

Analysis of factors influencing digital financial literacy levels: a case study on gen Y and gen Z spending behavior

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Abstract

This study aims to estimate and analyze the relationship between variables using quantitative data. The data presented is cross section data, the data studied is more than one. The variables that will be observed are the variables that determine the buying behavior of Gen Z and Millennials. This type of research is survey research, because it takes samples from one population. This study uses an explanatory research approach. The approach used is a quantitative description.. This research aims to look at the Factors Influencing the Level of Digital Financial Literacy based on shopping behavior. The population in this study are adolescents aged 10-19 years (Gen Z) and those aged 20-37 years (Gen Y) who shop online with e-commerce in Medan City. The purpose of this study is to look at the differences in shopping behavior of Gen Z and Gen Y. Since there is no data on young people who shop online using e-commerce (the number is unknown), the sample selection framework is non-probability sampling. The method used is purposive sampling, especially quota sampling. This method is used to ensure that the various subgroups in the population are represented with various sample characteristics to a certain extent as desired by the researcher. The samples taken were respondents from Gen Z and Gen Y who shopped online using e-commerce which were randomly selected.

Keywords: Financial Literacy, Digital Financial Literacy

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A. Introduction

The Covid pandemic which started in 2020, forced almost all countries to implement a lock down. People are forced to live in their own homes, or are isolated in a certain area. This is where internet technology suddenly becomes the thing people need the most. In its article, Kominfo stated that there was an increase in the use of digital applications (online/online) up to 442% during the Covid pandemic. (Ministry of Communication and Information Technology, 2021). APJII survey results also show that during 2021-2022 there will be an increase in the number of internet users from 175 million people to 220 million people (Tempo, 2022). The use of the internet is indeed diverse, ranging from work, study and shopping is no exception. Restrictions on human movement (lock down) have forced traditional markets, shopping centers and various places where sellers and buyers meet to be closed or even if they cannot operate optimally. Therefore, people are starting to do economic transactions digitally. Some of these digital buying and selling (shopping) transactions are still carried out using real money. However, more and more people are turning to electronic (digital) money. Bank Indonesia noted that electronic money transactions in August 2022 grew by 43.24% on an annual basis (year on year/yoy) (Hidranto, 2022)¹. It is therefore not surprising that the technology-based financial industry (financial technology/fintech) is also developing. In the period 2022 – 2023, the majority of fintech in Indonesia are recorded to have transactions of around IDR 5 billion to IDR 500 billion per year. This number increased rapidly from the previous year (Indonesian Information Portal, 2020)². This increase occurred because fintech offers many benefits to its users, such as convenience, processing speed, and convenience. However, besides offering benefits, it is also necessary to realize that Fintech also has potential risks, such as personal account breaches, data theft, fraud and money theft. In addition, fintech products also have an influence on one's shopping behavior and saving

¹ Hidranto, F. (2022). Penggunaan Uang Digital Makin Masif. *Portal Informasi Indonesia*.

² Portal Informasi Indonesia. (2020). Mayoritas penduduk Indonesia memeluk agama Islam (87,2%). Retrieved from Pemerintah Republik Indonesia website: <https://indonesia.go.id/profil/agama>

behavior. Cobla and Osei-Assibey (2018), Agarwal et al (2019), and Moenjak et al (2020) in their research stated that Fintech products have an influence on shopping behavior and also people's saving behavior. Several fintech products offer installment payment models and peer to peer lending which allows one to get a loan easily and quickly. This makes a person tend to make spontaneous purchases (impulsive) even for items that are not really needed (Panos and Wilson, 2020). Hundtofte & Gladstone (2017) in their research also shows that these conveniences can also make someone over-spend. This condition is exacerbated by the lack of digital financial literacy that will make people very consumptive.

