Financial Technology, Financial Literacy and Financial Management Behaviour in Colleges

Wiwin Juliyanti(✉), Rihan Mustafa Zahri, Erma Wulan Sari, and Ahmad Nur Aziz

Faculty of Economics and Business, Universitas PGRI Madiun, Madiun, Indonesia
wiwin@unipma.ac.id

Abstract. The development of technology and finance in Indonesia provides opportunities for the millennial generation because it offers several financial management options with ease. Students as a component of echo boomers who are considered not financially literate are feared to have unhealthy finances. This study aims to examine the relationship between the use of FinTech applications in the form of e-Wallet, Financial Literacy and Student Financial Management in several universities in Surakarta. This quantitative research using a questionnaire instrument with purposive sampling method describes that the average financial literacy of students is at the medium level (75.63%) as well as the frequency of financial management behaviour is in the "sometimes" or medium scale. While the results of the regression test prove that the use of e-Wallet applications has a negative effect on student financial behaviour, meaning that the high level of satisfaction with using digital wallets actually causes low financial management abilities. This study also explains that the high financial literacy of students has a positive effect on financial management behaviour. The implication of this research is that Financial Technology that is not properly aligned with financial literacy will result in unwise decision-making behaviour in student financial management activities.

Keywords: FinTech · e-Wallet · Financial Literacy · Financial Management Behaviour · College Student

1 Introduction

The industrial revolution 4.0 began to change various sides of human life in the sectors of the economy and social and community behaviour. The industrial revolution which was marked by the emergence of various fintech companies, the stronger growth of fintech companies in Indonesia makes it easier for the public to use and access a certain financial product and service, even already become a trend in financial services in the digital era since 2016. FSB defines financial technology as a technological innovation that offers financial services to be developed in various processes, new products, applications and business models [1].

In [2] World Bank defined fintech as an industry consisting of companies that use technology to make the financial system and delivery of financial services more efficient.

J. Handhika et al. (Eds.): ICETECH 2022, ASSEHR 745, pp. 513–530, 2023.
https://doi.org/10.2991/978-2-38476-056-5_53

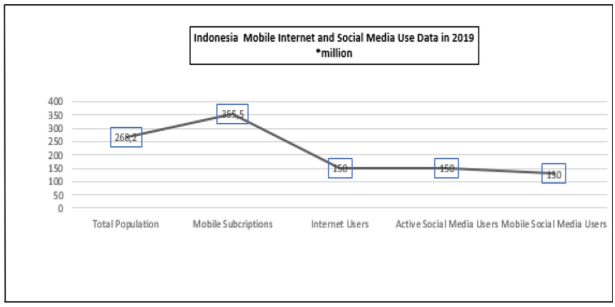

Fig. 1. The Indonesia Internet Users [44]

From the graphic below (Chart 1), it can be described that Indonesia's total population is 268.2 million, while Mobile users reach 355.5 million, on the third point explains active internet users are 150 million, this graphic figure shows that more than half of Indonesia's population has used the internet, even the number of the mobile customer exceeds the total population. From the social media aspect. 50% are more active in using social media platforms (Fig. 1).

Financial Stability Board divides fintech into four categories based on the types of innovation: payment, transfer, clearing and settlement, this activity is closely related to mobile payments, digital wallets, digital currencies and the use of distributed ledger technology [1]. The number of mobile users can be used to reach the financial system through digital financial services. Therefore, the internet is one of the factors that support the development of fintech and business digital payment in Indonesia. In Indonesia, startup companies that use services fintech in digital wallets or e-wallets are becoming the favourites of the millennial generation, including students who become composition users.

AFTECH Indonesia in 2018 provided data that the millennial generation with an age range of 20–35 years dominated FinTech service users with the title "technology literate". Furthermore, this data also provides information that credit service borrowers in FinTech applications reach 3 million people in the middle class category who earn Rp 5 million to Rp 15 million per month. [3]. This is due to the internet that attracts students to using instant communication technology and social media. In other words, the millennial generation is the generation that grew up in the internet era [4]. The current millennial generation can be found in professions such as students, college students, workers, employees to parents. The millennial generation who is the object of this research is students because millennials who refer to students do not only play a role as information technology service users but are also able to observe and follow technology changes rapidly and has more dependence on technology. In terms of age, the millennial generation is the generation born between the years 1982 to 2000 [5].

Data analysis company App Annie recorded that the development of digital wallet applications in Indonesia from 2017 to 2019 had increased by around 50%. Based on the same data source, information is obtained that in the last five years smartphone users have increased by up to 70%. As many as 38 e-wallet or digital wallet applications in

Table 1. The rank of e-wallet applications Q2 2019 version of the App Annie

Rank	E-wallet application name	The issuing company
1	Go-pay	PT. Dompet Anak Bangsa
2	OVO	PT Visionet Internasional
3	DANA	PT. Espay Debit Indonesia Koe
4	LinkAja	PT. Fintek Karya Nusantara
5	Jenius	PT. Bank BTPN Tbk
6	Go Mobile	PT. Bank CIMB Niaga Tbk
7	Isaku	PT. Inti Dunia Sukses
8	Sakuku	PT Bank central Asia
9	Doku	PT. Nusa Satu Inti Artha
10	Paytren	PT. Veritra Sentosa Internasional

Indonesia have obtained official licenses and are capable of conducting transactions of 1.5 billion USD [6] (Table 1).

