

Financial Literacy, Digital Financial Literacy and Women's Economic Empowerment

Study in West Sumatera, Indonesia

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Abstract: There have many been studies on women's economic empowerment (WEE), most related to financial literacy (FL). However, in this digital era marked by the emergence of Fintech, FL needs to be expanded into digital financial literacy (DFL), in making good financial decisions, especially regarding Fintech products. Hence, the study aims to investigate the influence of DFL and FL on WEE. In this study, 259 female respondents participated. Using the PLS Structural Equation Modelling, the study found that both DFL and FL had a positive and significant effect on WEE. However, further analysis found that DFL affects all 5 dimensions of WEE. Meanwhile, FL only affects 3 components of WEE. In addition, the results also show that DFL has a much greater influence on WEE compared to FL. These results prove that, in this digital era, FL is not sufficient for making good financial decisions, but more understanding is needed, especially related to digital literacy. These results are expected to provide a new understanding of the importance of the DFL variable in the study of WEE, as well as input for the Indonesian government to give more consideration to DFL in making policies related to WEE.

Keywords: Digital Financial Literacy, Financial Literacy, Women's Economic Empowerment, Financial Wellbeing, Developing Countries

Introduction

Issues and discussions about women have always been the focus of attention in many countries. This is due to the significant contribution of the female population to the world population, which are 49.7% of the total ([World Bank, 2021](#)). Based on data from the World Bank, there has been an increase in the number of working women in many countries. In the USA, it is recorded that the number of working women has reached 50% of the workers ([Ul-Hameed et al., 2018](#)). Meanwhile, in Indonesia, according to Central Statistics Agency ([BPS, 2020](#)) data in 2020, the number of women has reached 133.54 million people or 49.42% of the total population, and the number of working women has reached figure 46.1% of total workers.

Attention to women is not only because of their numbers, but also because of the amount of contribution they make to the country's economy. According to Peterson ([2019](#)), the contribution of working women is estimated as US\$5.87 trillion of global market capitalization. Similarly, in Indonesia, the International Finance Corporation ([2016](#)) stated that the contribution of working women to the Gross Domestic Product (GDP) reached 9.1% of total GDP. This value is expected to be even greater if women are given equal opportunities to participate in economics. It was mentioned by Indonesian Finance Minister, Sri Mulyani, that women's contribution to the world's GDP could reach 26% of the world's GDP if they had the same opportunity to participate in the economy ([Putri, 2021](#)).

Based on this condition, it is not surprising that in 2016 the World Bank established women's empowerment as one of the basic principles of sustainable development. Various efforts are made by the governments in many countries in the context of empowering women, especially empowerment in the economic sector, as it is a major component of women's empowerment ([Kumari et al., 2020](#)).

It cannot be denied that there have many been studies conducted related to the factors influencing women's economic empowerment (see [Batra, 2013](#); [Beckmann, 2013](#); [Bhushan, & Medury, 2013](#); [Arrondel & Savignac, 2013](#); [Maheswari & Revathy, 2016](#); [Roy & Jain, 2018](#); [Kumari et al., 2020](#)). Among those studies, the majority of them found financial literacy (FL) as a determinant factor of women's economic empowerment (WEE). According to Golla *et al.* ([2011](#)), women are considered to be economically empowered if they have abilities to succeed and advance economically, and have the power to make the right economic decisions. It is mentioned in the literature that, to be economically empowered, of course, they must have adequate knowledge about financial planning and management, known as FL. FL is defined as a person's ability to understand, analyze, manage and communicate personal financial problems ([Prasad et al., 2018](#)). FL can also include an individual's understanding of financial products and services in the context of making financial decisions. Therefore, many studies

often link FL and WEE ([Haque & Zulfiqar, 2016](#); [Kumari et al., 2020](#); [Lyons, Kass-Hanna et al., 2019](#); [Postmus et al., 2013](#), [Arora, 2016](#); [Batra, 2013](#); [Dash et al., 2016](#); [Deka, 2015](#); [Kabeer, 2012](#); [Siddik, 2017](#)). Postmus *et al.* (2013) examined the relationship between FL and the economic empowerment of women victims of violence, with a sample of 120 victim women. The study found that there is a positive and significant relationship between the level of FL and WEE. In line with this, Haque & Zulfiqar, (2016) also found that FL has a significant influence on the economic empowerment of 300 female workers in Pakistan. Likewise, Kumari *et al.* (2020) also found that the level of FL is the dominant factor in WEE, especially for poor women in Sri Lanka. This is also supported by other studies such as Arora (2016), Batra (2013), Dash *et al.* (2016), Deka (2015), and Siddik (2017).