Financial literacy is a person's ability to manage his personal finances. This capability includes the ability to obtain, understand, and evaluate relevant information in making the best financial decisions. This ability also involves understanding all the risks and consequences of the decisions taken (Lusardi, Michaud, & Mitchell, 2017)³. Someone with a good level of financial literacy tends to be able to manage their personal finances, have the ability to make financial decisions based on relevant information and minimize risks that may occur. People who are well literate tend to find it easier to understand matters relating to the financial industry and services and are able to find information about the financial services industry that is needed in their daily life activities. This is of course very helpful in determining financial products and services that are in accordance with the needs and financial capabilities of the community in an effort to improve welfare (Otoritas Jasa Keuangan, 2017)⁴. One person's mistake in making financial decisions can cause deep financial problems for life. This difficulty can even extend to family and environmental problems (Mitchell & Lusardi, 2015)⁵.

OJK data shows that in general the level of financial literacy of the Indonesian people, both digital and non-digital finance, has indeed increased. The 2013 OJK survey showed that the financial literacy level of the Indonesian people was 21.84%. This figure has grown to 49.68% in the 2022 survey year. However, despite an increase, the level of financial literacy of the Indonesian people is still below the average level of financial literacy in Southeast Asia. For digital finance, the data shows an even lower level of literacy, namely only 40% of Indonesians have a good level of digital financial literacy. Of these figures the highest level of digital financial literacy is in generation Z, namely 60% have a good level of digital literacy. Next is generation Y or the Millennial generation, where as many as 54% have a good level of digital literacy (OJK, 2022). The difference in the level of digital financial literacy between generations Y and Z is an interesting thing to watch. The two generations have been equally affected by the covid pandemic, but why is one generation more literate than the other? Howe and Strauss (1991) explained that there are generational differences as a result of technological developments. People who were born before the proliferation of internet technology, for example, tend to prefer print media to find information. Meanwhile, those born after the development of the internet prefer to surf digital sources such as web pages or social media.

Generation Y is an interesting generation, because it was born and grew up in a transitional period. This generation still knows print media, but grew up in a condition where print media is slowly becoming extinct and being eroded by the existence of the internet. This generation is "forced" to quickly adapt to keep up with the times from the real to the virtual (pseudo), namely through the digitalization of various things. Meanwhile, generation Z is the generation that was born when

³ Lusardi, A., Michaud, P. C., & Mitchell, O. S. (2017). Optimal financial knowledge and wealth inequality. *Journal of Political Economy*, 125(2), 431–477

⁴ Otoritas Jasa Keuangan. (2017). Strategi Nasional Literasi Keuangan Indonesia (Revisit 2017). *Otoritas Jasa Keuangan*, 1–99.

⁵ Mitchell, O., & Lusardi, A. (2015). Financial Literacy and Economic Outcomes: Evidence and Policy Implications. *The Journal of Retirement*, 3, 107–114.

information technology, especially the internet, was quite well established. This generation is able to apply all activities at one time (multi-tasking) such as browsing using a PC (personal computer), playing social media using a mobile phone, ordering food online, listening to music using a headset, and all of that is done at the same time. For Gen Z, technology has become a part of their lives, because since birth they have been familiar with technology, especially the internet as a global culture. Unlike the previous generations who became digital immigrants, Gen Z are digital natives. Therefore, as quoted from Mashabel, a digital media website in America, generation Z is not interested in television and print media advertisements, they are more interested in advertisements on social media. This research will link digital literacy with financial literacy, because generally previous research has focused on research on (non-digital) financial literacy only. The development of digital technology has made financial literacy alone no longer sufficient. Therefore, a specific study is needed to examine financial literacy related to digital financial products or known as digital financial literacy. In addition, this research will also focus on comparisons between the two generations, namely Generation Y and Generation Z.