Based on the table above, it is demonstrated that digital wallet applications in Indonesia still occupy the top rank in non-cash payment activities. The large number of local players in the Indonesian fintech industry makes local e-wallet applications still the prima donna of cashless solutions in Indonesia. The top five applications that are most in demand by users of financial technology services are Go-Pay, OVO, DANA, LinkAja, and Jenius. While in the top ten category, there are Go Mobile issued by PT Bank CIMB Niaga Tbk, iSaku, Sakuku, Doku and Paytren in the last position [7].

Technology, knowledge level and financial behaviour are related. Currently, technology that leads to innovation has developed finance with a touch of modern technology in the service sectors that can create more efficient financial systems. Financial literacy is related to individual financial management. Individual financial management is not just for adults who already have income. For students, the pocket money received from their parents also becomes income when they have the right to use it. This explanation covers all aspects of personal financial management, which is an application of the concept of financial management at the individual level.

In [8] declared that increased knowledge can lead to improvements in financial management practices, if students have financial education that combines development skills and motivational strategies can be one way to obtain the desired behaviour change in financial management practices. In summary, these findings indicate that financial behaviour can be demonstrated by management control activities. Students have an important role, not only in a literacy function but also in financial education. The easier use of fintech-based technology should make students better at managing finances.

According to the role as an agent of change, students are required to have financial literacy that is oriented towards high intelligence in managing personal finances. There are several previous studies that have examined the effect of financial literacy on financial management behaviour, but this has not been completed with the issue of digital

technology development 4.0 which explains the effect of using fintech, which may have a positive or negative impact on student financial management in Surakarta.

The development of financial technology or Financial Technology (FinTech) in social life including young people who are dominated by students must have an impact on the behavior of the users of the FinTech application. FinTech in the E-Wallet category is a new breakthrough in recent years that helps make it easier for the community, especially young people (students) who are responsive to technology in terms of payments and depositing funds.

With the E-Wallet, students who are used to using smartphones and installing FinTech applications can make online purchases in just a few seconds. The E-Wallet feature, which has a high level of security, also attracts students to make payment transactions in everyday life, even for academic needs on campus which can be accessed online.

In addition to providing convenience in terms of transaction processing that is convenient and practical for young people (students), E-Wallet also has advantages over other FinTechs. This E-Wallet application allows students to use digital money to make payments for airline tickets, bus tickets, train tickets, hotel room bookings, pay electricity, water and telephone bills, as well as make purchases at various minimarkets. The convenience offered by E-Wallet that does not require students to look for money in their wallets and shirt pockets and minimizes errors in returning from the cashier also helps to make credit installments. The existence of this application should be able to make student behavior better in managing debts, bills and credits that are dependents.

Technological advances in Fintech (E-Wallet) services, which are increasingly in demand by the public, especially among students, are thought to be able to influence the lifestyle and financial behavior of students. Through the study in this paper, the researcher wants to find out whether the use of FinTech applications and student financial literacy will affect student financial management in managing savings, investments, credit, insurance and expenses in daily activities.

This study focused on students majoring in economics because they were assumed to have better financial knowledge. The next section covers the literature review and conceptual framework. Thereafter, hypothesis development is discussed. It is followed by methodology, instrument, data collection techniques, results, discussion, implications, conclusion and limitations.

2 Hypothesis Development

2.1 Fintech Utilization to Financial Management Behaviour

The National Digital Research Center describes fintech as an innovation in financial services while the FSB understands fintech in a broader definition as a form of innovation that develops various applications and business models with financial service providers [1]. Based on some of the theories above, it can be concluded that financial technology is a combination of technology and financial services. In [9] Fintech is also defined as “the use of mobile phones as mobile banking and investment services can be used as an example of combining technology with the financial system to provide financial services that are more accessible to the wider community”. Then, an electronic payment system is interpreted as a solution for merchants to provide online payment options via

the internet for their consumers. Electronic payment can also be defined as a payment process that is made without using paper instruments [10].