From the explanation above, it can be seen that the literature agrees that FL is one of the main antecedents of WEE. However, according to Rahayu, Ali *et al.* (2022), Setiawan *et al.* (2020), Morgan *et al.* (2019) and Rahaya, Juita *et al.* (2022), the emergence and development of Fintech (financial technology) has changed the way and behaviour of individuals in making financial decisions. As we know, Fintech has revolutionized the financial services sector substantially ([Frost et al., 2019](#)). Fintech does not only offer advantages, such as process speed, cost savings and convenience ([Frame et al., 2019](#)), but it also has negative effects by triggering impulsive consumer behaviour and consumerism ([Panos & Wilson, 2020](#)). In addition to this, another risk associated with this digital financial product is the risk of fraud, loss of money, scams, and data theft. Hence, to be able to make appropriate financial planning and decisions, a higher level of financial sophistication is required to effectively utilize fintech products and services, and avoid costly fraud and errors ([Morgan et al., 2019](#)). This condition shows that, in this digital era, customers need to be accompanied by adequate knowledge and understanding of this digital finance, which is known as digital financial literacy (DFL) ([Panos & Wilson, 2020](#)). So, when we discuss women's economic empowerment in this digitalization era, of course, FL is no longer adequate. It is also necessary to consider DFL in this study. Accordingly, in this study, both DFL and FL are considered as antecedent variables of WEE.

Currently, there are still limited studies on DFL. Some of the recent studies that focus on DFL are as follows: Prasad *et al.* (2018); Tony & Desai (2020); Setiawan *et al.* (2020); Rahayu, Ali *et al.* (2022); and Rahaya, Juita *et al.* (2022). Of these studies, two were conducted in India, namely Prasad *et al.* (2018) and Tony & Desai (2020), while the research of Setiawan *et al.* (2020); Rahayu, Ali *et al.* (2022); and Rahaya, Juita *et al.* (2022) was carried out in Indonesia. Research conducted by Prasad *et al.* (2018) focuses more on mapping DFL in households in India. Meanwhile, Tony & Desai (2020) aims to see the relationship between DFL and financial inclusion in general; they found that DFL has an effect on financial inclusion. Meanwhile, Setiawan *et al.* (2020) and Rahayu, Ali *et al.* (2022) examined the relationship

between DFL and people's saving and shopping behaviour in Indonesia, and they found that DFL has influenced saving and shopping behaviour of the millennial generation. Then, Rahaya, Juita *et al.* (2022) tried to investigate the relationship between DFL and financial behaviour and financial wellbeing, and found there was a relationship between them. Based on these studies, it can be seen that, recently, DFL has been recognized as an important factor in the study of financial behaviour. A good level of DFL can lead an individual to make good financial decisions through avoiding costly risks and errors, and this is certainly an effect that contributes to increasing economic empowerment, especially for women. Due to limited studies related to DFL, especially in a WEE study, this is certainly proposed as a novelty of this research.

Furthermore, based on the report submitted by the United Nations Development Program (UNDP) in 2019, summarized by Xiao (2021), Indonesia's financial literacy level score is still low compared to the average literacy rate of Southeast Asian countries, such as Malaysia, Singapore, and Myanmar. For the DFL score, it is estimated that Indonesia's position is also not much different from the level of FL, which is still below the average. This condition certainly needs more attention from various parties, including academics, especially to study what factors affect the level of DFL and also to measure the level of DFL in Indonesia, especially Indonesian women. Some studies have found that socio-demographic factors, such as age, educational level, marital status, income, and job status, have an important role in affecting FL and DFL (Setiawan *et al.*, 2020; Rahayu, Ali *et al.*, 2022; Nanziri & Olcker, 2019; Wangmo, 2018). Thus, in addition to looking at the influence of FL and DFL on WEE in Indonesia, this study will also examine the effect of socio-demographic factors on FL and DFL of women in Indonesia.

Theoretical Framework

Women's empowerment is mentioned by Kasturirangan (2008) as the process by which a person gains control or power of their own life. This empowerment can include many things from an individual's life, including control or power related to financial or economic problems. So, in this regard, women's economic empowerment (WEE) refers to individual abilities and skills, as well as individual confidence in overcoming problems of their own financial wellbeing (Postmus *et al.*, 2013). Moreover, Kumari *et al.* (2020) defined WEE as the ability of women to decide for themselves how to spend their resources, and it promotes the prosperity of families and communities. Kumari *et al.* (2020) also mentioned that WEE has 5 dimensions, namely, the ability to make economic *decisions* (economic decision-making power); control over the use of income and expenditures; leadership in society; control over time allocation; and financial wellbeing. These five dimensions will later be used in this study to measure WEE.

