Analysis of Digital Financial Literacy of Gen Z Muslims

Analisis Literasi Keuangan Digital Muslim Gen Z

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ABSTRACT
Effective usage of digital financial services requires an extensive knowledge of digital finance. Combining both digital and financial knowledge, digital financial literacy is a skill set. For financial consumers, digital financial services offer opportunities as well as difficulties. While the adoption of sophisticated technology-based financial goods poses obstacles, there are also potential for tailored financial products and services, quicker transactions, and simple access to financial products. The purpose of this study is to test and analyze several aspects of Gen Z Muslim financial literacy as well as to ascertain how socio-demographic factors relate to that literacy. One-Way Anova and difference tests were used for the data analysis. Based on the study's findings, it can be said that Gen Z Muslims do not differ in their level of digital financial literacy based on gender. The Self-Determination to Use the Knowledge and Skill aspect of digital financial literacy among Gen Z Muslims has the lowest level, while the Digital Knowledge aspect has the highest level, when compared on the basis of gender. Based on age, the lowest level of digital financial literacy for Gen Z Muslims is in the Financial Knowledge aspect, while the highest level of digital financial literacy for Gen Z Muslims is in the Digital Knowledge aspect. The younger respondents of generation Z Muslims have lower levels of digital financial literacy, it was also found. From the results of the One-Way Anova test, it was concluded that there were differences in the digital financial literacy of Gen Z Muslims based on age.
Keywords : digital financial literacy, muslim, generation Z

ABSTRAK
Literasi keuangan digital merupakan persyaratan penting untuk penggunaan layanan keuangan digital yang efektif. Literasi keuangan digital merupakan kombinasi dari literasi digital dan literasi keuangan. Layanan keuangan digital memberikan peluang sekaligus tantangan bagi konsumen. Peluangnya meliputi produk dan layanan keuangan yang lebih disesuaikan dengan kebutuhan konsumen, transaksi menjadi lebih cepat, dan akses lebih mudah ke produk keuangan sedangkan tantangannya adalah penanganan kecanggihan keuangan digital dan adopsi produk keuangan berbasis teknologi yang kompleks. Penelitian ini bertujuan untuk mengidentifikasi aspek-aspek dan mengukur literasi keuangan digital di kalangan muslim gen Z serta untuk mengetahui hubungan sosio demografik dengan literasi keuangan digital muslim gen Z. Data dianalisis dengan menggunakan uji beda dan One-Way Anova. Berdasarkan gender, diketahui pula bahwa tingkat literasi keuangan digital muslim gen Z yang paling rendah adalah pada aspek *Self-Determination to Use the Knowledge and Skill* sedangkan tingkat literasi keuangan digital muslim gen Z yang paling tinggi adalah pada aspek *Digital Knowledge*. Dari hasil uji beda diperoleh kesimpulan bahwa tidak ada perbedaan literasi keuangan digital muslim gen Z berdasarkan gender. Secara khusus, muslim gen Z yang berusia lebih muda memiliki literasi keuangan digital yang lebih rendah. Berdasarkan usia, tingkat literasi keuangan digital muslim gen Z yang paling rendah adalah pada aspek *Financial Knowledge* sedangkan tingkat literasi keuangan digital muslim gen Z yang paling tinggi adalah pada aspek *Digital Knowledge*. Dari hasil uji One-Way Anova diperoleh kesimpulan terdapat perbedaan literasi keuangan digital muslim gen Z berdasarkan usia.
Kata kunci : literasi keuangan digital, muslim, generasi Z

1. Introduction

As a result of technical advancements and the rapid digitalization of financial services, several innovative digital financial services have been created. In recent years, the use of digital financial services has risen steadily. ACI Worldwide stated the number of real-time payment

transactions worldwide reached over 70.3 billion in 2020, marking a 41% increase from the year before (Rolfe, 2021).

