailand suggests that financial attitude positively influences the well-being of Thai households (Thongrak *et al.*, 2021).

This study aims to explore the relationship between financial literacy and QoL, with fintech adoption as a mediator and leisure as a moderator. Here, fintech adoption and leisure are investigated as integral components to improve the QoL of financially literate individuals. Previous studies on fintech focus on factors related to the intention to use (Daragmeh *et al.*, 2021) and financial inclusion for unbanked citizens in developing regions (Ezzahid and Elouaourti, 2021). Incorporating Kass-Hanna *et al.* (2022) argument that financial literacy needs to be redefined to include digital literacy, this study considers fintech adoption as an indicator of digital literacy. Here, its mediating role on the pathway from financial literacy to QoL is tested. This study was conducted during the COVID-19 pandemic when fintech adoption had a special context in daily life. Contactless payments enabled by fintech can mitigate the risk of contracting the COVID-19, ensuring users' health. Moreover, the pandemic was a catalyst for becoming digitally literate (Mansour, 2022) as lockdown measures by the Thai government immobilized its citizens.

Previous studies on leisure have mostly focused on its direct effect on QoL (Iwasaki, 2007). Leisure in this study represents the availability of free time in daily life rather than an activity-based concept, and its moderating role in the financial literacy-fintech adoption-QoL link is examined. This study chooses leisure as a key moderator because it represents individuals' time availability and personal traits that affect fintech adoption. The literature suggests that leisure represents the degree of perceived freedom and internal locus of control. Those with high leisure value perceived freedom (Ellis and Witt, 1986), and there is a high correlation between perceived freedom and internal locus of control (Verme, 2009). Several studies (Schreier and Prügl, 2008; Hsia, 2016; Taffesse and Tadesse, 2017) indicate those with high locus control are more likely to adopt new technologies. Thus, leisure influences one's decision to adopt fintech.

The contributions of this study are threefold: First, using a proprietary dataset, this study presents evidence that financial literacy alone does not lead to a better QoL. The relationship is indirect and intricate, and a positive link is feasible with the mediating and moderating factors. Second, fintech adoption significantly mediates the relationship between financial literacy and QoL, highlighting the importance of digital literacy in today's increasingly digitalized society. Third, this study reveals a significant moderating role of leisure on fintech adoption. Individuals with high leisure time optimistically perceive the uncertainties and risks associated

with new technologies. Their internal locus of control makes them believe that adopting innovative technology rewards them with positive outcomes, resulting in a higher QoL.

The remainder of this paper is organized as follows. Section 2 reviews related literature and develops the hypotheses. Section 3 describes the data and the methodology used in this study. Section 4 presents the results and discusses the implications. Section 5 presents conclusions, research limitations, and suggestions for future work.

2. Literature review and hypothesis development

2.1 Financial literacy and quality of life

Many researchers have proclaimed the benefits of solid financial literacy. Financial literacy contributes to economic and financial stability and helps manage financial resources effectively (Adil *et al.*, 2021). She *et al.* (2022) indicate that financial knowledge positively leads to better financial behavior and well-being. On the other hand, a lack of financial literacy brings undesirable consequences such as excess borrowing (Sevim *et al.*, 2012) or investment scams (Mohd Padil *et al.*, 2022). Financial security in later life and retirement increases independence and control over one's life, leading to less anxiety and better mental health. Indeed, Lusardi *et al.* (2017) find that financial knowledge accounts for 30–40% of retirement wealth inequality. Thus, this study postulates that:

H1. There is a positive relationship between financial literacy and QoL.

2.2 The mediating role of fintech adoption

Some studies suggest that higher financial literacy may not automatically improve QoL. However, it does so through media such as attitude and behavior (Amonhaemanon and Isaramalai, 2020) or financial security (Pahlevan Sharif *et al.*, 2020). With the proliferation of smartphones and the development of fintech, financial services are increasingly digitalized. Kass-Hanna *et al.* (2022) argue that it is crucial for traditional financial literacy to align with worldwide fintech development by integrating digital financial literacy. Similarly, Jünger and Mietzner (2020) identify financial literacy as critical to the adoption of fintech products and services.