Meanwhile, the majority of earlier researches described the definition of FL from various angles. Prasad *et al.* (2018) revealed FL as a person's ability to understand, analyze, manage and communicate personal financial problems. Then, the Organization for Economic Cooperation and Development (OECD) in Mourougane (2012) defined FL as the ability to make sound financial decisions, improve the financial circumstances of individuals and communities, and engage in the economy. It includes having knowledge of financial concepts and risks as well as the skills, motivation, and confidence to put that knowledge and understanding to use. Additionally, Bhushan & Meduri (2013) explored the possibility of moving towards a formal financial system by empowering people to make decisions through FL. Then, Bonga & Mlambo (2016) argue that a person who is financially literate may manage the nation's formal financial system and significantly boost their community's economy. In this regard, a good level of FL will guide individuals or communities in making financial planning and making good and effective financial decisions, and this will later have an impact on improving the welfare of individuals or communities (OJK, 2017). Therefore, the discussion of WEE has always been associated with discussions about FL (Batra, 2013; Beckmann, 2013; Bhushan & Medury, 2013; Arrondel & Savignac, 2013; Maheswari & Revathy, 2016; Roy & Jain, 2018; Lyons, Grable *et al.*, 2019; Kumari *et al.*, 2020).

With the emergence of Fintech, higher levels of understanding of digital finance are required to improve access to financial services through Fintech, so an individual can effectively use the Fintech product to avoid behavioural problems such as mis-selling, or scams such as phishing, hacking, data leaks, discriminatory treatment and over-borrowing (Morgan *et al.*, 2019). This is well known as DFL. Morgan *et al.* (2019) revealed that DFL consists of 4 dimensions, which are understanding of digital financial products and services, awareness of the risks of digital financial products and services, knowledge of digital financial risk control, and knowledge of consumer rights and redress procedures.

Recent studies conducted by Aggarwal *et al.* (2019) found that digital payments caused overspending behaviour in India. Then, Moenjok *et al.* (2020) also mentioned that Fintech has an impact on financial behaviour/attitude and also financial knowledge. As Fintech offers more sophisticated products to meet needs, so customers need to adjust their knowledge to greater sophistication by experimentation, or learning by doing. In addition, Panos & Wilson (2020) said that the development of Fintech can also damage financial wellbeing by triggering impulsive/spontaneous consumer behaviour when interacting with technology and digital financial platforms. Then, Zheng *et al.* (2019) also provide evidence that mobile users are more likely to engage in impulsive buying behaviour and also associate with the use of payday loans (Garrett *et al.*, 2014). Moreover, Panos and Karkkainen (2019) also found that FL is negatively related to cryptocurrency ownership. The study mentioned that consumers with FL still do not

have an adequate understanding that, in fact, the risks they will receive are greater than the benefits they will get. The dominance of the market by investors who largely lack digital literacy is what is suspected to be the driving factor for the volatility of cryptocurrency. Therefore, in this digital era, DFL is something that is very important to consider. Since DFL has significant influence on financial behaviour ([Rahayu, Ali et al., 2022](#); [Setiawan et al., 2020](#)) and financial wellbeing ([Rahayu, Juita et al., 2022](#)), in this study DFL is also included as a factor affecting WEE.

Therefore, based on the above explanation, it can be hypothesized that:

Hypothesis 1: the financial literacy of women in Indonesia has a significant influence on women's economic empowerment.

Hypothesis 2: the digital financial literacy of women in Indonesia has a significant influence on women's economic empowerment.

As previously described, in this study the variable of women's economic empowerment consists of 5 dimensions; hence, these hypotheses will be broken down into:

Hypothesis 1a: the financial literacy of women in Indonesia has a significant influence on the ability to make economic decisions.

Hypothesis 1b: the financial literacy of women in Indonesia has a significant influence on the control of the use of income and expenditure.

Hypothesis 1c: the financial literacy of women in Indonesia has a significant influence on leadership in society.

Hypothesis 1d: the financial literacy of women in Indonesia has a significant influence on the control over time allocation.

Hypothesis 1e: the financial literacy of women in Indonesia has a significant influence on financial wellbeing.

Hypothesis 2a: the level of digital financial literacy of women in Indonesia has a significant influence on the ability to make economic decisions.

Hypothesis 2b: the level of digital financial literacy of women in Indonesia has a significant influence on the control of the use of income and expenditure.

Hypothesis 2c: the level of digital financial literacy of women in Indonesia has a significant influence on leadership in society.

Hypothesis 2d: the level of digital financial literacy of women in Indonesia has a significant influence on the control over time allocation.

Hypothesis 2e: the level of digital financial literacy of women in Indonesia has a significant influence on financial wellbeing.