Services of digital financial have transformed how people, households, and businesses send and receive money, purchase finance-related goods, execute transactions, make payments, and borrow money. Digital financial services also refer to using and having access to financial services at any time using digital platforms, as stated by Pazarbasioglu et al. (2020). By integrating cutting-edge services and products for digital finance including onlinel banking, alternative credit rating methods, digital loans, and more, digital financial services integrate the economy (OECD, 2018). On the other hand, users of digital financial services face numerous difficulties. When users desire to use digital financial services, they are at risk. Identity theft, privacy concerns, security concerns, a lack of understanding of finances, technology, and knowledge about digital monetary services are some of the risks and difficulties associated with creating digital financial services (Alliance for Financial Inclusion, 2021; Rachmawati et all.,2023).

Financial literacy education is essential in the era of digital technology, according to Morgan et al. (2020). For using digital financial services effectively, financial literacy is a crucial need. Combining both digital and financial literacy, it is known as literacy of digital financial. According to Lyons and Kass-Hanna (2021), "financial literacy on digital platforms" that which is meant "digital financial literacy." Digital and financial literacy indicators perhaps utilized to determine one's financial literacies in the age of technology. Financial literacy is the capacity to control the flow of money to attain excellent stability of financial, as well as understanding of financial services and products (Xiao et al., 2014). As stated by the UNESCO (2018), digital literacy refers to the capacity of an individual to identify, access, control, combine, connect, and assessment, and generate information through network devices and automated technology in a secure and acceptable manner in order to lead a social and economic life.

The sensible and efficient of online financial services use is hampered by low literacy of digital financial. When a person lacks digital literacy, even someone with a sufficient level of financial awareness cannot effectively use digital financial services (Fitriyani, 2023). To use and access digital financial services, one must be financially literate in the digital age. According to the findings of various research (Azeez & Akhtar, 2021; Prasad et al., 2018; Bansal, 2019;), users of digital services have low financial literacy and insufficient knowledge of digital financial services, little or no digital literacy, and mistrust of electronic financial services.

The average degree of financial literacy in Indonesia is still quite low (Farras in Leonanda, 2022). On the other hand, with a population of 72.9 million members, Indonesia's generation Z also has a poor degree of financial literacy, at 44.04% (OJK, 2019). The index of digital financial literacy and index of financial conclusion in Indonesia indicate percentages of 72 percent and 41 percent, respectively, due to the findings of the National Survey on Financial Literacy and Inclusion carried out by OJK in 2022. According to this statistic, a significant number of individuals have used digital financial services without having sufficient expertise (Darmansyah in Noor, 2023). Indonesia, with 231 million Muslims, is the nation with the biggest Muslim population worldwide, according to data from the 2021 World Population Review. The generation Z Muslim population will likely contribute significantly, and as a result, the Indonesian economy will likely be significantly impacted by their degree of literacy of digital financial in the future.

This study aims to measure and determine features of Gen Z Muslims' digital financial literacy determined by the prior justification. Finding out whether there is a relationship between Muslims in the Gen Z generation and their digital financial literacy is another goal. The results of this study will aid organizations that provide digital financial services in better understanding their customers, particularly Muslims in the Gen Z generation.

2. Literature Review

The business landscape is undergoing a transformation due to the advent of digital technologies, creating both prospects and challenges for companies (Baniya et al., 2021). Digitalization offers a range of potential benefits, including increased efficiency, enhanced product quality, optimized decision-making, agile operations, quicker market entry, innovative business models, new roles for stakeholders, and sustainability (Luo et al., 2021). As technology influences consumer behavior, it also shifts the ways in which people buy goods and services, making online transactions more efficient, rapid, and secure.

Digital financial advances can contribute to long-term organizational effectiveness (Kass-Hanna et al., 2021). Firms have the opportunity to revise their business models through a set of strategic approaches to optimize performance in the digital finance realm. Digital finance, from a practical viewpoint, encompasses financial services delivered via the internet, computers, or mobile devices (Chlouba et al., 2011).

