



## Financial literacy, self-control, self-esteem, and credit card utilization

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### ABSTRACT

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This study combines one personal financial management concept, money-related literacy, and psychological ideas, i.e., self-control and self-esteem, in one model to be statistically associated with credit card behavior by utilizing gender as the control variable. Therefore, this study investigates and analyses the effect of financial literacy, self-control, and self-esteem on credit card usage. Furthermore, this study employs 120 bank employees as samples, taken by a snowball sampling technique. Besides, this study surveys their perspective based on the close-ended questions in the questionnaire. After obtaining their responses, their validity and reliability are verified. Also, the goodness-of-fit model is detected. After the model fits the data, the structural equation model based on covariance is utilized to examine the causal relationship declared in the proposed hypotheses. After checking them, this study concludes that financial literacy, self-control, and self-esteem successfully create credit card utilization. Employees with strong financial literacy, self-control, and self-esteem are responsible for owning credit cards because they tend to use them less and pay their bills on time. Females have a positive propensity for credit card utilization to achieve their identity and emotional status. As an implication, the study recommends females instantly convert their transactions into installments and pay the bill in the maximum and minimum ranges to avoid a decrease in credit scores. Besides, internal and external marketing is needed to attract female employees working at similar banks or other banks that cannot issue credit cards.

**Contribution/Originality:** This study enriches the related research on credit card utilization based on financial concepts such as financial literacy, and psychological ideas such as self-control and self-esteem. The enrichment is proven by the meaningful effect of financial literacy, self-control, and self-esteem as primary variables and gender as the control variable on credit card utilization, with an enormous R-squared of 94.2%.

## 1. INTRODUCTION

Besides getting profits from the intermediary function, i.e., allocating funds from depositors to loans to society, banks can obtain additional revenue from the services (Mishkin & Eakins, 2018). This revenue is also called fee-based income, where one of the sources is the charge on the credit cards utilized by their consumers (Ismaulina & Haqiqi, 2018). These cards are a bank partnership under the license of international organizations, such as Master Card, Visa, American Express, Diners Club, Japan Credit Bureau, and Chinese Union Pay (Trinh, Tran, & Vuong, 2020). Unlike bank loans, people can use their cards without providing a fixed asset as collateral (Ponpunthin &

Jantarakolica, 2017). With these cards, users can spend the existing limit on buying goods and paying for services (Akela, 2020). Additionally, they can withdraw money in advance (Trinh et al., 2020) through automatic teller machines (Achsani, Achsan, & Bandon, 2022).

The utilization of credit cards by individuals includes not only the acquisition of goods, payment for services, and cash withdrawals in advance but also encompasses the many methods of billing payments, whether in their entirety or thorough installment plans. If the bills are unpaid punctually, the users must compensate the late charge fee set by the bank issuing this card (Soll, Keeney, & Larrick, 2013). Their rating status will decline if they cannot pay the minimum amount (Jaishu, 2018). In Indonesia, the minimum level intended is 10% of the amount billed (Sumarto, Subroto, & Arianto, 2011).

Studies learning the behavioral determinants of credit card users exist based on respondents from several countries, such as the United States (Limerick & Peltier, 2014; Mansfield, Pinto, & Parente, 2003; Robb, 2011), the United Kingdom (Gathergood, 2012), Brazil (Matos, Vieira, Bonfanti, & Mette, 2019), Mexico (Hernández-Mejía, García-Santillán, & Moreno-García, 2021), China (Chen, Yu, & Sun, 2023; Wang, Lu, & Malhotra, 2011), Oman (Uddin, 2021), Spain (Fernández-López, Castro-González, Rey-Ares, & Rodeiro-Pazos, 2023), Malaysia (Ahmed, Ismail, Sadiq Sohail, Tabsh, & Alias, 2010; Alam, Rahim, Haq, & Khan, 2014; Omar, Rahim, Wel, & Alam, 2014), Pakistan (Perera, Dayanga, & Jayasuriya, 2016), and Indonesia (Destianata & Lutfi, 2016; Haryana, 2017; Lestari, Suharjo, & Muflikhati, 2017; Sandy & Renanita, 2018; Simanjuntak & Rosifa, 2016).