Methodology

This study was conducted in Indonesia region West Sumatera. Currently, based on data from the Indonesian Central Statistics Agency (BPS, 2020), the female population in 2022 has reached 136 million people, including infants, children and the elderly. Since the focus of this study is women's economic empowerment, the targeted respondent is, of course, an adult woman of productive age. For productive age, it is estimated that the number is 50% of the total female population, so the total population in this study is approximately 68 million people. Because of the very large population spread over a very wide area, this study will be limited to women in West Sumatera. This region was chosen because, based on the BPS data, the number of women in this region is quite large, so they are expected to reflect women in Indonesia. In addition to this, West Sumatera is one of the regions in Indonesia that adheres to matrilineal society, which is a society that adheres to a kinship system in which ancestral descent is traced through maternal instead of paternal lines. In this society, women have an important role in making decisions on society. This condition is certainly interesting to be studied.

In this study, the data were gathered by using an online structured questionnaire. Due to the large numbers of population, the snowball sample technique was applied. According to Neuman (2003), this technique is appropriate for a study that has a very large population and also does not have definite figures. In this technique, questionnaires were sent to several women's groups in West Sumatera through social media, and then members of these groups would be asked to distribute the questionnaire to other women's groups they knew. In this way, it is expected that the response rate will be increased. The data were collected from October to December 2022, and, during that time, 334 questionnaires were returned. However, due to incompleteness of data, 75 questionnaires were declined. Hence, in this study there are 259 data points available for further processing.

Then, the data were analyzed with Structural Equation Model (SEM). There are 3 latent variables tested in this study, which are FL, DFL, and WEE. In this regard, FL was measured by 9 indicators, with true and false answers that was adopted from Wise (2013). Then, DFL was measured by 17 indicators, using 5-point Likert scales, starting from 1 (poor/very low) to 5 (excellent/very high). These indicators are used to assess 4 elements, which are understanding of Fintech products, awareness of the risks of Fintech products, knowledge of digital financial risk control, and knowledge of consumer rights and compensation procedures. This instrument is also used by other studies, such as the research of Setiawan *et al.* (2020) and Prasad *et al.* (2018). Meanwhile, in this study, WEE consists of 5 dimensions, which are ability to make economic decisions, control to use income and expenditure,

leadership in society, control to allocate time, and financial wellbeing (Kumari *et al.*, 2020). These 5 dimensions are later to be outlined in 26 questions developed by previous research, such as Postmus *et al.* (2013) and Kumari *et al.* (2020).

Results and Findings

Characteristics of respondents

This study uses 259 samples from West Sumatera. These numbers have met an adequate sample size as suggested by Tabachnick & Fidell (2013), in which “50+8m” (m refers to the number of independent variables) is an adequate sample size. Since the number of independent variables is two, the minimum sample should be 66 samples. Thus, the 259 samples are considered to have met the minimum sample requirements. The respondents participating in this study varied in age, starting from age 15 until 60 years old. These respondents are then classified based on their generation. In this regard, 118 of Z generation, who were born in 1997 to 2012, participated; and they were followed by 78 respondents from generation Y, who were born in 1981–1996; and 63 respondents from generation X, who were born in 1965–1980. Table 1 represents the profile in terms of their generation, marital status, job status, educational level, residential location and income.

Table 1. Respondents' Profiles

Generation	Total	Residential Locations	Total
Generation Z	118	in a Remote Village	8
Generation Y	78	in the Village	40
Generation X	63	in the District Capital	54
Total	259	in the Provincial Capital	157
Job Status		Total	259
Student	105	Income	
Not Working	33	Below IDR* 2,000,000	124
Working	121	IDR 2,000,000 to 4,000,000	43
Total	259	IDR 4,000,001 to 6,000,000	28
Education Level		IDR 6,000,001 to 8,000,000	15
Junior High School	9	IDR 8,000,001 to 10,000,000	12
Senior High School	92	More than IDR 10.000.000	37
Diploma I, II, III	6	Total	259
Bachelor/Diploma IV	71	Marital Status	
Masters Degree	67	Unmarried	137
Doctoral Degree	14	Married	111
Total	259	Divorced	11

*IDR 14.500 = 1 USD

From all these tables, it can be seen that the respondents who participated in this study varied in terms of their generation, level of education, marital status, employment status, location of residence, and income.

The level of Digital Financial Literacy and Financial Literacy

In order to see the level of DFL and FL of women in Indonesia, the following table presents the average score for DFL and FL.

Table 2. The level of Digital Financial Literacy and Financial Literacy

No.	Description	N	Minimum	Maximum	Mean	Std Deviation
1	DFL Score	259	1.00	5.00	3.83	.672
2	FL Score	259	1.00	9.00	7.15	1.34

Table 2 shows that the average score of DFL of women in West Sumatera is 3.83. Since the average number is in the range 3.40–4.19 (see [Alkharusi et al., 2012](#)), it is considered that, on average, the DFL level of the women in West Sumatera is quite good. Meanwhile, the average score of FL for women in West Sumatera is 7.15. It means that, among nine questions related to FL, the women in West Sumatera can answer 7 questions correctly. This figure is, of course, quite satisfying, because the women have been able to answer 77% of the FL questions correctly.