The COVID-19 outbreak has made the utilization of fintech a natural choice over traditional face-to-face transactions from a personal health risk management perspective. Daqar *et al.* (2021) find that fintech perceptions and behavior among consumers help reduce the spread of COVID-19 by capitalizing on contactless payments. Easing the fear of viral infection through use of fintech should improve QoL. Fintech enables users to avoid visiting bank branches, using ATMs, or making payments in cash. This gives fintech adopters some protection from infection during the pandemic.

Based on the literature reviewed above, this study proposes the mediating role of fintech adoption on the link between financial literacy and QoL.

H2. There is a positive relationship between financial literacy and fintech adoption.

H3. There is a positive relationship between fintech adoption and QoL.

H4. Fintech adoption mediates the relationship between financial literacy and QoL.

2.3 The moderating role of leisure

In this research, leisure is defined as the availability of free (Shaw, 1984) and unobligated time (Bedini and Phoenix, 2004). Free time is a luxury in today's daily life, with people immersing themselves in their professions. Retail financial services are an essential infrastructure in people's daily lives, but waiting in a long queue at a bank branch to make simple transactions is not exciting. Fintech allows people to save time by giving them banking capability at their

fingertips. Perceived usefulness in an often-cited technology acceptance model TAM (Davis *et al.*, 1989) is a significant attribute for fintech adoption in numerous studies (Shaikh *et al.*, 2020; Singh *et al.*, 2020). Discretionary time availability is a core element of leisure (Esteve *et al.*, 1999), so people with less leisure time are more likely to adopt fintech because of its perceived benefits of saving time.

Leisure in this study also represents personal traits. Perceived freedom is an essential criterion for leisure (Ellis and Witt, 1986). Verme (2009) find a significant relationship between perceived freedom and the internal locus of control, a personal trait in which individuals believe that they can control their lives. Several scholars (Schreier and Prüggl, 2008; Hsia, 2016; Taffesse and Tadesse, 2017) have found that those with high locus control are more likely to adopt new technologies. Adopting new technology is associated with risks and uncertainty, and those with a high internal locus of control voluntarily seek relevant information on the new technology to reduce risks. Leisure in this study broadly represents the degree of perceived freedom and internal locus of control, which presumably influence one's decision to adopt fintech.

A large body of literature indicates that leisure contributes to QoL regardless of country or culture (Michalos, 2005; Ritsner *et al.*, 2005). Leisure plays an integral role in subjective well-being and offers opportunities to meet life values and needs (Brajša-Žganec *et al.*, 2011). Thus, leisure can be a moderating factor in enhancing QoL, such as spiritual well-being (Heintzman and Mannell, 2003) and reduced life stress (Iso-Ahola and Park, 1996). This study tests leisure's moderating effect on the paths from financial literacy to fintech adoption and to QoL. Based on the literature reviewed above, this study proposes the following hypotheses:

H5. Leisure moderates the relationship between financial literacy and fintech adoption.

H6. Leisure moderates the relationship between financial literacy and QoL.

Figure 1 shows the proposed moderated mediation model and hypotheses. This model explains the relationship between financial literacy and QoL. The model examines how fintech adoption mediates the relationship and how leisure affects the paths from financial literacy to fintech adoption and QoL. In model estimation, we control for demographic factors.