At least three determinants of credit card utilization (CCU) exist in their research model: financial literacy (FL), self-control, and self-esteem. However, the result is still totally debated. Robb (2011) explains that FL negatively affects maximum credit utilization, late payment, and cash in advance and positively influences paying the bill above the minimum amount. In their study, Alam et al. (2014) document a positive tendency of FL towards CCU. Meanwhile, Hernández-Mejía et al. (2021) demonstrate that FL positively affects the personal payment of entire bills. Furthermore, Chen et al. (2023) exhibit that FL positively and negatively influences respectable and undesired CCUs. Uddin (2021) reports that respectable FL decreases terrible CCU. Differing from those only focusing on the single credit product, Gathergood (2012) emphasizes nine credit products: overdrafts, personal loans, store cards, mail-order catalogs, hire purchases, home credit, payday loans, credit union loans, and credit cards. Related to CCU, Gathergood (2012) proves no association. Similarly, Destianata & Lutfi (2016) and Fernández-López et al. (2023) disclose it. Equally, (Matos et al., 2019) show no impact of the FL on behavioral indebtedness.

The relationship between self-control (SC) and CCU also has various results. In their investigation, Mansfield et al. (2003), Wang et al. (2011), Limerick & Peltier (2014), Haryana (2017), Sandy and Renanita (2018), and Fernández-López et al. (2023) report a negative sign. According to Perera et al. (2016), a negative correlation exists between SC and revolving debt on credit cards in the married group but does not occur in the single group. Meanwhile, the correlation between SC and debt installment does not happen in both groups. Additionally, Lestari et al. (2017) confirm a positive effect of perceived behavioral control on the intention of CCU. Meanwhile, (Gathergood, 2012) demonstrates that impulsive spending as a self-control measurement does not affect credit card use. Finally, different results occur in the association between self-esteem and CCU. In their research, Wang et al. (2011), Omar et al. (2014), and Matos et al. (2019) prove a negative relationship. Meanwhile, Ahmed et al. (2010), studying 1,210 Malaysians, prove that self-esteem does not affect the credit card attitude as a behavioral representation. Besides, Perera et al. (2016) and Simanjuntak and Rosifa (2016) affirm this insignificant result after investigating 163 Sri Lankans in Colombo and 60 Indonesian working women, respectively.

This contradictory evidence motivates this research, which investigates the effect of financial literacy, self-control, and self-esteem on credit card utilization by employing people working in banks from low to high levels: bank staff members to board directors in several cities in Indonesia. Indeed, these employees can own this credit because of the internal bank offering and recommendations from their networks working in other banks.

Additionally, using bank employees as the research object differs from previous scholars dominant use of university students (Braunsberger, Lucas, & Roach, 2004; Limerick & Peltier, 2014; Mansfield et al., 2003; Pinto, Mansfield, & Parente, 2004; Robb, 2011).

## 2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### 2.1. Relationship Between Financial Literacy and Credit Card Utilization

Financial literacy refers to the capability and sureness to apply comprehension based on personal financial concepts of products. This comprehension comes from knowledge gained from education or experience (Huston, 2010). It effectively shapes the behavior of credit card utilization (Hernández-Mejía et al., 2021; Hye, 2022; Robb, 2011; Uddin, 2021). After learning the behavior of 1,354 college students from south-eastern universities, Robb (2011) concludes that the more financially knowledgeable the students are, the wiser they are with their credit cards: Those with high knowledge decrease their maximum credit utilization. Then, they pay the bill above the minimum amount, seldom take cash in advance, and do not postpone the payment.

Utilizing 2,170 Mexicans as the samples, Hernández-Mejía et al. (2021) demonstrate that citizens with more precise answers to financial literacy items pay the credit card bill entirely. Descriptively, Uddin (2021) concludes that after exhausting the maximum limit, persons with higher literacy cut their dangerous credit card behavior through punctual payment, payment delinquency avoidance, and cash advance evasion based on the perspective of 200 Omani consumers from Muscat Bank, Dhofar Bank, and National Bank of Oman. In their investigation based on the United States National Financial Capability Study dataset in 2009, 2012, 2015, and 2018, Chen et al. (2023) confirm that FL positively and negatively influences respectable and undesired CCUs, respectively. Based on this evidence, the first hypothesis is declared as follows:

*H<sub>1</sub>: Financial literacy cuts the tendency to utilize a credit card.*

### 2.2. Relationship Between Self-Control and Usage of Credit Card

Self-control is relevant to the buying decisions of consumers. Individuals with high self-control can control their emotions and make reasonable decisions by refraining from buying unnecessary products (Baumeister, Bratslavsky, Muraven, & Tice, 1998). In the contemporary era, this purchase is usually conducted virtually and facilitated by credit cards (Xu, Unger, Bi, Papastamatelou, & Raab, 2022). Related to self-control, Mansfield et al. (2003) associate it with credit card utilization among 165 college students in the United States. In conclusion, their study declares that full-payers have tougher self-control, characterized by substandard impulsivity, than non-full-payers.

Furthermore, by investigating 837 Chinese, Wang et al. (2011) demonstrate that people with high self-control will avoid using debt already paid on credit cards. In their research based on the perceptions of 322 students enrolling in a marketing class at a Midwestern university, Limerick and Peltier (2014) examine the effect of self-control failure on a credit card application and find that this failure, reflected by impulsivity, affects this usage positively. Perera et al. (2016) exhibit a negative correlation between self-esteem and revolving debt on credit cards in the married group of Pakistani executives in Colombo: 72% from 163 people.

The study of 96 people in Surabaya by Haryana (2017) exhibits that the higher the self-control, the lower the personal tendency to use a credit card. In their research utilizing 73 Indonesian career women in Surabaya, Sandy and Renanita (2018) conclude that self-control reduces harmful credit card usage. By employing 8,554 Spanish citizens as the samples, Fernández-López et al. (2023) prove a negative propensity of self-control towards taking cash in advance behavior on credit cards for individual level. Based on this evidence, the second hypothesis is declared as follows:

*H<sub>2</sub>: Self-control cuts the tendency to utilize a credit card.*

### 2.3. Relationship Between Self-Esteem and Credit Card Utilization

According to Maslow (1943), self-esteem is the need to appreciate oneself and others. Hierarchically, from the bottom, this need exists after physiological, safety, love, and social. From the top, this need places the second after self-actualization. This self-esteem contains two aspects. The first is the desire for strength, achievement, adequacy, freedom, and confidence in facing reality; the second is respect, recognition, attention, and appreciation from others. Hence, Rendall, Brooks, and Hillenbrand (2021) explain that individuals with high self-esteem need not improve their self-image. In their study, Wang et al. (2011) investigate Chinese consumers and effectively deduce that individuals with elevated self-esteem reduce credit card utilization. Similarly, Omar et al. (2014) investigation exhibits that high self-esteem inclines to lessen the degree of credit card misapplication by Malaysians. In Brazil, Matos et al. (2019) research demonstrates that small-revenue consumers with high self-esteem tend to diminish their indebtedness. Based on this evidence, the third hypothesis is declared as follows:

*H<sub>3</sub>: Self-esteem cuts the tendency to utilize a credit card.*

## 3. RESEARCH METHODS

### 3.1. Variable Explanation

This study employs the latent variables: credit card utilization, self-control, and self-esteem. According to Ghozali (2017), these variables cannot be directly observed; therefore, their reflecting items must exist. For credit card utilization, the indicators employed are from Hussin, Kassim, and Jamal (2013), with minor modifications. The associated modified items are: I always use my credit card when shopping everywhere (CCU1) and do not think to buy goods carefully with my credit card (CCU3). Regarding payment, we modify Hussin et al. (2013) by providing three choices of single items (CCU4). One is for safety payment and happens when respondents fully pay the bill. Three is for a reasonable disbursement and occurs when they pay the invoice between the minimum and the entire amount. Five is for unsafety payment, which happens when they pay the bill at a minimum amount.