Electronic payments in the transaction process involve five main entities from both the business and financial sides, including consumers, merchants, issuers, acquirers and payment system providers [11]. Payment system providers are entities that process electronic payment transactions that connect issuers and acquirers and consumers and merchants through a secure internet network. According to [12] electronic or digital payment systems consist of online credit card transactions, digital wallets, digital cash, online stored value systems, digital accumulating balance systems, digital checking payment systems and wireless/mobile payment systems. In [13] identify six fintech business models implemented by the ever-growing number of fintech startups: payment, wealth management, crowd-funding, lending, capital market, and insurance. End User Computing Satisfaction (EUCS) is a method for measuring the satisfaction level of users of an information system by comparing expectations and reality. The definition of End User Computing Satisfaction of an information system is the overall evaluation of information system users based on their experience in using the system. This EUCS evaluation model was developed by [14]. Evaluation using this model emphasizes end-user satisfaction with technological aspects, by assessing the content, accuracy, format, time and ease of use of the system.

In [15] Ajzen's Theory of Reasoned Action (TRA) explains that a person's attitudes and behavior are under the control of each individual. Furthermore, the Theory of Planned Behavior (TPB), which is a development of the previous theory, describes that internal and external factors control a person's behavior.

The existence of trust, usefulness and ease of application of fintech have an effect on one's financial behaviour. In [16] confirm financial attitude mediates the relationship between financial knowledge of students and responsible financial management behaviour. In [17] also suggest that fintech has positively benefited households by increasing consumption and borrowing. In [18] demonstrated that financial literacy moderates the relationships between risk aversion and saving behaviour. In [19] indicate that trust in service and structural assurance can continue the intention of fintech service. The availability of a smartphone application to manage budgets, which is one of the fintech features of the digital wallet type, makes it easier for someone to manage personal finances. Through the convenience of applications offered by digital wallets, students can estimate the amount of money that must be saved. This convenience facility is useful for anticipating unexpected expenses as well as being a trick to save money. Mobile payments that make it easy to pay for various transactions, checking savings balances, account mutations, credit instalments and routine transaction payments can be a reference that someone implementing a digital wallet type fintech application will have good financial management behaviour.

In [20] identify that the use of technology has a significant effect on encouraging behavioural intentions to use Islamic fintech. In [21] show that technological self-efficacy affects perceived usefulness and positively influences fintech continuance intentions. In [22] show that the search trend using the keyword "fintech" has increased over the last few years, this indicates that educational institutions need to adjust market needs and balance the level of knowledge through technology developments. The financial technology that

offers ease and accuracy aspect assumed to improve the student's financial management behaviour.

H1: Fintech utilization has a significant positive effect on student financial management behaviour in Surakarta

2.2 Financial Literacy to Financial Management Behaviour

In [23] describe financial literacy is the ability to use knowledge and skills to manage financial resources effectively for lifetime financial security. In [24] contend that financial literacy can be denied by four variables: financial knowledge, financial attitude, financial behaviour and financial ability, all of which are correlated with one another and financial knowledge, which coordinates the attitudes that influence financial management behaviour. In [25] defines financial literacy is a translation of financial knowledge which is defined as the understanding of the key financial terms and concepts necessary for people's daily life. Financial literacy is defined as an individual's abilities to read, write and speak, to calculate and solve problems at the proficiency level needed in an individual, family and [26]. Financial literacy can be defined as the knowledge of basic financial concepts, including the knowledge of compound interest, differences in nominal and real values, and how to make financial decisions for financial welfare effectively. Some of the financial literacy aspects include basic personal finance; money management; credit and debt management; saving and investment; and risk management [27].

There is a person's financial literacy level is classified into several types levels, including; Well literate, Sufficient literate; Less; and Not literate [4] These theories are complemented by [30] stated that there are aspects of financial literacy that can be divided into four aspects; Comprehension of several things related to basic knowledge of personal finance; Savings and borrowing, which includes knowledge related to savings and loans such as the use of credit cards; Insurance, this includes basic knowledge of insurance and insurance products such as life insurance and motor vehicle insurance; Investment, this includes knowledge of market interest rates, mutual funds, and investment risk.

In addition, [31] indicates that effective financial management behaviour should improve through positive financial management. So the financial satisfaction increased. Thus, financial management is mainly concerned with effective funds management. Although many think that the millennial generation is able to adopt technology well, financial management behavior is more complicated than applying technology in activities such as saving and spending. There are several financial problems surrounding credit, risk, investment, and insurance that require a careful, thrifty and careful attitude in making decisions.

According to [32] a person's attitudes and behavior can be influenced by several unexpected factors. The results of this study indicate that a person's external and internal environment such as background, experience, education, gender, age and knowledge are able to influence behavioral beliefs that have implications for a person's decision to behave [33, 34] revealed that men are smarter in managing finances. In [30] it is also explained that the low financial literacy of students occurs due to the lack of personal financial education in college.

Financial management behaviour relates to a person's financial responsibilities regarding how to manage their finances. This definition refers to personal financial responsibility which is defined as the process of managing money and other assets wisely. With good financial management, people will not be trapped in unlimited desire behaviour. Financial management is a person's ability to plan, budget, examine, control, seek and store daily financial funds. Indicators of good financial behaviour can be found in the way a person manages cash flow, credit management, savings and investments [35] Whether or not the current personal financial management is wise is related to developments in the surrounding environment, one of which is the change in information technology and a person's knowledge of financial concepts known as financial literacy.