Further, in order to investigate whether the demographic factors such as age, marital status, job status, educational level, residential locations and income have an effect on the FL score and the DFL score, this study calculated the FL and the DFL scores of each group, as presented in Table 3.

Table 3. The Average Score of The DFL and FL

	Average Score			Average Score	
	DFL	FL		DFL	FL
Generation			Occupation		
Generation x	3.6	7.22	Student	3.92	7.09
Generation y	3.84	7.18	Not Working	3.47	6.75
Generation z	3.95	7.08	Working	3.85	7.29
Marital Status			Residential Location		
Married	3.64	7.21	In a remote Village	2.60	5.63
Unmarried	4.00	7.08	In the Village	3.66	6.6
Divorced	3.57	7.18	In the District Capital	3.74	6.91
Educational level			In Provincial capitals	3.96	7.45
Junior High School	2.95	5.88	Income		
Senior High School	3.73	6.65	Below IDR. 2,000,000	3.72	6.83
Diploma I, II, III	3.96	6.5	IDR 2,000,000–4,000,000	3.97	7.16
Bachelor/Diploma IV	3.95	7.57	IDR 4,000,001–6,000,000	4	7.79
Masters Degree	3.93	7.58	IDR 6,000,001–8,000,000	3.95	7.33
Doctoral Degree	3.91	7.58	IDR 8,000,001–10,000,000	3.85	7.33
			More than IDR 10.000.000	3.86	7.57

Table 3 shows that the women in the Z generation tend to report a higher score than the older generation. This contrasts with the FL score, in which the FL scores tend to increase with increasing age. This condition can be explained reasonably. As the DFL reflects a person's ability related to digital products, and the Z generation, who were born in the digital era, of

course have a high ability to adapt to the information technology innovation, so they can easily understand everything related to these digital products. In contrast, FL reflects a person's ability to use their financial skills and knowledge to manage financial resources effectively (Bahonar & Sadrabadi, 2014), and this ability will usually be experienced with age. Therefore, this study shows that the older generation reported a higher score of FL than the younger generation.

In regard to marital status, the data shows that unmarried women tend to report higher scores of DFL than other groups. Divorced women show the lowest result of DFL score. However, for the FL score, the data shows that unmarried women even reported the lowest score of FL compared to married women and divorced women. This condition can be explained in similar way with the previous one. In this study, the unmarried women are dominated mainly by the younger generation (Z generation), which is well known as the digital generation; hence, they tend to have higher capability to deal with digital innovation compared to the older generation. Therefore, it is not surprising that this generation reported the highest score of DFL. In contrast, since the younger generation has limited experience in making financial decisions compared to the older generation, they also have limited knowledge and understanding of FL. So, in this study we found that unmarried and young women reported the lower score of FL than others.

Next, Table 3 also shows that both the DFL and FL scores appear to rise as education levels increase. In this case, the lower levels of education tend to report the lower scores of DFL and FL. This is common, since the education level is strongly related to individual capability and understanding, including literacy.

Furthermore, in association with the job status, this study found that women studying reported a higher score on the DFL score compared with the group of working women and non-working women. However, for the FL score, it is seen that working women have a higher score of FL than other groups. Then, based on residential location, it can be seen in the table that the women who live in an urban area reported the higher level of DFL and FL than the women who live in rural areas. This finding is reasonable, since the women who live in rural areas have limited access to information sources and technology. Thus, they certainly tend to have limited knowledge and understanding of DFL and FL.

In addition, this study found increasing income up to a certain level causes the DFL and FL scores to rise. This condition might happen because those who are at a certain income level tend to feel comfortable with their current position, so that they are no longer trying hard to improve their knowledge and understanding of FL and DFL.

Data analysis

In order to investigate the relationship between the DFL and FL on women's economic empowerment, the Structural Equation Model (SEM) Partial Least Square (PLS) method was applied. As described earlier, there are two main hypotheses, which are to investigate the influence of the DFL on WEE (H1), and the influence of FL on WEE (H2). In order to test the main hypotheses, all of the constructs of DFL and FL were calculated to see the direct effect of both variables on WEE. Table 4 shows the result.