3. Data and methodology

We conducted an online cross-sectional survey using convenience sampling. The target respondents are residents of Thailand, aged 20 years or older, living in and outside Bangkok. The respondents were informed that the survey is voluntary, and that their anonymity was

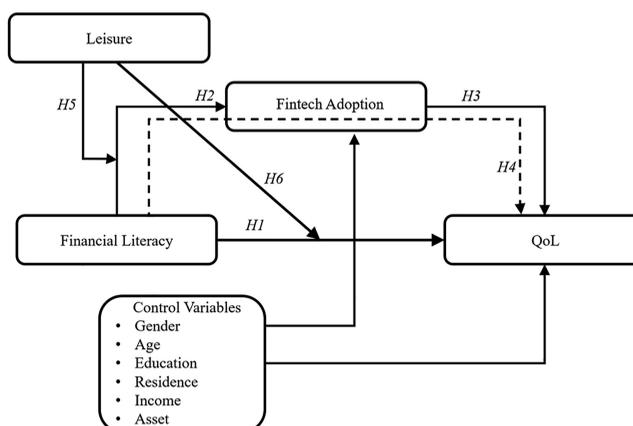


Figure 1.
Research model and
proposed hypotheses

guaranteed. Data were collected with an online survey via social media platforms such as Facebook and LinkedIn. The structured questionnaire consisted of five sections: 1) questions on the sociodemographic characteristics of the respondents, 2) The second to fifth sections measured their financial literacy, fintech adoption, QoL, and leisure using a five-point Likert scale. From the initial 359 responses obtained, after omitting incomplete responses, 345 responses were used in the analysis.

3.1 Respondent profile

Table 1 reports the respondents' sociodemographic characteristics. The majority of the respondents were female ($n = 222, 64.4\%$), younger than 40 years old ($n = 251, 72.7\%$), and residing in Bangkok ($n = 210, 60.9\%$). The most distinct characteristic of the sample is that they are highly educated, with at least a bachelor's degree ($n = 278, 80.6\%$). Although bachelor's degrees have become a minimum requirement for white-collar positions in Thailand (Grohmann, 2018), this may pose a bias. To address this issue, we controlled for demographic factors, including educational level in the statistical tests of the hypotheses. The largest income group were earning THB15,000–30,000 per month ($n = 109, 31.6\%$). According to the Bank of Thailand (2021), the average monthly salary for holders of bachelor's degrees is THB23,054 in the first quarter of 2021. More than half of the respondents had net worths below THB300,000 ($n = 182, 52.8\%$).

3.2 Measures

3.2.1 Financial literacy. Five multiple-choice questions from Van Rooij et al. (2011) were used to evaluate participants' basic financial knowledge on compound interest, time value of money, inflation, and nominal and real interest rates. The maximum financial literacy score was 5 and the minimum score was 0. Cronbach's alpha was 0.57. A reliability coefficient of 0.5 or higher indicates internal consistency (Bowling, 1997).

3.2.2 Quality of life. Quality of life was measured using the Satisfaction with Life Scale (Diener et al., 1985). The five positively-worded statements on life were rated on a five-point scale from "strongly agree" to "strongly disagree." An example of a statement is, "If I could live my life over, I would change almost nothing." The possible score ranges from 25 to 5, with a higher score representing a better quality of life. Cronbach's reliability was 0.82.

Variable	N	%	Variable	N	%
<i>Gender</i>			<i>Residence</i>		
Male	115	33.3	Bangkok Metropolitan Area	210	60.9
Female	222	64.4	Outside Bangkok Metropolitan Area	135	39.1
Prefer not to say	8	2.3			
<i>Age</i>			<i>Income</i>		
20–29	144	41.7	THB0–15,000 per month	92	26.7
30–39	107	31.0	THB15,000–30,000	109	31.6
40–49	51	14.8	THB30,001–50,000	83	24.1
50–59	35	10.2	THB50,001–100,000	43	12.5
60 or older	8	2.3	THB100,001 or higher	18	5.2
<i>Education</i>			<i>Asset</i>		
Elementary school	10	2.9	Less than THB300,000	182	52.8
High school	29	8.4	THB300,001–500,000	51	14.8
Vocational school	28	8.1	THB500,001–1,000,000	42	12.1
Bachelor degree	215	62.3	THB1,000,000–3,000,000	29	8.4
Master degree or higher	63	18.3	THB3,000,000 or more	41	11.9
Total	345				

Table 1. Socio-demographic of the respondents

3.2.3 Leisure. The measurement of leisure was developed by [Shaw \(1984\)](#). The five statements on the availability of time associated with enjoyment, relaxation, freedom of choice, motivation, and lack of evaluation, were rated on a five-point scale from “strongly agree” to “strongly disagree.” An example of a statement is, “I can freely choose activities that I am motivated to do.” The possible score ranges from 25 to 5, with a higher score representing greater availability of free time. Cronbach’s alpha was 0.86.