B. Methods

This study aims to estimate and analyze the relationship between variables using quantitative data. The data presented is cross section data, the data studied is more than one. The variables that will be observed are the variables that determine the buying behavior of Gen Z and Millennials. This type of research is survey research, because it takes samples from one population. This study uses an explanatory research approach, which aims to explain the causal relationship between the research variables and the testing hypothesis (Nasution, et al., 2020)⁶. The approach used is a quantitative description. This research aims to look at the Factors Influencing the Level of Digital Financial Literacy based on shopping behavior. The population in this study are adolescents aged 10-19 years (Gen Z) and those aged 20-37 years (Gen Y) who shop online with e-commerce in Medan City. The purpose of this study is to look at the differences in shopping behavior of Gen Z and Gen Y. Since there is no data on young people who shop online using e-commerce (the number is unknown), the sample selection framework is non-probability sampling. The method used is purposive sampling, especially quota sampling. This method is used to ensure that the various subgroups in the population are represented with various sample characteristics to a certain extent as desired by the researcher. The samples taken were respondents from Gen Z and Gen Y who shopped online using e-commerce which were randomly selected. The number of respondents selected was 215 people where the respondents from Gen Z were 103 people and the respondents from Gen Y were 112 people. The characteristics of the respondents observed in this study were gender, age, type of job, income, type of residence, frequency of online shopping done/month, products that are frequently purchased, and those who play a role in making online shopping decisions.

C. Results and Discussion

1. Characteristics of Respondents

	Gen Z		Gen Y		Cumulative
Based on gender:					
Female	70	32,5%	72	33,5%	142
Male	32	14,8%	41	19%	73
Based on Age:	103	48%	112	52%	215

Respondents in this study totaled 215 people, where the respondents in this study were dominated by women, namely 66% or as many as 142 people of the total respondents. The number of respondents from Gen Z was dominated by women, namely 32.5%. Meanwhile, respondents from Gen

⁶ Tony, N., & Desai, K. (2020). Impact of digital financial literacy on digital financial inclusion. *International Journal of Scientific and Technology Research*, 9(1), 1911–1915.

Y were also dominated by women with a total of 33.5%. Based on age, respondents who belong to generation Y are more dominating, namely as much as 52%.

Type of work:		
Students	191	89%
employee	12	6%
entrepreneur	3	1%
Government employees	4	2%
Teacher/Lecturer	4	2%
Income:		
< IDR 2 million	151	70%
IDR 2 million – 4 million	50	23%
IDR 4 million - 6 million	6	3%

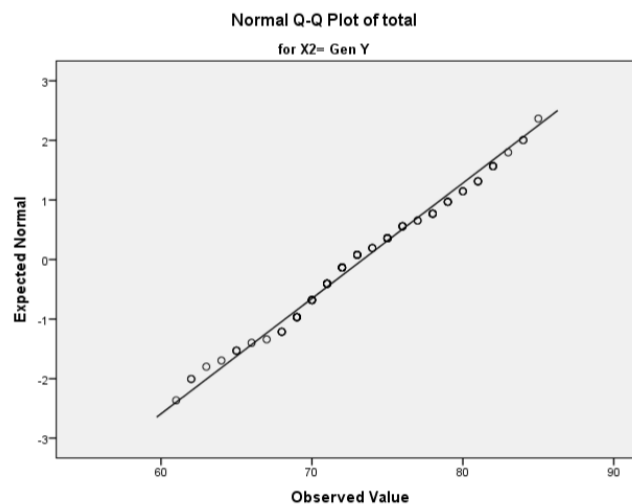
The type of work is thought to influence the shopping style of each individual. Respondents who dominated the most from the category of type of work were students or university students, with a total of 89% or as many as 191 people. In addition, because the majority of respondents were from the student circle, the largest number of income was also found to come from the lowest income group in this study, which was under 2 million rupiah..

Frequency of online purchases:	Amount	Persentage
1-2 times/month	191	89%
3-5 times/month	19	9%
> 5 times/month	5	2%
Frequency of online purchases:		
Travel	20	9%
Electonics	16	7%
Cosmetics	21	10%
Shoe	30	14%
Clothes	90	42%
Others	38	18%

Respondents in this study are respondents who are active in using financial technology facilities and shopping online, with a minimum frequency of 1-2 transactions in 1 month. Based on data from research respondents, the type of online transaction that is most frequently used is clothing purchases, which dominates as much as 42%.