**Table 1.** The topic of question to measure the financial literacy level.

Topic	Code	Question
Annual percentage rate	APR1	The variable annual percentage rate (APR) is the interest charged for carrying a balance on my credit card.
	APR2	Variable APR will not be applied if I pay off my credit card bill each month.
	APR3	Variable APR is the cost paid to the bank to purchase by utilizing my credit card.
	APR4	When charges and their balance occasionally exist, I must pay an annual percentage rate to compensate the bank for carrying that balance.
A penalty annual percentage rate	PAPR1	A penalty annual percentage rate (Penalty APR) is a percentage increase over the regular yearly percentage rate paid to a bank to cover the cost of borrowing money because of a credit card purchase. This penalty is usually used if I pay the credit card bill late or fail to pay.
	PAPR2	Penalty APR is similar to a fine paid to the bank for continually paying my credit card bill late.
Yearly fee	YF1	The annual fee is the price paid every year to a bank for the credit card privilege.
	YF2	The bank will charge the annual fee as a cost for my credit card usage.
Unpunctual fee	UF1	An unpunctual fee is a price charged for taking an overdue payment to the bank, and it is mechanically charged to my account every time I pay late.
	UF2	When paying a credit card bill unpunctually, I shall be charged a late fee by the bank.
The introductory annual percentage rate	IAPR1	An introductory APR is a cost paid to a bank to purchase or transfer balances to a credit card. It generally only lasts for a detailed period.
	IAPR2	Introductory APR usually lasts for a specified period and is generally only applied to purchases not paid off monthly or balance transfers made during that time.

According to Braunsberger et al. (2004), credit card-related financial literacy is directly quantified by the correct answer to twelve questions. Furthermore, the respondents are asked to select one precise solution based on these questions, i.e., true or false. If they correctly answer, the point is one, and zero if they mistakenly answer. Hence, considering Ghozali (2017), financial literacy becomes a non-latent variable. Moreover, the twelve questions intended are classified into four topics: annual percentage rates (APR1, APR2, APR3, and APR4), penalty annual percentage rate (PAPR1 and PAPR2), yearly and unpunctual fees (YF1, YF2, UF1, and UF2), and the introductory annual percentage rate (IAPR1 and IAPR2), as Table 1 exhibits.

Besides, six positive items from Tangney, Baumeister, and Boone (2004) exist to measure self-control. The intended items are: lousy matters cannot affect me easily (SC1); I do not let myself lose control (SC2); everyone counts on my arranged timetable (SC3); I am not influenced by bad things (SC4); I deserve to be trusted (SC5); and I like regular life (SC6). Additionally, self-esteem is measured by the ten items from Rosenberg (1965). They are: I am content with myself (SE1), I do all of the kindness in my life (SE2), I have some qualified things (S3), I can do everything well as the other persons do (SE4), I am proud of myself in all aspects (SE5), I am always helpful all the time (SE6), I am valuable at least equal to others (SE7), I can appreciate myself (SE8), I am generally successful person (SE9), and I can respond to myself positively (SE10). Following Robb (2011), Limerick and Peltier (2014), Matos et al. (2019), Hernández-Mejía et al. (2021), Uddin (2021), and Fernández-López et al. (2023), this study adds gender as the control variable. According to Ghozali (2017), it is classified as a non-latent variable. Hence, this study uses a dummy variable, where one and zero are for the female and male groups, respectively as the reference and base categories.

### 3.2. Population and Samples

The population is made up of employees working in banks in Indonesia. Moreover, this study utilizes the snowball sampling technique. According to Hartono (2012), with this technique, the respondents as samples are collected based on the references from the network. In this study context, we communicated with the recognized bank employees and asked them to invite co-workers, supervisors, and leaders to join this research. Based on this action, this study effectively used 120 respondents as the sample.

### 3.3. Technique to Obtain the Data

The data were collected through a survey. Moreover, to implement it, this study encompasses the questionnaire sharing with the respondents as the target, as Hartono (2012) suggests. Mentioning Hartono (2012), the Likert scale based on five points measures credit card utilization, self-control, and self-esteem, starting from one to five to express disagreement and agreement.

### 3.4. Model for Analyzing the Data

In this investigation, the structural equation model is based on covariance functions to analyze the data. In this research context, the model intended can be obtained from equation 1.

$$CCU = \beta_0 + \beta_1 FL + \beta_2 SC + \beta_3 SE + \beta_4 GENDER + \zeta_1 \quad (1)$$

Equation 1 is the structural model explaining that credit card utilization (CCU), as the dependent, is the function of financial literacy (FL), self-control (SC), and self-esteem (SE) as the primary independent variables, and gender as the control and independent variable.