Financial literacy which is defined as knowledge in managing finance is one of the economic behaviours that develop in society. Financial literacy will affect a person's attitude about how to save, borrow, invest and manage finances. Meanwhile, financial management behaviour refers to how a person behaves in relation to personal finance as measured by individual actions. An individual who is proficient in an area of skill is able to understand and evaluate issues related to the area of skill and is aware of the potential consequence of such area of skill is well-literate. In [36] observed that various socio-economic such as age, gender, income and educational attainment influence the financial literacy level of youth.

These results also confirmed the relationship between financial knowledge and financial behaviour. In [29] indicates that financial literacy is influential and positive toward financial management behaviours of Midwestern university students. In [37] show that financial knowledge significantly positive relates to financial management behaviours of the youth in Vietnam.

In [38] indicated that financial knowledge and financial attitude have positive impacts on student financial behaviour in Brazil. Several previous studies stated that the higher the literacy level a person has, the more effective financial management behaviour is. The study proves that financial knowledge has a positive influence on a person's financial management. Students who have high knowledge of financial concepts will have a wiser attitude in managing their personal finances.

H2: Financial literacy has a significant positive effect on student financial management behaviour in Surakarta

3 Method

This research is classified as quantitative research. Using several variables, namely Fintech Utilization (X1) and Financial Literacy (X2) as the independent variable, while Financial Management Behavior (Y) as the dependent variable. Gender and Education are control variables. The research location is in Surakarta, Central Java, Indonesia and the research was conducted in November 2021. The population is all students in the city of Surakarta. The sampling technique is purposive sampling with the criteria that have been determined by the economic students of State Universities and Private Universities in Surakarta using applications based on financial technology, the type of mobile payment or digital wallet.

There are 250 polling instruments spread, but because the researchers are still using the offline method, not all of the questionnaires are filled out properly. Based on the sampling technique, a sample of 175 respondents was obtained. Furthermore, in the data collection stage, researchers used test instruments and questionnaires that provided several answers to be filled out by students as respondents. The type of questionnaire used provides limited answers so that respondents can only choose answers that have been designed by researchers as a measure of financial literacy and financial management abilities of students. Measurement of Fintech application utilization (X1) is measured using "very satisfied" to "very dissatisfied" a Likert scale consisting of 5 points that describes the criteria "very satisfied" to "very dissatisfied" at number 1.

Financial literacy level variable (X2), data obtained from respondents' answers to 23 questions (attached) adapted from previous research ([30, 39]). The number of correct answers in the student questionnaire was calculated and divided by all questions and then multiplied by one hundred percent. Processing the correct answers, then a descriptive analysis is carried out to describe three categories, namely high if $> 80\%$ is given a score of 3, the medium category in the 60–80% range is given a score of 2 while the low category in the $< 60\%$ range gets a score of 1. Financial management behavior (Y) uses the FMB scale of [35] which shows how often respondents have carried out financial activities in the last six months. The Likert scale (5 to 1) from "always" to "never." Previously, these instruments were tested for validity and reliability. The results of the validity test show that all instruments are valid and have a reliability coefficient > 0.7. Indicators of each variable l in the paper is presented in the Table 2.

Regression analysis in this study is formulated in the form of structural equations listed below. The next step is the questionnaire data in the form of tests and questionnaires from sample students at several universities in Surakarta and then processed using descriptive statistics and hypothesis testing using IBM SPSS Statistics 17 for Windows.
$y = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \beta 4X4 + e.$

Notes:

Y = financial management behaviour scores
X_1 = perceptions of fintech utilization scores
X_2 = personal financial literacy scores
X_3 = the gender
X_4 = the education backgrounds
α = constant
e = error term which shows the uncertainty

4 Result and Discussion

Based on Table 3, it is known that the number of female respondents is more than male respondents. Female respondents were 89 students (50.85%) while female respondents were 86 students (40.85%). The education level is dominated by undergraduate students (D1 / D2 / D3 / D4 / S1), 172 students (98.29%). The private university education level of 50.29% and students from state universities of 49.71%. The general description also explains that the average income and allowance of students in Surakarta ranges from 1 to 2 million rupiahs per month (71.43%). The most widely used financial technology

Table 2. The indicators of instrument

	Operational definition	**Indicators**	**Items**	**References**
Fintech utilization (X1)	Refers to the notion of perception theory of the End User Computing Satisfaction (EUCS) model.	Content Accuracy Format Ease of use Timeliness	12 items	Doll and Torkzadeh [14]
Financial literacy (X2)	Refers to personal financial knowledge of college students	General knowledge Saving and borrowing Insurance Investments	23 items	Chen & Volpe, [30] Mendari & Kewal, [39]
Financial management behaviour (Y)	Refers to the financial management behaviour scale (FMBS) as used in the family response to financial instability study	Saving and investment Cash management Credit management Insurance	15 items	Dew &Xiao [35]
Gender (Z)	Refers to the theory of most cultures currently construct their societies based on the understanding of gender binary –two gender categorizations	Male (Dummy = 1) Female (Dummy = 0)	-	Nadal [40]
Education (Z)	Based on ownership, higher education institutions in Indonesia are divided into two groups.	Public universities (Dummy = 1) Private universities (Dummy = 0)	-	UU No. 22 tahun 1961 [45]

application by students is the OVO e-wallet service, which is 52%, then Go-Pay at 37.71%, LinkAja at 6.86%, and Dana in fourth place at 3.43%.