1. Normality Test Results

Before testing the hypothesis of this study, classical assumption testing was first carried out to ensure that the multiple regression test tool can be used or not in the study. If the classical assumption test has been fulfilled, then multiple regression statistical tools can be used. The normality test aims to test whether in the regression method, the dependent variable and independent variable both have a normal distribution or not. A good regression model is data that is normally distributed or close to normal. The following are the results of the normality test, which can be seen from the probability plot graph:



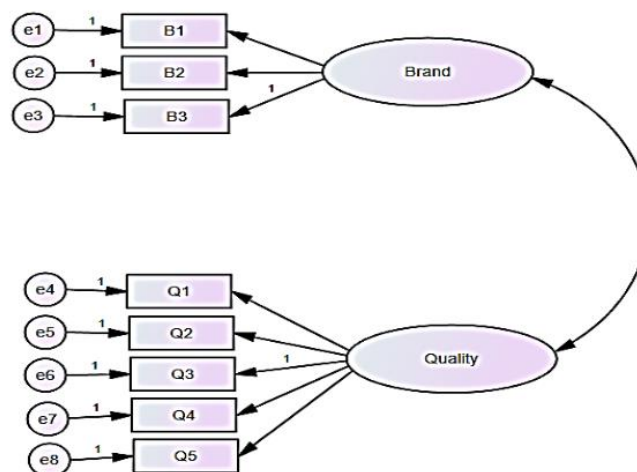
Gambar 1. Hasil pengujian normalitas

a. Confirmatory factor analysis (CFA)

CFA test needs to be done to get the appropriate loading factor for each of the factors studied. In other words, factor loading is done to see whether the questions that have been made are suitable or not in representing other variables. There are four variables that build shopping behavior which will then be analyzed, namely cultural, social, personal, and psychological variables.

b. Confirmatory factor analysis for cultural variables

The cultural variable is constructed by brand and quality indicators. The indicator is built by several items, which are processed through questionnaires. The results of confirmatory factor analysis calculations for cultural variables with brand (B) and quality (Q) indicators were carried out using the AMOS version 24 program and produced information as can be seen in the following figure:



Gambar 3. Confirmatory Factor Analysis for Cultural Variables

Indicators with a loading factor below 0.3, namely B1, Q4, and Q5, are not valid as variable measurements. For this reason, these indicators must be removed so that the model becomes fit.

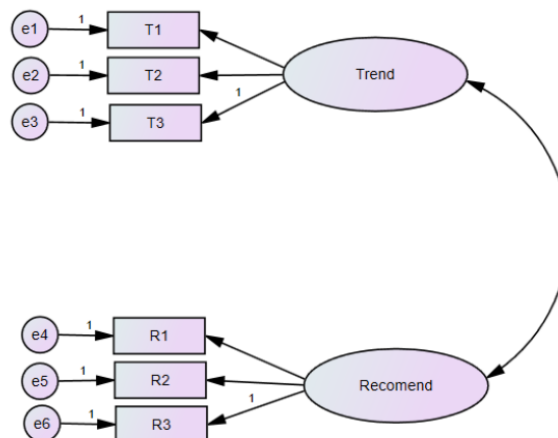
Standardized Regression Weights Setelah Eliminasi

Indikator			Estimate (β)
B3	<---	Brand	0,544
Q3	<---	Quality	0,863
Q2	<---	Quality	0,665
Q1	<---	Quality	0,787
B2	<---	Brand	0,664

Quality and brand indicators have a high loading factor. This means that brand and quality are highly sought after when making purchases online. Consumers are oriented to buy goods with well-known brands. The search for a brand can be related to a lifestyle that wants to show its social status through branded goods. In addition, consumers also search to get the highest quality or the best in the desired product. They also considered that the brand with the best sales showed the quality of the brand.

c. Confirmatory factor analysis for social variables

Social variables are built by trend and recommend indicators. The indicator is built by several items, which are processed through questionnaires. The results of confirmatory factor analysis calculations for cultural variables with trend and recommend indicators were carried out using the AMOS version 24 program and produced information as can be seen in the following figure:



Gambar 4. Confirmatory Factor Analysis untuk Variabel Sosial

An indicator with a loading factor below 0.3 is T1, R2 is not valid as a variable measure. For this reason, these indicators must be removed so that the model becomes fit.