Table 4. Significance of the Direct Relationship between the DFL, FL and WEE Path

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistic (O/STDEV)	P Value
Total FL -> Total WEE	0.119	0.116	0.059	2.023	0.044
Total DFL -> Total WEE	0.485	0.482	0.061	8.014	0.000

Based on the data analysis, it is found that the R squared value in this model is 0.285 or 28.5%. As stated by Cohen (1988), with R squared above 26%, the ability to explain exogenous variables to endogenous variables can be classified as a substantial influence; thus, it is indicated that there is substantial influence of DFL and FL on WEE. Furthermore, the result also demonstrated that 11.9% of WEE is represented by FL among women in West Sumatera; and 48.5% of WEE is also represented by DFL among women in West Sumatera. The p value and t statistic also reflect that there are positive and significance influence between DFL and WEE; and between FL and WEE. The table also shows that, among the two variables, FL and DFL, DFL was noticed as the more influential variable on WEE. Therefore, in this study, Hypothesis 1 and Hypothesis 2 were empirically supported by the data.

Further, in this study, several sub-hypotheses were developed with the purpose of determining the most significant dimension of WEE influenced by DFL and FL. Even though DFL consists of 4 dimensions, in order to see the effect of DFL on another variable, in this regard WEE, DFL is considered as one variable and it is not separated based on the dimensions that form it (see [Setiawan et al., 2021](#) and [Rahayu. Ali et al., 2022](#)).

Hence, in this study, the influence of DFL and FL on the WEE dimensions are investigated through several steps, which are evaluation of the measurement model, evaluation of the structural model and hypothesis testing. The first step is evaluation of the measurement model, which aimed to test whether the question indicators used to measure variables in this study are valid and reliable. According to Hair et al. (2017), factor loading (> 0.4), composite reliability, Cronbach Alpha (>0.6), Average Variance Extracted (>0.5), and Fornell Larcker can be used to indicate whether the measures are valid and reliable. Table 5 shows the result of factor loading, composite reliability, Cronbach Alpha, and Average Variance Extracted after removing 6 indicators that have loading factor below 0.4.

Table 5. Factor Loading, Composite Reliability, Cronbach Alpha and AVE

Variable	Dimension	Indicator	Factor loading	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
DFL		LKD10	0.647	0.940	0.95	0.51
		LKD11	0.723			
		LKD12	0.774			
		LKD13	0.817			
		LKD14	0.817			
		LKD15	0.716			
		LKD16	0.623			
		LKD17	0.710			
		LKD1	0.700			
		LKD2	0.728			
		LKD3	0.501			
		LKD4	0.473			
		LKD5	0.755			
		LKD6	0.752			
		LKD7	0.767			
		LKD8	0.777			
LKD9	0.798					
FL		TLK	1.000	1.000	1.00	1.00
Women's Economic Empowerment	Economic decision-making power (WEE1)	YA1	0.824	0.904	0.924	0.637
		YA2	0.876			
		YA3	0.802			
		YA4	0.824			
		YA5	0.784			
		YA6	0.776			
		YA7	0.688			
	Control over the use of income and expenditures (WEE2)	YB1	0.738	0.859	0.892	0.580
		YB3	0.697			
		YB4	0.747			
		YB5	0.819			
		YB6	0.787			
	Leadership in society (WEE3)	YC1	0.724	0.852	0.893	0.626
		YC2	0.800			
		YC3	0.767			
		YC4	0.806			
		YC5	0.853			
	Control over time allocation (WEE4)	YD1	0.624	0.794	0.842	0.574
		YD2	0.754			
		YD3	0.799			
YD4		0.837				
Financial Wellbeing (WEE5)	KK10	0.671	0.848	0.889	0.574	
	KK11	0.782				
	KK2	0.766				
	KK4	0.635				
	KK8	0.852				
	KK9	0.816				

From Table 5, it can be seen that all of the indicators used in this study have meet validity and reliability requirements. Therefore, the next step, which is evaluation of the structural model, is processed further. In this stage, PLS bootstrapping is performed. The result can be seen in Table 6.

Table 6. Path Coefficient

	Control over time allocation	Leadership in society	Financial Wellbeing	Control over the use of income and expenditures	Economic decision-making power
FL	0.141	0.029	0.099	0.147	0.145
DFL	0.296	0.286	0.404	0.465	0.279

This path coefficient shows the magnitude of the influence between exogenous variables and endogenous variables. From the table, it can be seen that FL only influences the three dimensions of women's economic empowerment at most of 0.147 or 14.7%. Meanwhile, DFL can influence all of the dimensions between 27% and 46.5%. This condition shows that DFL has a greater influence on women's economic empowerment than FL. From the table, it can also be seen that the influence of each exogenous variable on the endogenous variable is positive. This indicates that any increase in exogenous variables will have an impact on the increase in endogenous variables. Then, in order to evaluate whether the model of this study is fit or not, the goodness of fit test was performed. In this regard, R squared can be used as an indicator. Table 7 shows the R squared values for this research model.