OECD (2018) defines "digital financial services" as financial activities facilitated by digital technology, covering electronic money, mobile and online banking, branchless banking, and i-tellers via both banks and non-banking entities. To navigate these services effectively, financial literacy in the digital context is essential (Morgan et al., 2020). While these services offer advantages such as personalized financial solutions, simple access to financial products, and faster transactions, they also present difficulty like the adoption of technology-intensive financial offerings and managing their complexity (Alliance for Financial Inclusion, 2021).

The need for digital financial literacy combines both knowledge of finances and digital skills (Toronto Center, 2022). Making wise financial decisions requires at least a basic understanding of finance (Hayati & Syofyan, 2021; Shen et al., 2018). However, many young individuals, particularly those belonging to Generation Z, lack adequate financial literacy (Fanta & Mutsonziwa, 2021). Digital literacy enhances online consumers' financial learning experiences (Tiwari et al., 2020).

For effective utilization of digital financial services, a higher level of digital financial literacy is required (Morgan et al., 2020). As stated by the Alliance for Financial Inclusion, this form of literacy merges the foundations of digital literacy, financial literacy, financial capability, and is considered a crucial focus area for governments and regulatory bodies due to its emergent nature (Alliance for Financial Inclusion, 2021).

Dimova et al. (2021) describe "digital financial capabilities" as the knowledge, attitudes, and abilities that allow for active engagement with digital financial services. Financial behavior is shaped by financial attitudes, digital financial information, and financial knowledge (Normawati et al., 2021).

The concept of digital financial literacy is still developing yet changing. It is a multidimensional notion that combines financial literacy and digital literacy, as emphasized by the first substantial definition provided by the Alliance for Financial Inclusion (2021). Researchers assess digital financial literacy from a variety of perspectives. Key elements include understanding of digital financial literacy, risk awareness, consumer rights, and problem-solving abilities (Morgan et al., 2020).

Lyons and Kass-Hanna (2021) propose a more comprehensive evaluation framework, identifying five core components: awareness, practical knowledge, self-protection, and decision-making. The metrics proposed for measuring digital financial literacy take both financial and digital literacy into account (Lyons & Kass-Hanna, 2021; Alliance for Financial Inclusion, 2021; Morgan et al., 2020). Studies by Rajdev et al. (2020) and Azeez & Akhtar (2021), which employed the digital financial literacy scale developed by Morgan et al. (2020), have focused on this topic. Ravikumar et al. (2022) identified additional aspects of digital financial literacy, including product quality and gender social norms, in their study on adult financial literacy in India.

Basic comprehension of digital financial products and services is vital for their effective use (Rajdev et al., 2020). In terms of gender differences, Rajdev et al. (2020) found no significant

disparity between the financial literacy levels of female and male students. However, their one-way ANOVA test revealed that age significantly impacts all dimensions of digital financial literacy, with students over 23 scoring higher than those in younger age groups.

3. Methods

This study attempts to identify and assess the level of financial literacy among Muslims in the Gen Z generation. Gen Z Muslims in the Indonesian city of Bandung who utilize digital financial services were surveyed to get primary data. Muslims who are members of Generation Z contribute to the sample.

A Google form with two parts was used to distribute the questionnaire online. The respondent's sociodemographics, such as age and gender, are covered in the first section. The respondents' knowledge of financial technology is evaluated in the second section. On a Likert scale of 1 (Strongly Disagree) to 5 (Strongly Agree), this section's 34 statements correspond to 9 different aspects.

Five statements are used to measure Digital Knowledge (DK), five statements to measure Financial Knowledge (FK), three statements to measure Knowledge of Digital Financial Services (KDFS), four statements to measure Awareness of Digital Financial Services (ADFS), and three statements to measure Digital Finance Risk Control (DFRC). Product Suitability (PS) is assessed using three statements, Practical Application of Knowledge and Skill (PAKS) is assessed using five statements, Decision Making (DM) is assessed using two statements, and Self-Determination to Use the Knowledge and Skill (SDKS) is assessed using four statements.