The table also explained that the satisfaction level of all fintech application users in Surakarta has an average value of 4.05 or in the "satisfied" level, according to the perceptions of students who have used the application, in general, they consider the fintech digital wallet to be satisfactory, this level of satisfaction lower than the level "strongly satisfied" but higher than the level "rather satisfied". Aspects of content, accuracy, ease to use and timeliness are at level 4 (satisfied) while the format aspects are at level 3 with

the criteria "rather satisfied". The most dominant aspect that results in satisfaction for fintech users in Surakarta is accuracy, which has a mean value of 4.15. These results indicate that the accuracy of fintech applications in providing correct information is very satisfying to users.

Then, Table 4 shows the percentage of correct answers from the tests which are indicators of financial literacy variables. The ability of the respondents in answering questions in accordance with the basic aspects of personal finance skills is at a high level at 82%, the aspects of loans and savings are in the medium level at 75.5%, and knowledge about insurance and investment is also at the medium level. Overall, the level of student financial literacy in Surakarta based on the average correct answers in the questionnaire is in the medium level of 75.63%.

Table 5 depicts the personal financial literacy level of the respondents, this literacy level is described based on the answers of each respondent, 175 economics students who are in Surakarta. The results showed that 16 students had a low literacy level of $< 60\%$, while 53 students had high financial knowledge skills or about $> 80\%$ correct answers in the questionnaire tests that had been completed. While the majority of students 106 respondents have a medium financial literacy level (60–80%). Overall, it can be seen that

Table 3. The Satisfaction Level of Financial Technology Users

Fintech utilization (EUCS parameters)	Mean	Level
Content	4.14	satisfied
Accuracy	4.15	satisfied
Format	3.93	rather satisfied
Ease of use	4.01	satisfied
Timeliness	4.02	satisfied

		(%)		(%)
Level of education			Gender	
*Undergraduate	172	98.29%	*Male	86 (40.85%)
*Postgraduate	3	1.71%	*Female	89 (50.85%)
Types of colleges			Income	
*Public universities	87	49.71%	* < 1m IDR	50 (28.57%)
*Private universities	88	50.29%	*1–2 m IDR	125 (71.43%)
Financial technology application (e-wallet/mobile payment)			Periods	
*Dana	6	3.43%	* < 1 year	22 (12.57%)
Go-Pay	66	37.71%	*1–2 years	153 (87.43%)
*LinkAja	12	6.86%		
*OVO	91	52.00%		

economic students in Surakarta have a moderate level of financial literacy, the number of students at this level dominates by 60.57% (Table 6).

The results of these descriptive statistics indicate that the scale of student financial management behaviour is still at level 3 with a frequency of "sometimes", meaning that students cannot yet be called "capable" of managing their personal finances in various aspects.

Table 4. The Respondents' Financial Literacy (Correct Responses)

Correct responses	Personal Financial Literacy Level (%)		
	Low	Medium	High
* Benefits of personal financial knowledge	164		93.71
* Knowledge of personal financial planning	145		82.86
* Liquidity of an asset	134	76.57	
* Knowledge of net assets	142		81.14
* Knowledge of expenditure and income	130	74.29	
Mean correct responses "Basic Personal Finance Knowledge"			82.00
* Calculation regarding compound interest	125	71.43	
* Deposit characteristics	144		82.29
* Knowledge of credit card interest	143		81.71
* Knowledge of credit cards	123	70.29	
* Factors affecting creditworthiness	126	72.00	
Mean correct response "Savings and Loans"		75.54	
* Knowledge of insurance premiums	131	75.43	
* Knowledge of vehicle insurance premiums	121	69.14	
* Knowledge of life insurance	139	79.43	
* Knowledge of health insurance	124	70.86	
* General knowledge about insurance	123	70.29	
* Knowledge of the types of life insurance	132	75.43	
* Groups of people who have the greatest risk	128	73.14	
Mean correct responses "Insurance"		73.00	
* Effect of interest rates on bond prices	130	74.29	

(*continued*)

Table 4. (*continued*)