3.2.4 Fintech adoption. Fintech adoption was measured by actual use of fintech services. Most prior studies on fintech adoptions are based on the intention to use ([Daragmeh et al., 2021](#)). However, as the utility of fintech services is realized only through actual use rather than mere intention, this study focuses on the actual usage of fintech. Fintech adoption was measured using the frequency of fintech service use. The respondents were asked how frequently they used (1) digital banking, (2) digital payment, or (3) digital transfer ([Morgan and Trinh, 2020](#)). Usage frequency was scored on a 5-point scale: 5 for usage of more than once a week; 4 for once a week; 3 for once a month; 2 for less than once a month; and 1 for never having used the fintech function.

3.3 Data analysis

The present study employs [Hayes’s \(2018\)](#) PROCESS macro to assess the moderated mediation model. The proposed model specifies financial literacy as the independent variable, QoL as the dependent variable, fintech adoption as the mediator, leisure as the moderator, and gender, age, education, residence, income, and assets as the control variables in Model 8 of PROCESS macro ([Hayes, 2018](#)). The bootstrapping technique with 1,000 sample replications at a 95% confidence level yields robust standard errors for the parameter estimates. Advantages of PROCESS macro include avoiding sample size and degree of freedom restrictions ([Hair et al., 2010](#)) and providing accurate statistical inferences without complicated programming ([Hayes et al., 2017](#)). PROCESS differs from other methods such as structural equation modeling (SEM) in the estimation approach. PROCESS is regression-based and estimates the parameters of each equation separately. On the other hand, covariance-based maximum likelihood (ML)-SEM and component-based partially least squares (PLS)-SEM approach the entire system of equations simultaneously. [Hayes et al. \(2017\)](#) conclude that although PROCESS and SEM have different estimation methods and theories, differences in the results are insignificant and essential conclusions are not influenced by the choice of PROCESS or SEM.

The proposed moderated mediation model is estimated with the following equations ([Igartua and Hayes, 2021](#)):

$$M = i_M + \alpha_1 X + \alpha_2 W + \alpha_3 XW + \alpha_M C + \varepsilon_M \quad (1)$$

where X is the independent variable (financial literacy), M is the mediator (fintech adoption), W is the moderator (leisure), and C represents all control variables. [Equation \(1\)](#) is equivalent to

$$M = i_M + (\alpha_1 + \alpha_3 W)X + \alpha_2 W + \alpha_M C + \varepsilon_M = i_M + \theta_{X \rightarrow M} X + \alpha_2 W + \alpha_M C + \varepsilon_M \quad (2)$$

where $\theta_{X \rightarrow M} = \alpha_1 + \alpha_3 W$ is the conditional effect of X on M .

Y is the dependent variable (QoL) and specified by:

$$Y = i_Y + c'_1 X + c'_2 X + c'_3 XW + bM + \alpha_Y C + \varepsilon_Y \quad (3)$$

which takes an equivalent form as

$$Y = i_Y + (c'_1 + c'_3 W)X + bM + \alpha_Y C + \varepsilon_Y = i_Y + \theta_{X \rightarrow Y} X + bM + \alpha_Y C + \varepsilon_Y \quad (4)$$

where $\theta_{X \rightarrow Y} = c'_1 + c'_3 W$ is the conditional direct effect of X on Y . Multiplying the conditional effect of X on M and conditional effect of X on Y together returns

$$\theta_{X \rightarrow M} b = (\alpha_1 + \alpha_3 W) b = \alpha_1 b + \alpha_3 b W \tag{5}$$

as the conditional indirect effect of X on Y . This is a linear function of W . Thus, it is conditional on the values of W and $\alpha_3 b$, representing the moderated mediation index.