SPSS was used to input and analyze the responses of the respondents. Descriptive statistics on respondents' responses, including gender, age, and aspects of digital financial literacy, were gathered by data processing with SPSS. Different tests were used to investigate differences in digital financial literacy levels based on gender, and One-way Anova analysis was used to analyze differences in digital financial literacy levels based on age.

4. Results

In this study, 352 respondents completed a questionnaire, and the results were broken down by gender, yielding 161 male respondents (or 45.7%) and 191 female respondents or 54.3% (Table 1). In this survey, respondents' gender distribution is dominated by female more than by male. There were 230 respondents between the ages of 17 and 20 (65.3%), 98 between the ages of 21 and 24, and 24 between the ages of 25 and 28 (6.9%).

Table 1. Demographics Characteristics By Gender And age

Variable	Percentage(%)
Gender	
Male	45.7
Female	54.3
Age	
17-20 years	65.3
21-24 years	27.8
25-28 years	6.9

Following the completion of a validity test, which revealed that all statement items were valid, a reliability test was conducted, with the findings shown in Table 2. According to Daud et al. (2018), the vast majority of Cronbach Alpha scores fall between 0.60 and 0.80 indicating that they are acceptable and moderate. All aspects of digital financial literacy used in this study are reliable.

Table 2. Realiability Test Results

Aspect	Cronbach's Alpha
Digital Knowledge (DK)	0.706
Financial Knowledge (FK)	0.620
Knowledge of Digital Financial Service (KDFS)	0.617
Awareness of Digital Finance Service (ADFS)	0.765
Digital Finance Risk Control (DFRC)	0.691
Product Suitability (PS)	0.765
Practical Application of Knowledge and Skill (PAKS)	0.824
Decision Making (DM)	0.701
Self-Determination to use the Knowledge and Skill (SDKS)	0.762

Digital Financial Literacy by Gender

Based on Table 3, which takes into account 8 aspects, including DK, FK, KDFS, ADFS, PS, PAKS, DM, and SDKS, Muslim female in Gen Z have better levels of digital financial literacy than male do. While in another metric, called Digital Finance Risk Control (DFRC), male Gen Z Muslims have greater levels of digital financial literacy than female do. The FK, DFRC, and SDKS indicators show that both male and female Gen Z Muslims have middle levels of digital financial literacy. In general, Table 3 demonstrates that male Muslim in the Generation Z are not considerably less financially literate than female. According to the table, it is also clear that Gen Z Muslims have varying levels of digital financial literacy depending on their gender, with SDKS apect having the lowest level and DK aspect having the greatest.

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Table 3. Digital Financial Literacy Aspects By Gender

Indicator/Aspect	Gender	Digital Financial Literacy		
		Low < 60%	Middle 60-80%	High >80%
Digital Knowledge (DK)	Male			87.4%
	Female			89.5%
Financial Knowledge (FK)	Male		70.6%	
	Female		69.2%	
Knowledge of Digital Financial Service (KDFS)	Male			80.4%
	Female			82.7%
Awareness of Digital Finance Service (ADFS)	Male			85.5%
	Female			86.6%
Digital Finance Risk Control (DFRC)	Male		75.1%	
	Female		77.4%	
Product Suitability (PS)	Male			80.8%
	Female			81.5%
Practical Application of Knowledge and Skill (PAKS)	Male			80.2%
	Female			81.9%
Decision Making (DM)	Male			86.2%
	Female			89.4%
Self-Determination to use the Knowledge and Skill (SDKS)	Male		71.3%	
	Female		72.9%	
Digital Financial Literacy (DFL)	Male		79.4%	
	Female			80.1%

Table 4. Independent Sample t-test Results Of Digital Financial Literacy Aspects By Gender