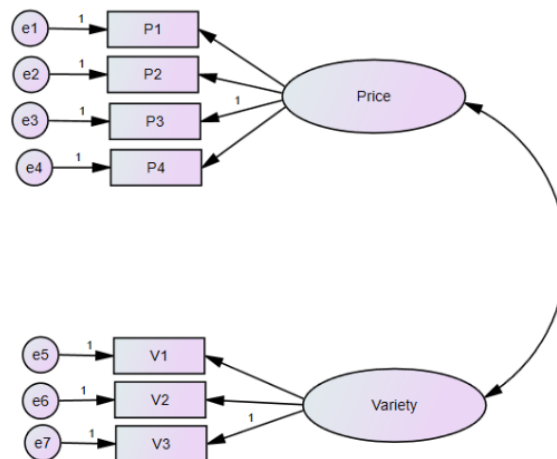
Standardized Regression Weights Setelah Eliminasi

Indikator			Estimate (β)
T3	<---	Trend	0,858
R1	<---	Recommend	0,611
T2	<---	Trend	0,481
R3	<---	Recommend	0,334

The Chi-square result of 0.001 is smaller than the table Chi-square for degrees of freedom at a significant level of 5%, but the Chi-square is very sensitive to the number of samples. Therefore the feasibility of the data can be seen from other fit criteria. Probability $p=0.973$ indicates the model is fit. All loading factor values are significant because they have a loading factor value above 0.3. This means that the model is fit as a measure of the variable. Trend indicators have a high loading factor. This means that consumers in online shopping are very concerned about existing trends.

d. Confirmatory factor analysis for personal variables

Social variables are built by price and variety indicators. The indicator is built by several items, which are processed through questionnaires. The results of confirmatory factor analysis calculations for cultural variables with price and variety indicators were carried out using the AMOS version 24 program and produced information as shown in the following figure.:



Gambar 5. Confirmatory Factor Analysis for Personal variables

Indicators with a loading factor below 0.3 are P1, V1, P4 which are not valid as variable measurements. For this reason, these indicators must be removed so that the model becomes fit.

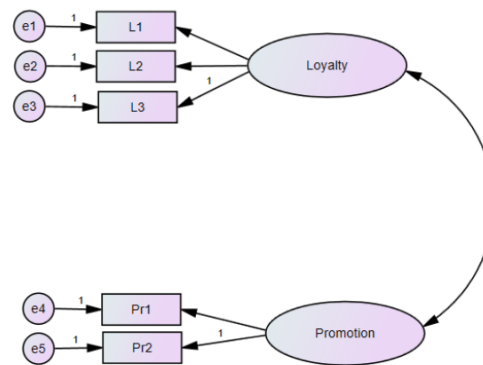
Standardized Regression Weights Setelah Eliminasi

Indikator			Estimate (β)
P3	<---	Price	0,901
V2	<---	Variety	0,159
P2	<---	Price	0,564
V3	<---	Variety	0,574

Chi-square results of 0.405 with a probability of $p=0.524$ indicate that the model is fit. Likewise with the other criteria GFI, AGFI, TLI, CFI the value is above 0.9 according to what is recommended. The CMIN/DF value of 0.405 is in accordance with the recommended value of <2.00 and the RMSEA value of 0.00 is below the value of 0.08. The loading factor values for indicators P3, P2 V3 are already significant because they have a loading factor value above 0.3. However, the V2 indicator is not significant or the value is below 0.3. However, the V2 indicator cannot be discarded, because the minimum indicator that can be analyzed is 2. Thus, in order for the indicator to be used as a measure of the Pb variable, V2 must still be used. The price indicator has a large loading factor, meaning that purchasing behavior is influenced by the price of the item. In online purchases, consumers will compare the price of these products with other sites or online media..

e. Confirmatory factor analysis for psychological variables

Psychological variables are built by loyalty and promotion indicators. The indicator is built by several items, which are processed through questionnaires. The results of confirmatory factor analysis calculations for psychological variables with loyalty and promotion indicators were carried out using the AMOS version 24 program and produced information as can be seen in the following figure:



Gambar 6. Confirmatory Factor Analysis for Psychological variables

Standardized Regression Weights setelah

			Estimate (B)
L3	<---	Loyalty	0,901
L1	<---	Loyalty	0,059
Pr2	<---	Promotion	0,368
Pr1	<---	Promotion	0,236
L2	<---	Loyalty	0,244

Indicators with a loading factor that meets standardization or a value above 0.3 are L3, Pr2, valid as a measure of the Pk variable. While the indicators whose values are below standardized are L1, Pr1, and L2. In order for the model to be fit, invalid indicators must be removed. However, in order for the CFA test to be carried out, the indicators cannot be less than two items. Therefore, even though the indicator value is still below 0.3, the indicator must still be used so that the Pk variable can be used as a measure of shopping behavior.

f. Testing differences in shopping behavior between Gen Z and Gen Y

The Independent Sample T-test is used to determine whether or not there is a difference in the mean of two groups that are not related (independent) to one another, with the aim of whether the two groups have the same average or not significantly, assuming normally distributed data. To find out whether there are differences in shopping behavior of Gen Z and gen Y.

Independent Samples Test

		total	
		Equal variances assumed	Equal variances not assumed
Levene's Test for Equality of Variances	F	,163	
	Sig.	,687	
t-test for Equality of Means	t	-2,686	-2,691
	df	208	207,303
	Sig. (2-tailed)	,008	,008
	Mean Difference	-1,883	-1,883
	Std. Error Difference	,701	,700
	95% Confidence Interval of the Difference		
	Lower Upper	-3,265 -1,501	-3,262 -1,503

Sumber: data primer dan diolah

Prior to the t-test, the variance similarity (homogeneity) test was carried out using the F test (Levene's Test). If the variants are the same, then the t test uses Equal Variance Assumed (assuming the variants are the same) and if the variants are different, use Equal Variance Not Assumed (assuming different variants). The significance of the F test is 0.687. Because the significance value is > 0.05 , H_0 is accepted. So the conclusion is that the variant groups of Gen Z and Gen Y are the same. So the independent samples test uses Equal Variance Assumed. The t table on the t test is 1.9715, while the t count is 2.686. This means $t \text{ count} \geq t \text{ table}$ ($2.686 \geq 1.9715$) and the value of Sig. $0.008 < 0.05$ then H_0 is rejected. This means that there are differences in shopping behavior between Gen Z and Gen Y.

D. Conclusions

The results of the CFA test conducted on variables that can shape shopping behavior, the results obtained are cultural variables, social variables, personal variables, and psychological variables confirmed as variables that determine shopping behavior. The factor that has the greatest influence on shopping behavior is the cultural factor, with the quality and brand indicators also having the largest loading factor compared to the other indicators. Then social factors also have a large influence on shopping behavior, with trends and recommendations as indicators that also have a high loading factor. Personal factors are formed by price and variety indicators. Meanwhile, psychological factors are formed by indicators of loyalty and promotion. In the CFA test there are several indicators that are invalid and must be discarded, even some invalid indicators must still be used so that the CFA test can be carried out. The existence of invalid indicators can be caused by the different understanding of each individual in answering the questionnaire. Besides that, it can also be caused by questions that are unclear or ambiguous. As well as the lack of question items, invalid indicators cannot be discarded so that the model becomes unfit. So for further research, the selection of question items must be more careful to avoid invalid items. In addition, question items.

The development of digital technology has had a significant impact on people's consumption patterns, especially generation Z. The accompanying disruptive innovation has brought changes to human behavior in general, from what was previously an industrial civilization to now turning to digital civilization. Technological innovation has also shifted the way consumers obtain the goods they want or need. From what was previously done conventionally, now it is starting to shift to a modern way through online platforms or online shopping. The results obtained in this study are a confirmatory factor analysis instrument model of the factors that determine shopping behavior in the city of Medan. Confirmed factors as

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