4. Results and discussion

Table 2 shows the descriptive statistics and correlations among the variables in this study. The mean score for financial literacy was 2.833, with a relatively wide standard deviation of 1.452. Given that respondents are highly educated individuals (more than 80% of them have at least a bachelor's degree), the different levels of financial knowledge among the samples pose challenges to the conventional educational system in improving citizens' financial understanding. Financial literacy is significantly correlated with fintech adoption. Financial literacy and QoL are not significantly correlated, but leisure had a significant positive relationship with QoL.

Table 3 shows the results of the moderated mediation model. Fintech adoption functions as a mediator in the relationship between financial literacy and QoL. Leisure moderates the link between financial literacy and fintech adoption as well as between financial literacy and QoL. The effects of gender, age, education, residence, income, and assets were controlled for connections with fintech adoption and QoL. We found that the relationship between financial literacy and QoL is not significant ($\beta = 0.032, p > 0.05$); thus, H1 is not supported. Financial literacy alone does not increase QoL. A possible explanation for the failure to support H1 lies in financial behavior. Amonhaemanon and Isaramalai (2020) assert that financial behavior, measured by the degree to which individuals have saved or made investment decisions after comparing information or considering information from trusted sources, is the most important factor in enhancing QoL. Financial literacy, to put it in another way, can be mere knowledge, yet it is a consequential action that matters in life.

Financial literacy is not directly related to fintech adoption ($\beta = -0.208, p > 0.05$), indicating that H2 is not supported. A recent study by Setiawan *et al.* (2021) reveals that financial literacy is less important than user innovativeness when adopting fintech. User innovativeness – the willingness to experiment with new technologies (Lu *et al.*, 2005) – is strengthened by the optimization of the external information (Yun *et al.*, 2020). This user innovativeness factor justifies H5, the positive moderation of leisure on the path from financial literacy to fintech adoption. Individuals with high leisure are the internals who are more innovative, proactive, and risk-taking (Miller *et al.*, 1982), an equivalent defining criterion for user innovation. The impact of perceived risks and uncertainty is significant when individuals make financial decisions (Murari *et al.*, 2021). Nonetheless, the combination of financial knowledge and internal locus of control overcomes the barrier to accepting innovative financial technologies.

Variable	Mean	SD	Financial literacy	Fintech adoption	Leisure
Financial literacy	2.833	1.452	–		
Fintech adoption	4.591	0.976	0.220*** (0.00)	–	
Leisure	3.409	0.901	0.063 (0.24)	–0.054 (0.31)	–
QoL	3.219	0.856	–0.023 (0.668)	–0.001 (0.99)	0.558*** (0.00)

Note(s): The table reports the summary statistics and the Pearson correlation matrix between the variables. The p -values are shown in the brackets. *** denotes the significant level at 0.1%

Table 2. Summary statistics and correlation

Table 3.
Results of moderated
mediation model

Path	Standardized coefficient	<i>p</i> -value
<i>Moderated mediation model</i>		
Financial literacy → Fintech adoption	-0.208	0.126
Leisure → Fintech adoption	-0.327*	0.015
Financial literacy × Leisure → Fintech adoption	0.082*	0.046
Financial literacy → QoL	0.032	0.778
Fintech adoption → QoL	0.078*	0.041
Leisure → QoL	0.590***	0.000
Financial literacy × Leisure → QoL	-0.024	0.475
<i>Control variables</i>		
Gender (Female) → Fintech adoption	0.004	0.970
Age → Fintech adoption	-0.157**	0.004
Education → Fintech adoption	0.395***	0.000
Residence (outside Bangkok) → Fintech adoption	0.061	0.538
Income → Fintech adoption	0.031	0.558
Asset → Fintech adoption	0.005	0.906
Gender (Female) → QoL	0.170*	0.029
Age → QoL	0.054	0.163
Education → QoL	-0.081	0.092
Residence (outside Bangkok) → QoL	0.031	0.699
Income → QoL	0.044	0.322
Asset → Fintech QoL	0.059	0.072