Gender		DK	FK	KDFS	ADFS	DFRC	PS	PAKS	DM	SDKS
Male	Mean	4.364	3.482	4.093	4.273	3.812	4.054	4.030	4.255	3.725
	SD	.538	.417	.596	.661	.718	.619	.656	.861	.809
Female	Mean	4.476	3.494	4.068	4.256	3.815	4.065	4.080	4.408	3.721
	SD	.465	.433	.538	.505	.562	.506	.570	.493	.591
t-statistics		-2.10	-2.27	0.41	0.27	0.07	-0.18	-0.72	-2.09	0.053
Sig.		0.036	0.788	0.678	0.788	0.943	0.858	0.473	0.037	0.958

Only the Digital Knowledge (DK) and Decision Making (DM) aspects, which are listed in Table 4, produced significant findings (Sig. < 0.05) after doing various tests based on gender. From the DK and DM aspects, this demonstrates that there are variations between the financial literacy levels of male and female gen Z Muslims. Other aspects/indicators that were tested produced insignificant results.

Table 5. Independent Sample t-test Results Of Digital Financial Literacy By Gender

Age	Mean	SD	t	Sig.
Male	3.906	0.451	-0.686	0.493
Female	4.123	0.348		

According to the results presented in Table 5, the level of digital financial literacy does not significantly differ between male and female Muslims of Generation Z (Sig. > 0.05). This outcome aligns with the research conducted by Rajdev et al. (2020), which also examined the digital financial literacy among students.

Digital Financial Literacy by Age

Table 6. Digital Financial Literacy Aspects By Age

Aspect/dimension	Age (years)	Digital Financial Literacy		
		Low < 60%	Middle 60-80%	High >80%
Digital Knowledge (DK)	17-20			87.1%
	21-24			90.6%
	25-28			93.7%
Financial Knowledge (FK)	17-20		69.2%	
	21-24		70.3%	
	25-28		74.3%	
Knowledge of Digital Financial Service (KDFS)	17-20			80.6%
	21-24			83.9%
	25-28			82.2%
Awareness of Digital Finance Service (ADFS)	17-20			84.3%
	21-24			90.0%
	25-28			87.1%
Digital Finance Risk Control (DFRC)	17-20		74.3%	
	21-24		81.0%	
	25-28		76.7%	
Product Suitability (PS)	17-20		79.9%	
	21-24			84.4%
	25-28		80.0%	
Practical Application of Knowledge and Skill (PAKS)	17-20		78.9%	
	21-24			85.1%
	25-28			86.3%
Decision Making (DM)	17-20			87.4%
	21-24			89.1%
	25-28			88.3%
Self-Determination to use the Knowledge and Skill (SDKS)	17-20		71.3%	
	21-24		74.5%	
	25-28		76.9%	

According to Table 6, Muslims from Generation Z aged 17 to 20 exhibit lower levels of financial literacy across all categories compared to those in the other two age groups. Meanwhile, Gen Z Muslims in the age groups of 21 to 24 and 25 to 28 tend to have comparable levels of digital financial literacy. On the basis of four factors, namely DK, KDFS, ADFS, DM, and SDKS, Gen Z Muslims in the three age groups have excellent levels of digital financial literacy. Meanwhile, the digital financial literacy level among Muslims in Generation Z falls into the middle group in three other aspects, namely FK, DFRC, and SDKS. In line with this table, it is also clear that Gen Z Muslims have varying digital financial literacy levels depending on their age, with the FK aspect having the lowest level and the DK aspect having the highest.