As the initial step, the examination of validity and reliability is needed for the latent variables: CCU, SC, and SE. Furthermore, the answer is verified by confirmatory factor analysis, resulting in a loading factor (LF) and an average variance extracted (AVE). This confluent validity test is reachable if each value is higher than 0.5 for LF and AVE, respectively. The reliable response is determined based on composite reliability and Cronbach Alpha. The answer passes this reliability detection if this coefficient is more significant than 0.7. Additionally, to equip the

testing result with confluent validity, this study employs discriminant accuracy by comparing the AVE square root with the correlation among the latent variables (Ghozali, 2017).

Then, the best-fit goodness model must exist; therefore, the research activates the modification index. The next step is to find out how well the model fits by several tools, as as chi-square divided by the degree of freedom (CMIN/DF), Tucker Lewis index (TLI), comparative fit index (CFI) (Ghozali, 2017), parsimony goodness of fit index (PGFI), parsimony normal fit index (PNFI), and parsimony comparative fit index (PCFI) (Dash & Paul, 2021). The required CMIN/DF is between two and five. For TLI and CFI, the compulsory value is above 0.9 (Ghozali, 2017). Meanwhile, acceptable PGFI, PNFI, and PCFI happen if they are more significant than 0.5 (Dash & Paul, 2021). Finally, after meeting the goodness of fit criteria, the subsequent step is hypothesis examination, comparing the probability (1-tailed) of the critical ratio for coefficients with a 5% significance level. This research hypothesis is agreeable if this probability is less than 5% (Ghozali, 2017).

## 4. RESULT

### 4.1. Employee Profiles

After distributing the questionnaire between June 2022 and January 2023, this study successfully collected 120 employees working in banks as samples. Furthermore, they are classified by gender, age, bank name, working duration, working position, and location, as exhibited in Table 2.

Table 2. Employee profiles.

Profile	Description	Total	Portion
Gender	Male	46	38.33%
	Female	74	61.66%
Age	From 21 to 30 years old	58	48.33%
	From 31 to 40 years old	34	28.33%
	From 41 to 50 years old	15	12.50%
	From 51 to 55 years old	13	10.83%
Bank name	Bank Artha Graha	1	0.83%
	Bank Bumi Arta	2	1.67%
	Bank Central Asia	18	15.00%
	Bank Danamon Indonesia	28	23.33%
	Bank Fama	1	0.83%
	Bank Jateng*	1	0.83%
	Bank Mandiri (Persero)	7	5.83%
	Bank Maybank Indonesia	3	2.50%
	Bank Negara Indonesia	4	3.33%
	Bank Neo Commerce	1	0.83%
	Bank Nusa Tenggara Timur*	1	0.83%
	Bank Panin	8	6.67%
	Bank Permata	3	2.50%
	Bank Rakyat Indonesia	1	0.83%
	Bank Raya Indonesia	2	1.67%
	Bank Sinarmas	1	0.83%
	Bank Tabungan Negara	2	1.67%
	Bank UOB Indonesia	2	1.67%
	Bank Jabar Banten*	2	1.67%
	Bank Lampung*	1	0.83%
	Bank Perkreditan Rakyat (BPR) Adhierresa**	1	0.83%
	BPR Bina Maju Usaha**	3	2.50%
	BPR Daya Lumbung Asia**	1	0.83%
	BPR Karyajatnika Sadaya**	2	1.67%
	Bank Tabungan Pensiunan Nasional (BTPN)	2	1.67%
	CIMB Niaga	11	9.17%
CTBC bank	1	0.83%	
KB Bukopin	2	1.67%	