Correct responses	Personal Financial Literacy Level (%)		
	Low	Medium	High
* Knowledge of mutual funds	138	78.86	
* Knowledge of long term investment	129	73.71	
* Knowledge of investment tuition fees	122	69.71	
* Knowledge of investment risks	117	66.86	
* Groups of people who are suitable for high-risk investments	118	67.43	
Mean correct responses "Investment"		72.00	
Mean correct responses all aspects		75.63	

Table 5. The personal financial literacy level

Category	Total	Percentage
Low	16	9.14%
Medium	106	60.57%
High	53	30.29%
	175	100%

Table 6. The respondent Financial Management Behavior Frequency Scale

Subscale			Frequency		
	Always	Often	Sometimes (3)	Seldom	Never (1)
	(5)	(4)			
Cash management subscale			77.4%		
Credit management subscale			70.4%		
Saving and investment subscale			70.80%		
Insurance subscale				56.65%	

Behaviour "sometimes" in the medium level indicates that activities such as paying bills on time, providing funds for unexpected needs, making budgets, recording expenses, and saving are not always carried out by students (Table 7).

Table 7. Results of Regression Analysis

Variable Standardized Coefficients Beta	Std.Error	t -statistic	Sig.
Fintech utilization -0.173	0.099	−2,865	0.005
1.Financial literacy 0.282	0.024	4,659	0.000
2.Education 0.379	0.532	5,759	0.000
Gender 0.197	0.532	2,999	0.000
Constant	5,554	10,146	0.000
R -square 0.381			
Adjusted R -square 0.367			
F -Statistic 26,205			
0.000Sig.F- statistic			
Note:Dependent variable:financial management behavior			

Based on the results of hypothesis testing presented in Table 8, the fintech variable has a sig. Level $0.005 < 0.05$ and the beta coefficient value of -0.173, meaning that fintech utilization affects student financial management behaviour in Surakarta. This negative coefficient indicates that the higher the level of fintech utilization satisfaction, the lower the scale of financial management behaviour.

The results of this test reject the hypothesis that has been formulated. Sig. Level of financial literacy $0.000 > 0.05$ with a coefficient value of 0.282 explains that financial literacy has an effect on student financial management behaviour, these results accept the formulated hypothesis, that the higher the level of student financial literacy, the higher the scale of personal financial management behaviour.

Gender and education variables have a sig value. < 0.05, this result indicates that the two variables are able to influence fintech variables and financial literacy on financial management behaviour, gender and education are able to control the dependent variable, which means that not only variables X1 and X2 affect student financial management behaviour in Surakarta, but there are other variables, namely gender and status of the college where the student is studying. Sig. F level of $0.000 < 0.05$, it can be concluded that simultaneously the variables of fintech utilization, financial literacy, gender and education have an effect on student financial management behaviour. The regression equation can be formulated as follows: Y (financial management behavior) = -0.173 X1 + 0.282 X2 + 379 X3 + 0.197 X4 + e.

4.1 The Effect of Financial Technology Utilization on Financial Management Behaviour

The interpretation of the test results is that the higher the level of student satisfaction with e-wallet applications, the lower the level of their financial behaviour. The convenience features offered by financial technology applications in the e-wallet category such as OVO and Go-Pay have not been able to provide a good understanding of fintech utilization in positive financial behaviour such as paying bills on time, making a budget, buying stocks, and paying insurance.

The existence of services for storing money electronically in digital wallets has not been able to encourage students to manage personal cash effectively. Cash management such as comparing prices when buying products and recording expenses every month has not been done well, this is evident from the measurement results of the student personal financial management scale which is in the "sometimes" level. Financial management which is carried out "sometimes" or even "rarely" is a form of student responsibility that is not good enough, the use of digital wallets as a financial management application is inversely proportional to its function as a driving force for "saving and investment" behaviour for students.

The results do not support the previous research by [19] which states that the use of appropriate fintech services can support the insurance structure. In [17] suggests that the use of fintech has a positive impact on the consumption and borrowing aspects. The availability of a smartphone application to manage budgets, which is one of the fintech features of the digital wallet type, makes it easier for someone to manage personal finances.

The limitations of the research sample are also one of the factors that are thought to cause the discrepancy of the test results with the hypothesis formulated by the researcher. The ease of saving and investing easily via a smartphone has not become the financial behaviour of students in Surakarta, on the contrary, the timeliness of digital wallets in the payment process makes students more consumptive. Cashless activities, which often offer the convenience of shopping online, have led to an increase in consumerism among students in Surakarta.

This result is supported by data from [28] which shows that the Marginal Propensity to Save (MPS) ratio decreases, while the Marginal Propensity to Consume (MPC) ratio increases. This ratio is evidence that in recent years people prefer to use their income for shopping activities rather than saving. It can be concluded that financial technology applications blowup such as digital wallets has not become a solution for providing financial education and understanding that is in accordance with the student's lifestyle to improve financial management behaviour.