Fintech adoption significantly affects QoL ($\beta = 0.078, p < 0.05$), supporting H3. The result indicate that digital literacy is a critical element of financial literacy in today's increasingly digitalized society. Those who have adopted fintech are digitally literate, and they have broader access to new information and knowledge acquired and shared through digital channels such as blogs and social media. Fintech adoption results from continuous learning because individuals need a willing attitude and flexibility to learn modern technology. Continuous self-improving learning enhances the knowledge and skills to improve QoL (Laal *et al.*, 2014).

Table 4 reports the pathways between financial literacy and QoL via fintech adoption at different levels of leisure. The conditional indirect effect is weakly significant, and only at a high level of leisure with a mean plus one standard deviation ($\beta = 0.012, p < 0.10$). The conditional indirect effect is not significant at a mean level or lower. Thus, H4, the mediation effect of fintech adoption, is supported given that the moderation effect of leisure is at a high level. Table 3 indicates leisure moderates the relationship between financial literacy and fintech adoption—a significant positive effect ($\beta = 0.082, p < 0.05$), supporting H5. In other words, H4 is supported by the collaboration between H3 and H5. Figure 2 graphically presents the mediating relationship between financial literacy and QoL through fintech

Table 4.
Summary of indirect
effects at different
levels of leisure

Different levels of the moderator leisure on the indirect effect	Coefficient	<i>p</i> -value	LLCI	ULCI
Low Leisure (mean minus one SD = -1)	-0.001	0.986	-0.008	0.009
Mean Leisure	0.006	0.154	-0.001	0.015
High Leisure (mean plus one SD = +1)	0.012♦	0.082	-0.001	0.025

Note(s): CI = 95% confidence level for indirect effect between financial literacy and QoL via fintech adoption. If CI does not include zero, the indirect effect is considered statistically significant at 5% level. ♦Denotes the significant level at 10%

adoption for varying levels of leisure. It indicates that financial literacy does not affect fintech adoption when leisure is low, whereas there is a linear relationship between financial literacy and fintech adoption when the leisure level is high. Figure 2 also illustrates that when leisure is low, fintech adoption is relatively high regardless of financial literacy. This reflects the behavior of people who are immersed in their busy daily lives and utilize fintech to save time (Setiawan *et al.*, 2021). However, the level of fintech adoption with low leisure is not significant for a better QoL. The moderation effect is only significant when leisure is high. In other words, the interaction between high financial literacy and high leisure induces higher fintech adoption, leading to a higher QoL. This moderated mediation effect of fintech and leisure signifies the value of active learning in improving QoL. Financial literacy provides economic benefits, but financially literate individuals must actively seek new information and adjust to a constantly changing society. Leisure comes into play when adopting an unfamiliar product or service. Individuals with high leisure deal with uncertainty associated with new technology by searching for relevant data and evidence. The knowledge and experience gained through technology adoption lead to greater personal human capital and well-being.

Leisure has a strong significant positive relationship with QoL ($\beta = 0.590, p < 0.001$), but its moderating effect on the relationship between financial literacy and QoL is insignificant ($\beta = -0.024, p > 0.05$). Thus, H6 is not supported. Financial behavior explains the failure to support H6. Individuals with high leisure tend to be the internals. People with high internal control ascribe their results to themselves, and their sense of responsibility is sometimes excessive (Davis and Davis, 1972). Mutlu and Özer (2022) conclude that when financially literate individuals have a high internal locus of control with high responsibility and anxiety, their self-responsibility level rises even further. This results in a more complicated financial decision-making process, which leads to a deterioration of financial behavior.