Profile	Description	Total	Portion
	KEB Hana bank Indonesia	1	0.83%
	OCBC NISP	6	5.00%
	Standard Chartered bank	1	0.83%
Working duration	Between one year and five years	37	30.83%
	Between 5 and 10 years	31	25.83%
	Between 11 and 15 years	28	23.33%
	Between 16 and 20 years	8	6.67%
	Above 20 years	16	13.33%
Working position	Director	2	1.67%
	Risk monitoring committee member	1	0.83%
	Branch head	8	6.67%
	Division head	7	5.83%
	Manager	24	20.00%
	Bank staff member	78	65.00%
Bank location	Bandar Lampung	6	5.00%
	Bandung	59	49.17%
	Bogor	1	0.83%
	Garut	1	0.83%
	Jakarta	16	13.33%
	Karawang	2	1.67%
	Kudus	1	0.83%
	Kupang	1	0.83%
	Magelang	1	0.83%
	Palembang	1	0.83%
	Purwokerto	1	0.83%
	Semarang	25	20.83%
	Surabaya	1	0.83%
	Tangerang	1	0.83%
	South Tangerang	2	1.67%
Yogyakarta	1	0.83%	

Note: \* = Regional development bank, \*\* = Rural bank, and without sign = Commercial banks.

4.2. Validity and Reliability Examination Result

Table 3 presents the confirmatory factor analysis for the latent variables: credit card utilization (CCU), self-control (SC), and self-esteem (SE).

Table 3. Convergent validity and reliability testing results.

Variable	Indicator	Loading factor	AVE	Composite reliability	Cronbach alpha
Credit card utilization	CCU1	0.874	0.633	0.873	0.816
	CCU2	0.809			
	CCU3	0.716			
	CCU4	0.775			
Self-control	SC1	0.870	0.840	0.969	0.969
	SC2	0.958			
	SC3	0.934			
	SC4	0.950			
	SC5	0.913			
	SC6	0.869			
Self-esteem	SE1	0.607	0.785	0.973	0.971
	SE2	0.639			
	SE3	0.969			
	SE4	0.963			
	SE5	0.906			
	SE6	0.855			
	SE7	0.954			
	SE8	0.959			
	SE9	0.964			
	SE10	0.945			

For the confirmatory factor, the loading factor of CCU1-CCU4 is 0.874, 0.809, 0.716, and 0.775, and SC1-SC6 is 0.870, 0.958, 0.934, 0.950, 0.913, and 0.869; SE1-SE10 is 0.607, 0.639, 0.969, 0.963, 0.906, 0.855, 0.954, 0.959, 0.964, and 0.945. Also, the AVE for CCU, SC, and SE is 0.633, 0.840, and 0.875. Fortunately, all these values are above 0.5 for the loading factor and AVE. Hence, the convergent validity test is attained. The composite reliability for CCU, SC, and SE for reliability testing is 0.873, 0.969, and 0.973, and the Cronbach Alpha for them is 0.816, 0.969, and 0.971. Because all coefficients are above 0.7, the answers of respondents are reliable. Therefore, the reliability test is achieved.

Besides testing the convergence validity, reflected by the loading factor and AVE, this research checks the discriminant validity of the latent variables: CCU, SC, and SE, where the result is in Table 4.

Table 4. The discriminant validity result.

Construct	CCU	SC	SE
CCU	<i>0.796</i>		
SC	-0.309	<i>0.916</i>	
SE	-0.732	0.537	<i>0.886</i>

The coefficient correlation (CC) between CCU and SC is negative: -0.309, and so is the CC between CCU and SE: -0.732. In this case, this mark can be ignored. Therefore, comparing the absolute values with the AVE square root is essential to prove discriminant validity.

- The AVE square root of CCU of *0.796* is above the absolute CC (ACC) between CCU and SC of 0.309 and the ACC between CCU and SE of 0.732. Since the square root of AVE in italics is greater than these ACCs, discriminant validity is already achievable.
- The AVE square root of SC: *0.916* exceeds the ACC between CCU and SC of 0.309 and the CC between SC and SE: 0.537. Since the square root of AVE in italics is more significant than the ACC and CC, discriminant validity is already attainable.
- The AVE square root of SE: 0.886 is higher than the ACC between CCU and SE of 0.732 and the CC between SC and SE: 0.537. Since the square root of AVE in italics is greater than the ACC and CC, discriminant validity is already reachable.

#### 4.3. The Result of the Modification Index and the Fit Goodness Measurement

Table 5 exhibits some modification indexes (MI) by correlating the errors ( $\delta$ ) of the indicators for SE and SC as exogenous variables graphically on the IBM SPSS AMOS 19. Following these suggested situations, the CMIN declined from 836.589 to 501.919 before and after the activated modification index.