Table 7. R Squared

	R Squared	R Squared Adjusted
Control over time allocation	0.134	0.127
Leadership in society	0.088	0.081
Control over time allocation	0.198	0.192
Control over the use of income and expenditures	0.282	0.276
Economic decision-making power	0.125	0.118

From Table 7, it can be seen that both DFL and FL have the ability to explain change in the dimension of women's economic empowerment variable, varying from the lowest 8.8% (for *leadership in society*) to 28.2% (for *control over the use of income and expenditures*). Therefore, it can be seen that, both DFL and FL have substantial influence on *control over the use of income and expenditures*, and they have moderate influence on *control over time allocation*, *control over time allocation*, *economic decision-making power*. However, for *leadership in society*, both variables only have weak influence.

The next step is hypothesis testing result, as presented in Table 8.

Table 8. Hypothesis Testing Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistic (O/STDEV)	P Value
FL -> Control over time allocation	0.141	0.144	0.069	2.050	0.041*
FL -> Leadership in society	0.029	0.033	0.065	0.438	0.662
FL-> Financial Wellbeing	0.099	0.100	0.063	1.563	0.119
FL-> Control over the use of income and expenditures	0.147	0.146	0.052	2.804	0.005*
FL-> Economic decision-making power	0.145	0.145	0.062	2.324	0.021*
DFL -> Control over time allocation	0.296	0.310	0.089	3.313	0.001*
DFL-> Leadership in society	0.286	0.296	0.073	3.943	0.000*
DFL-> Financial Wellbeing	0.404	0.413	0.068	5.967	0.000*
DFL-> Control over the use of income and expenditures	0.465	0.467	0.059	7.891	0.000*
DFL-> Economic decision-making power	0.279	0.293	0.082	3.402	0.001*

According to Hair *et al.* (2017), the p value below 0.5 and t statistic above 1.96 indicate that an hypothesis is supported, and vice versa. From Table 8, it can be seen that FL has only positive and significance influence on three dimensions of WEE, which are control over time allocation (O=0.141; t=2.050; p=0.041), control over the use of income (O=0.147; t=2.804; p=0.005) and expenditures and economic decision-making power (O=0.145; t=2.804; p=0.021). Therefore, in this study, the hypotheses H1a, H1d and H1e are supported. On the other side, it can be seen in Table 8 that DFL has positive and significance influence on all WEE dimensions, which are control over time allocation (O=0.296; t=3.313; p=0.001); leadership in society (O=0.286; t=3.943 ; p=0.000); financial wellbeing (O=0.404; t=5.967; p=0.000); control over the use of income and expenditures (O=0.465; t=7.891; p=0.000); and economic decision-making power (O=0.279; t=3.402; p=0.001). It indicates that the hypotheses H2a, H2b, H2c, H2d and H2e are supported.

Analysis and Discussion

The effect of Financial Literacy on Women's Economic Empowerment

This study found that, among the 5 dimensions of WEE, only 3 dimensions were significantly influenced by FL: *control over time allocation*, *control over the use of income and expenditure*, and *economic decision-making power*. Then, among these three dimensions, *control over the use of income and expenditures* is the most influenced by FL, with the highest t value (t value = 2.804) among the others; while *control over time allocation* is found as the least influential dimension of WEE as this dimension has the lowest t value (t value = 2.050). The result implies that FL is an important factor for women in managing their personal finance and also directs them in making decisions especially related to financial decision.

As the p-value is below 0.05 and t statistic below 1.96, this study found that *leadership in society* and *financial wellbeing* are not affected by FL. It appears that, although FL has an important influence on financial management, this research shows that FL does not have a significant influence on leadership in society and financial wellbeing. This could be because, in this digital era, an individual, especially a woman, is not only faced with how to use their abilities and financial understanding in managing their financial resources, but currently they are also faced with various uncertainties that occur due to the impact of the development of digital technology products. Therefore, in the digital era, FL itself is not sufficient without being accompanied by digital skills. This is certainly contrary to the previous research, such as Kumari *et al.* (2020) and Postmus *et al.* (2013), which found that leadership in society and financial wellbeing were influenced by FL.

Despite this study finding that FL influenced only 3 out of 5 dimensions of WEE, overall, this study found that FL has a significant relationship with WEE (as presented in Table 4). In this study, it was found that FL has contributed to the change of the whole dimensions of WEE of 11.9%. This finding is certainly in line with previous studies, such as Kumari *et al.* (2020), Singh & Kumar (2017) Arora (2016), Bannier & Schwarz (2018), Haque & Zulfiqar (2016), Lyons, Grable *et al.* (2019), Postmus *et al.* (2013), Batra (2013), Dash *et al.* (2016), Deka (2015), Kabeer (2015) and Siddik (2017). Most of the previous studies found that FL has a positive influence on women's economic empowerment.