Table 7. One-Way Anova Results Of Digital Financial Literacy Aspects By Age

Age (years)		DK	FK	KDFS	ADFS	DFRC	PS	PAKS	DM	SDKS
17-20	Mean	4.349	3.510	4.009	4.191	3.697	4.001	3.919	4.322	3.640
	SD	.533	.414	.582	.611	.620	.525	.526	.71	.675
21-24	Mean	4.524	3.422	4.184	4.37	4.061	4.211	4.324	4.378	3.921
	SD	.413	.427	.488	.485	.606	.612	.502	.681	.705
25-28	Mean	4.750	3.550	4.333	4.542	3.972	4.000	4.283	4.333	3.708
	SD	.313	.508	.573	.509	.636	.565	.322	.565	.698
F Ratio		10.08	1.74	6.07	6.28	12.76	5.07	24.37	0.22	5.71
Sig.		0.000	0.176	0.003	0.002	0.000	0.007	0.000	0.799	0.004

Based on age, Table 7 shows that the digital financial literacy of Gen Z Muslims in the group of respondents aged 17-20 years is generally lower than the other two age groups. Gen Z

Muslims by age have the highest level of digital financial literacy in the DK aspect and the lowest level in the FK aspect. In other words, Gen Z Muslims have high digital literacy, but on the other hand, low financial literacy. The table also shows that the majority of aspects of digital financial literacy, namely namely DK, KDFS, ADFS, DFRC, PS, PAKS, and SDKS aspects differ significantly based on the age of the respondents.

Table 8. One-Way Anova Results Of Digital Financial Literacy Aspects By Age

Age (years)	Mean	SD	F	Sig.
17-20	3.906	.392	15.521	0.000
21-24	4.149	.381		
25-28	4.123	.275		

Based on the result in Table 8, there are notable variations in the digital financial literacy of Generation Z Muslims when age is considered. The test data from the table indicates age-related differences in their digital financial literacy (F=15.521, Sig. < 0.01). These findings are in line with the outcomes from the study by Rajdev et al. (2020).

5. Conclusion

Based on the research conducted, it's evident that Generation Z Muslims possess a strong grasp of digital financial literacy. Female Muslims in this generation consistently outperform their male counterparts in numerous aspects such as Financial Knowledge, Digital Knowledge, Self-Determination to use the Knowledge and Skills, Practical Application of Knowledge and Skill, Awareness of Digital Finance Services, Knowledge of Digital Financial Services, Product Suitability, and Decision-Making. On the other hand, Gen Z Muslim male surpass female in the specific aspect of Digital Finance Risk Control. Both genders within this generation show a moderate level of digital financial literacy when evaluated on Financial Knowledge, Digital Finance Risk Control, and the Self-Determination to use the Knowledge and Skills aspects.

Depending on their gender, there are variations in the digital financial literacy among Gen Z Muslims, with Decision-Making being the strongest aspect and Self-Determination to use the Knowledge and Skills being the weakest aspect. Subsequent gender-based testing revealed significant disparities only in the aspect of Digital Knowledge and Decision-Making, indicating gender-based differences in these components of financial literacy. For the other evaluated aspects, the results were not statistically significant. Generally, male and female Gen Z Muslims have comparable levels of digital financial literacy. Compared to adults in other age groups, Muslim Gen Z individuals aged 17 to 20 display lower overall financial literacy levels. However, those in the age groups of 21 to 24 and 25 to 28 have similar digital financial literacy levels. Across these three age categories, Gen Z Muslims score particularly high in several areas: Digital Knowledge, Knowledge of Digital Financial Services, Awareness of Digital Finance Services, Decision-Making, and the Self-Determination to use the Knowledge and Skills. Conversely, they exhibit moderate levels of digital financial literacy in Financial Knowledge, Digital Finance Risk Control, and the Self-Determination to use the Knowledge and Skills.

Depending on their age, the lowest digital financial literacy scores among Gen Z Muslims were observed in the Financial Knowledge aspect, while the highest scores were in the Digital Knowledge aspect. Another key observation is that Digital Knowledge, Knowledge of Digital Financial Services, Awareness of Digital Finance Services, Digital Finance Risk Control, Product Suitability, Practical Application of Knowledge and Skill, and Self-Determination to use the Knowledge and Skills aspects exhibited significant age-based differences, whereas the other two aspects did not show any noteworthy variance. Overall, the digital financial literacy levels among Gen Z Muslims fluctuate considerably depending on their age.

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