Table 5. Modification index result the first four enormous values.

Suggested correlation between errors			MI	Par change
$\delta_{12}$ of SE1	<-->	$\delta_{13}$ of SE2	97.639	0.994
$\delta_{14}$ of SE3	<-->	$\delta_{15}$ of SE4	45.893	0.102
$\delta_7$ of SC2	<-->	$\delta_9$ of SC4	42.478	0.070
$\delta_8$ of SC3	<-->	$\delta_{10}$ of SC5	33.598	0.083
CMIN before modification index				836.589
CMIN after modification index				501.919

Then, the next step checks the fit, as Table 6 presents. In this table, CMIN/DF displays 2.548, still in the acceptable range from two to five (Ghozali, 2017). Additionally, TLI and CFI are 0.909 and 0.922, exceeding 0.9, as Ghozali (2017) compels. Besides, PGFI, PNFI, and PCGI are 0.560, 0.750, and 0.787, still above 0.5, as Dash and Paul (2021) highlight. Hence, the model is apt for the empirical data.



**Table 6.** The goodness of fit measurement result

Measurement	Result	Acceptable value	Interpretation
CMIN/DF	2.548	Between two and five (Ghozali, 2017)	Model fits data.
TLI	0.909	Above 0.9 (Ghozali, 2017)	Model fits data.
CFI	0.922	Above 0.9 (Ghozali, 2017)	Model fits data.
PGFI	0.560	Above 0.5 (Dash & Paul, 2021)	Model fits data.
PNFI	0.750		
PCFI	0.787		

Table 7 presents the structural equation model estimation based on covariance and the probability (one-tailed) of a critical ratio for the FL, SC, and SE having a negative sign below 5%: 0.000, 0.026, and 0.003: Financial literacy, self-control, and self-esteem negatively influence credit card utilization. Meanwhile, the positive sign of GENDER with a probability (one-tailed) below 5% exists, 0.009: Unlike males, females tend to utilize credit cards. Also, the R-square is near 100%: 0.942: The contribution of FL, SC, SE, and GENDER to explaining credit card utilization is enormous.

**Table 7.** The estimation result of the structural equation model based on covariance.

Structural relationship	Unstandardized coefficient	Standard error	Critical ratio	Probability	
				2-tailed	1-tailed
FL → CCU	-0.583	0.051	-11.442	0.000	0.000
SC → CCU	-0.109	0.056	-1.955	0.051	0.026
SE → CCU	-0.216	0.078	-2.771	0.006	0.003
GENDER → CCU	0.254	0.107	2.378	0.017	0.009
R-square	0.942				

## 5. DISCUSSION

The first hypothesis testing result displays that financial literacy negatively affects credit card utilization: the more literate people are, the less they tend to utilize it. Financial literacy in credit cards informs users not to use credit cards excessively because of the future burden. The non-converting actions reflect this principle because of the whole payment ability (Hussin et al., 2013). The actions of the credit card users in this study are evidence of this situation: Most of them do not convert the transaction amount: 63.33% of 120 people (see Table 8). By doing so, they are not charged the interest on the bill left.

**Table 8.** The respondents with unchanging and changing transactional decisions into an installment.

Description	Total response	Portion
The decision not to change the transaction into an installment	76	63.33%
The decision to change the transaction into an installment	44	36.67%

Source: Primary data processed.

This circumstance happens because the respondents in this research work in the banking industry. Indeed, they deeply understand financial literacy about credit cards, as reflected by their correct answer at the high level above 80%, ranging from 81.67% to 87.5% (see Table 9). With this knowledge, they carefully and responsibly use their cards, reducing their usage. Despite utilizing different respondents, this study aligns with Robb (2011), using 1,354 college students as samples, Hernández-Mejía et al. (2021) with 2,170 Mexicans as samples, and Uddin (2021) utilizing 200 Omanis as samples. These three researchers demonstrate the negative tendency of financial literacy toward credit card utilization. Also, this investigation affirms Chen et al. (2023) displaying the positive and negative effects of financial literacy on upright and unexpected CCUs, respectively, after researching the national financial capability databases in the United States.