For the control variables, we found that younger respondents ($\beta = -0.157, p < 0.05$) and levels of higher education ($\beta = 0.395, p < 0.05$) have a significantly higher tendency to adopt fintech, and women have a higher QoL ($\beta = 0.170, p < 0.05$).

5. Conclusion

This study provides novel evidence on the indirect relationship between financial literacy and QoL, highlighting the mediating effect of fintech adoption and the moderating effect of leisure on the relationship. The utilization of financial technology is a key to a better life in today's increasingly digitalized society. The novelty of this study is that it focuses on fintech usage by the general public, as most previous research on fintech adoption is related to financial inclusion for the unbanked population in underprivileged rural areas. In addition, the study

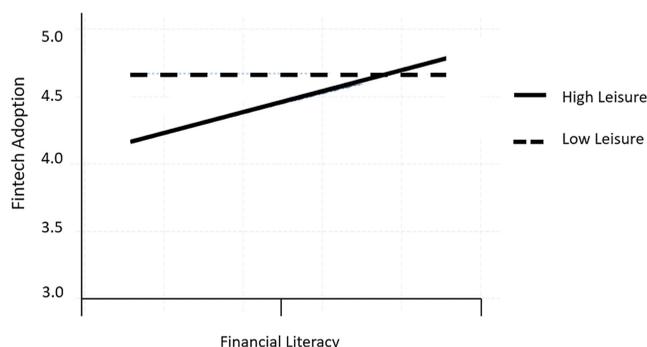


Figure 2. Graphical representation of the moderating effect of leisure on the relationship between financial literacy and fintech adoption

reveals the significance of leisure, as those who have high financial literacy are more likely to adopt fintech when they have high perceived freedom, which leads to higher QoL.

The implications of this study are that fintech usage should be promoted as a fundamental life skill at the same level as financial literacy. Financial literacy is no longer mere numerical skills and knowledge of the capital market; it needs to incorporate digital literacy to utilize innovative technology for more efficient financial management. As the digitalization of financial services continues in the finance industry, users need to equip themselves with adequate digital knowledge as an essential life skill. Policymakers have attempted to implement financial education programs for the public, but such programs need to update the content in line with today's digitalized society. New evidence suggests that digital financial literacy positively affects financial behavior and decision-making (Andreou and Anyfantaki, 2021). Furthermore, digital literacy increases the awareness of financial scams and fraud, which are often solicited online. Digital literacy is not only a skill to maneuver electric devices but also to manage, integrate, and process information. Thus, policymakers should recognize digital literacy as a catalyst that leads to a more secure and stable society.

Another implication is that a sense of control over life outcomes can lead to well-being. Based on the existing literature on the link between leisure, perceived freedom, and internal locus of control, this study shows that individuals with high leisure are more likely to perceive the uncertainties and risks associated with new technology optimistically. Those with an internal locus of control possess a strong belief in the relationship between effort and rewards, and seek more information to use the new technology more effectively (Tseng and Hsia, 2008). Chang *et al.* (2009) agree that problem-solving skills enhance well-being. Education programs for citizens, especially young students, targeting the improvement of digital financial literacy as well as the acquisition of internal locus of control are encouraged for the benefit of society. The limitations of this study include the effect of COVID-19 on individuals' behavior. COVID-19 was a catalyst for change (Mansour, 2022), and the new normal situation during the pandemic inescapably affected their fintech usage. Stay-at-home and work-from-home policies imposed by local authorities and private firms might have affected their leisure, because these policies generally increased free time. A relevant question for future research would be whether nonpayment fintech services can improve the relationship between financial literacy and QoL. New fintech services such as peer-to-peer lending, robo-advisors, and insurtech are gaining momentum among tech-savvy households. The synergy that financial and digital literacy create for better well-being can be further explored.

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Appendix

Measurement questions are available at: <https://drive.google.com/file/d/13KRvIj9kCYhYBKd9DCaW5WO9W-aERgZO/view?usp=sharing>.

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