4.2 The Effect of Financial Literacy on Financial Management Behaviour

The test results show that the coefficient shows a positive number, in accordance with the theory that has been hypothesized that financial literacy has a positive and significant effect on student financial management behaviour in Surakarta. Financial literacy has test results that are directly proportional to financial management behaviour, meaning that the higher the level of student financial literacy, the higher the scale of their financial management behaviour. A high level of knowledge about student savings, credit, insurance, and investment will lead to better attitudes in making financial decisions. The existence of knowledge about basic personal finance knowledge will form the wise character of students in using their income. Students will behave frugally to achieve financial prosperity. These results support the previous study in [20, 29, 37, 38, 41, 42] and [43] which explains that a person's financial skills and knowledge have a positive effect on financial behaviour. If someone has good knowledge and understanding of finances, their attitude in making financial decisions related to saving, borrowing, investing and insurance will be wiser.

Author's Contributions. Based on the data analysis and discussion that has been carried out, it can be concluded that the use of fintech and financial literacy has an effect on the financial management behaviour of students in Surakarta partially or simultaneously with gender and education as controlling variables. The implication of this research is that financial literacy becomes a supporting factor for financial management behaviour, and the university must provide financial knowledge to students in order to be able to manage finances properly.

This study also provides evidence that the use of fintech applications (e-wallets or digital wallets) has not been able to provide a good understanding for students to manage personal finances appropriately. Students who use fintech applications must be balanced with sufficient financial literacy skills, so they are not trapped in irresponsible financial behaviour. The limitation, it is difficult to find references to financial literacy questionnaires from Chen and Volpe that match the character of the research. This study also uses old-school references to explain the grand theory and define behavioral variables because researchers have difficulty getting the latest references that have authentic values according to the topics taken. Future research is expected to measure fintech variables from another aspect obtained from the observation method.

References

1. Financial Stability Board (FSB, 2017b). Financial stability implications from fintech. 27 June 2017.
2. A World Bank Group Flagship Report. 2016. Global Economic Prospect: Spillovers amid Weak Growth. World Bank Group. Available at http://www.worldbank.org
3. Lyon, David. 2004. Globalizing surveillance: Comparative and sociological perspective. Sage Journal.
4. OJK. 2017. Survei nasional literasi dan inklusi keuangan tahun 2016. Available at: www.OJK.go.id.
5. Howe, N. & Strauss, W. 2000. Generations: The History of America's Future, 1584 to 2069. William Morrow Paperbacks: New York City.
6. Depertemen Komunikasi Bank Indonesia. Ekonomi digital tumbuh hingga rp 4.500 triliun di 2030, pemerintah dan asosiasi sepakat jaga inklusi dan dorong literasi keuangan digital [online].Available : https://www.bi.go.id/id/publikasi/ruang-media/news-release/Pages/sp_2332821.aspx

7. App Annie, 2019. Siapa Aplikasi E-Walletdengan Pengguna Terbanyak di Indonesia? Retrieved from www.iprice.co.od
8. Hilgert, M. A., Hogarth, J. M., & Beverly, S. G. 2003. Household financial management: The connection between knowledge and behaviour. Federal Reserve Bulletin, 309–322.
9. Sanicola, Lenny. 2017. What is FinTech? Huffington Post. Retrieved from www.wikipedia.org.
10. Tella, A. 2012. Determinants of E-payment Systems Success: A user's Satisfaction Perspective. Int. J. E Adoption, Vol. 4, No 3, pp. 15-38.
11. Peterson, D., Howard, C. 2012. Electronic Payment Systems Evaluation: A Case Study to Examine System Selection Criteria and Impacts. I. Journal of Strategic Information Technology and Applications, 3(1), 66–80
12. Laudon, K., Traver, C. 2009. E-Commerce: business, technology, society. Prentice Hall Higher Education.
13. Lee, In and Yong Jae Shin. 2018. Fintech: Ecosystems, Business Models, Investment Decisions, and Challenges. Business Horizons, ScienceDirect,Vol. 61
14. Doll, W.J. and Torkzadeh, G. 1991. The measurement of end-user computing satisfaction: theoretical and methodology issues. MIS Quarterly, Vol 15, No 1, pp. 68-95.
15. Ajzen, I., & Fishbein, M., (1998), Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research, Addison-Wesley, Reading, 129–385.
16. Bapat, Dhananjay, 2020. Antecedents to responsible financial management behaviour among young adults: moderating role of financial risk tolerance. I. Journal of Bank Marketing Vol. 38 No. 5, 2020, pp. 1177–1194.
17. Agarwal, S & Yeow Hwee Chua (2020). FinTech and household finance:a review of the empirical literature. China Finance Review International
18. Amari, M & Basem Salhi, 2019. Evaluating the effects of sociodemographic characteristics and financial education on saving behaviour. International Journal of Sociology and Social Policy, Emerald Publishing Limite.
19. Wang, Z & Guan Z. 2019. What determines customer continuance intention of FinTech? Evidence from YuEbao. Industrial Management & Data Systems Vol. 119 No. 8, 2019, pp. 1625–1637.
20. Darmansyah, et.al. 2020. Factors determining behavioural intentions to use Islamic financial technology Three competing models. Journal of Islamic Marketing.
21. Shiau, W.L & Ye Yuan. 2020. Understanding fintechcontinuance: perspectives fromself-efficacy and ECT-IS theories. Industrial Management & Data Systems available at DOI https://doi.org/10.1108/IMDS-02-2020-0069.
22. Sung, Anna & Kevin Leong. 2019. An exploratory study of FinTech (Financial Technology) education and retraining in UK. Journal of Work-Applied Management Vol. 11 No. 2, pp. 187-198.
23. Huston, S.J. 2010. Measuring financial literacy. Journal of Consumer Affairs, Vol. 44 No. 2, pp. 296–316, available at: https://doi.org/10.1111/j.1745-6606.2010.01170
24. Hung, A.A., Parker, A.M., & Yoong, J.K. 2009. Defining and Measuring Financial Literacy. Rand Labor And Population. Available at http://www.rand.org.
25. Bowen, C.F. 2002. Financial Knowledge of Teens and Their Parents. Counselling and Planning, 13 (2), 93-101.
26. Remund, D.L. 2010. Financial literacy explicated: the case for a clearer definition in an increasingly complex economy. Journal of Consumer Affairs, Vol. 44 No. 2, pp. 276-295
27. Lusardi, A., Mitchell, O.S. and Dan Curto, V. 2010. Financial literacy among the young. Journal of Consumer Affairs, Vol. 44 No. 2, pp. 358–380, available at: https://onlinelibrary.wiley.com/doi/
28. Strategi Perlindungan Konsumen Keuangan 2013–2017. Available at: www.OJK.go.id