Table 9. The correct response to the credit card knowledge questions

Topic	Code	Total respondents	Respondents with the correct response	
			Number	Percentage
Annual percentage rate	APR1	120	100	83.33%
	APR2	120	100	83.33%
	APR3	120	98	81.67%
	APR4	120	101	84.17%
A penalty annual percentage rate	PAPR1	120	102	85.00%
	PAPR2	120	102	85.00%
Yearly fee	YF1	120	104	86.67%
	YF2	120	104	86.67%
Unpunctual fee	UF1	120	104	86.67%
	UF2	120	97	80.83%
The introductory annual percentage rate	IAPR1	120	105	87.50%
	IAPR2	120	98	81.67%

Source Primary data processed.

The second hypothesis testing result demonstrates that self-control negatively affects credit card utilization. This evidence aligns with [Baumeister \(2002\)](#), who declares that individuals with sizable self-control will save more and spend less money. Although using different samples, this study supports [\(Mansfield et al., 2003\)](#) with the behavioral payment of college students in the United States. Students with higher self-control, reflected by their low impulsive spending, tend to pay the bills fully and vice versa. Besides, this study supports [Wang et al. \(2011\)](#), demonstrating the negative propensity of self-control toward revolving credits, and [Limerick & Peltier \(2014\)](#), illustrating the self-control functions necessary to prevent CCU. This negative tendency of SC toward CCU is confirmed by [Perera et al. \(2016\)](#) in the married group of Pakistani executives, as well as [Haryana \(2017\)](#) and [Sandy and Renanita \(2018\)](#) with 96 people and 73 Indonesian career women in Surabaya as the samples, one-to-one. Finally, this study aligns with [Fernández-López et al. \(2023\)](#) investigation of 8,554 Spanish citizens taking cash in advance on credit cards. With strong self-control, they avoid it.

The third hypothesis testing result exhibits that the higher the self-esteem, the lower the tendency to utilize credit cards. This proof confirms [Pinto et al. \(2004\)](#), who declare that individuals with great self-esteem will have stable emotions. Thus, they refuse to overspend when provoked by the lure to buy products using credit cards. Despite the different samples, this investigation confirms the negative propensity of self-esteem on credit card utilization based on the viewpoint of people in China ([Wang et al., 2011](#)), Malaysia ([Omar et al., 2014](#)), and Brazil ([Matos et al., 2019](#)). In other words, [Wang et al. \(2011\)](#), [Omar et al. \(2014\)](#), and [Matos et al. \(2019\)](#) demonstrate that Chinese, Malaysians, and Brazilians with high self-esteem will reduce revolving credit, mistaken credit utilization, and indebtedness, one-to-one.

Females have a positive influence on credit card behavior because they tend to use their cards more frequently than men. According to [Dittmar, Long, and Meek \(2004\)](#), women purchase products online based on their identity and emotions. Their identity makes them want to impress others and gain prestige. In the emotional aspect, shopping online is an enjoyable experience. Hence, this study aligns with [Matos et al. \(2019\)](#), demonstrating females have more indebtedness than males. Related to the disbursement, [Robb \(2011\)](#) suggests the bill payment be above the minimum amount.

## 6. CONCLUSION

The careful application of credit cards is essential for society. As part of society, the employees of banks can be good examples. Hence, this study aims to prove the determinants of credit card utilization based on financial literacy, self-control, and self-esteem as the primary variables and gender as the control. From our research results testing the causal relationship based on the survey from June 2022 to January 2023, the R-squared of this structural equation model based on covariance achieves 94.2%. This value shows an enormous contribution based on the

determinants. Besides, this study infers that employees with high financial literacy, self-control, and self-esteem tend to diminish their credit card use. Meanwhile, gender measured by females as the reference category positively affects this card utilization.

Based on the evidence, women use more credit cards to buy products online to attain their identity and emotional status, compared with men; this study recommends that females immediately convert their transactions into installments to make them pay the bills punctually between maximum and minimum amounts to avoid cash deficiency for living. By conducting it, their credit rating score will not decrease. Also, the marketing staff members of the bank can market the credit cards to their female co-workers in different positions internally or their female friends in other banks that cannot issue these cards.

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**Transparency:** The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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