The effect of DFL on Women's Economic Empowerment

Based on the data analysis, this study found that DFL has a positive and significant influence on all of the dimensions of WEE, which are control over time allocation, leadership in society, financial wellbeing, control over the use of income and expenditures, and economic decision-making power. Among the 5 dimensions, *control over the use of income and expenditures* was recognized as the most influential dimension of WEE affected by DFL. It can be seen from the high t value score, which is 7.891, and also the high O value (0.465). It reflects that, for every unit increase in DFL, it is expected that there will be 0.465 increase in *control over the use of income and expenditures*, holding all other variables constant. On the other side, the *control over time allocation* was found as the least influential dimension of WEE, as the respective path coefficient has the lowest t value, which is 3.313. Therefore, it is not surprising that this study found that DFL has positive and significant influence on the overall WEE. This result is in line with previous studies, such as Rahayu, Ali *et al.* (2022) and Setiawan *et al.* (2020), that found that DFL has a positive and significant influence on financial behaviour and financial wellbeing.

Digital FL is a combination of FL and digital literacy. A person with a good level of DFL will certainly have a good understanding of financial planning and management and also have a good understanding and ability related to digital technology. Of course, women with an adequate level of understanding and ability in the field of finance and digital technology will be able to analyze the available financial information so that they can make better economic decisions. As a result, this will also have an impact on improving financial wellbeing. In addition, with a good level of DFL, a woman will have a good level of self-confidence to lead activities in society. In addition, women with a good level of DFL will also often be asked for opinions related to various activities in society. So, it is not surprising that it was found in this study that the level of DFL of women in West Sumatera has a positive and significant influence on women's abilities in making economic decisions, leadership in society, and financial wellbeing.

Furthermore, good DFL will also be able to direct individuals regarding their financial behaviour in spending money, managing individual and family finances, and allocating time. So, it is not surprising that in this study it was found that the level of DFL of women in West Sumatera has a significant influence on the control in the use of income and spending and control over the allocation of time.

Conclusion and Implications

This study specifically confirms that, apart from FL, it turns out that DFL is also a significant factor affecting WEE. Furthermore, it also found that the effect of DFL on WEE outweighs that of FL. These findings indicate that the advancement of digital technology has had an influence not only on the way we undertake activities but also on changing our viewpoint and the way we cope with difficulties, especially related to economic and financial activities. As a result, to live and carry out their tasks in this digital era, individuals must be financially literate and update their abilities and skills in the digital field, known as digital literacy. In this case, FL itself is no longer sufficient to guide individuals in making decisions, especially related to digital finance. Hence, in this era, DFL is something that is important for individuals, including women, to be attained.

This research provides new insights for future researchers in regard to the WEE study. In the digital era, the study of WEE should not only focus on FL, but instead needs to emphasize the importance of DFL. This study also contributes by adding to the number of studies related to DFL. As previously mentioned, there are still limited studies about DFL. The limited number of studies related to DFL will certainly have an impact on the limited amount of our understanding about DFL; although, as was previously explained, in this digital era DFL has become a necessity that must be owned by an individual in order to be able to adapt to this very fast and massive technological change. Thus, the issue of DFL is very relevant and really needs to be discussed and researched further.

In addition, this study also provides insight about the determinant factors of DFL and FL. In this study, it was found that demographic factors, such as age, education level, marital status, job status, residential location, and income, are factors that influence DFL and FL. This finding is expected to be useful in providing input to the government in making policies related to increasing DFL and FL, especially for women in West Sumatera, Indonesia.

Moreover, this study proposes to be an input for the Indonesian government in making policies to strengthen women's economic empowerment. In order to encourage women's economic empowerment, the government needs to pay attention to the level of FL and DFL of women in Indonesia. Although digital financial literacy in this study has been shown to have a greater impact on women's empowerment, on the other hand, the level of digital financial

literacy is lower than financial literacy. This finding should have further implications at the application level for curriculum development and lifelong learning programs starting from the basic level. It is necessary to consider including a discussion of FL, especially DFL, in the curriculum, so that the level of understanding of the women in the millennial generation on this matter can be increased. Aside from designing educational programs and curricula, the government must also create comprehensive policies to increase public literacy awareness, both FL and DFL.

Although this study has contributed to the literature, it cannot be denied that this study has several limitations. First, the respondents in this study come from West Sumatera, an Indonesian region with a matrilineal society. As a result, these findings may solely characterize the situation in this community, so future studies may be conducted with diverse groups of people. In addition, the limited number of participants in this study could affect the generalizability of research results. Therefore, it is hoped that future research should consider a larger area and a larger number of participants.

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