29. Jobts, Vicki J. 2014. Does a University Financial Literacy Course Change Financial Behavior? Journal of Higher Education Theory and Practice vol. 14(5), pp 63-77.
30. Chen, H. & Volpe, R.P. 1998. An analysis of personal financial literacy among college students. Financial Services Review 7(2):107-128
31. Joo, S. 2008. Personal Finance Wellness. In: Xiao J.J (eds) Handbook of Consumer Finance Research. Springer, New York, NY.
32. Sommer, Lutz. 2011. The theory of Planned Behavior and The impact of past behavior. The International Business & Economics Research Journal; (10) 1.
33. Ansong, Abraham & Gyensare, M. A, 2012. Determinants of University working Students' Financial Literacy at the University of Cape Coast, Ghana. International Journal of Business and Management (7) 9.
34. Wagland, S.P & Taylor, S. 2009. When It Comes to Financial Literacy, Is Gender Really an Issue? The Australaian Accounting Business & Finance Journal (3) 1.
35. Dew, J., & Xiao, J. J. 2011. The Financial Management Behavior Scale: Development and Validation. Journal of Financial Counseling and Planning, 22(1) 43-59.
36. Garg, N and Singh, S. 2018, Financial literacy among youth.International Journal of Social Economic Vol . 45 No .1, pp. 17 3-186, available at: 10.110 8/IJSE-11-2 016-030.
37. Nguyen, T. N & Thao, T.P. 2015. Factors Affecting Personal Financial Management Behaviors: Evidence from Vietnam. Proceedings of the Second Asia-Pacific Conference on Global Business, Economics, Finance and Social Sciences (AP15Vietnam Conference) ISBN: 978–1–63415–833–6
38. Potrich, A., Vieira, K.M. 2015. Development of a financial literacy model for university students. Management Research Review Vol. 39 No. 3, 2016, pp. 356–376.
39. Mendari, A.S., & Kewal, S.S. 2013. Tingkat literasi keuangan di kalangan mahasiwa stie Musi. Economia, Vol. 9, No. 2, 130-140.
40. Nadal, Kevin L. 2017. The SAGE Encyclopedia of Psychology and Gender. ISBN 1483384276 page 401.
41. Widyawati, I. 2012. Faktor-Faktor yang mempengaruhi literasi keuangan mahasiswa fakultas ekonomi dan bisnis universitas brawijaya. ASSET: Jurnal Akuntansi Dan Pendidikan, Vol. 1 No. 1.
42. Bongomin, G.O & Ntayi, J.M., 2020. Analyzing the relationship between financial literacy and financial inclusion by microfinance banks in developing countries: social network theoretical approach. International Journal of Sociology and Social Policy.
43. Herawati, et.al. 2019. Factors that influence financial self-effi cacy among accounting students in Bali. Journal of International Education in Business Vol. 13 No. 1, pp. 21–36 available at DOI 1 0.11 08/ JI EB -0 2 -2019 -001
44. Hootsuite & We Are Social. 2019. Digital 2019 Global Digital Overview. Available at www.wearesocial.com.
45. Undang-Undang Nomor 22 Tahun 1961 tentang Perguruan Tinggi