



**Psychological Factors Influencing Credit Card Usage of Employees in  
Colombo District, Sri Lanka**

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**ABSTRACT**

*Credit card is one of the trending cashless transaction methods used worldwide with the advancement of technology. Records in Central Bank of Sri Lanka (CBSL) show the demand and the number of credit cards issued are increasing day by day due to different reasons. Researchers have revealed that different demographic, socio-economic and credit card attributes were reasons for use of credit cards among different types of credit card holders. But the influence of psychological factors is also a subject of considerable research. Therefore, the objective of this research is to identify the influential psychological factors on credit card usage of employees in the Colombo district. With the aid of different sampling techniques where necessary, 385 respondents were selected for the sample. Required data were collected through a structured questionnaire and psychological variables were measured by ten-point Likert Scale Statements. Multiple linear regression analysis was carried out with the aid of Minitab 20. Results of the study revealed that the perceived financial cost, user pattern, social status and attitudes are highly influential psychological factors while convenience and financial optimism have not significantly influenced the credit card usage of employees in the Colombo district. Future research is suggested to identify the influence of similar factors for other districts and commercial banks separately, and apply advanced analysis to identify the latent factors that affect credit card usage of employees in the Colombo district.*

## **1. Introduction**

Due to the diversification of human needs and wants, the ancient self-sufficient economy was reshaped. Individual needs eventually increased as a result of the development of human social existence. With the advancement of technology in different eras, human behavior was also adapted to new interventions. As a result, people tend to use cashless transactions via e-money (Kerr, 2006). By 21<sup>st</sup> century, the rapid development of technology influenced the money and banking system. In the competitive business world, banking service is one of the most significant supporting services. Banks use different kinds of strategies to be the best banker in the banking industry. Implementing the technology improvements into the bank transactions is a main strategy used in most recent years. For customers as well as for businesses, cashless transactions are one of the benefits of technology improvements.

According to the Central Bank of Sri Lanka (CBSL) payment cards based on the magnetic stripe technology were first developed in 1969 at the IBM Information Records Division (IRD) in Dayton, United States of America in 1970, and in 1989 February commercial banks commenced issuing credit cards in Sri Lanka (CBSL, 2014). Even though magnetic stripe technology was developed in 1989, the credit card concept is very old. The first credit card was issued by the General Petroleum Company of America, which later became Mobile Oil Company, in the United State of America in 1914 (Ahmad, 1998).

CBSL recorded at the end of the third quarter of 2012 that there were 12 licensed service providers engaged in credit card issuing (CBSL, 2012). By the second quarter of 2021 there were 14 licensed commercial banks and three finance companies engaged in credit card issuing (CBSL, 2021). As per the regulations, service providers of payment cards include issuers of payment cards and financial acquirers of payment cards. There

are four types of payment cards issued by licensed services providers namely; debit cards, credit cards, charge cards and stored value cards (CBSL, 2018). Among these types of payment cards, bank credit cards are one of the most prevalent financial instruments in today's competitive world.

Simply a credit card is a cashless payment system used in day-to-day transactions and also it allows the cardholder to obtain funds, at an interest from a licensed service provider at cardholders' own prudence up to the credit limit. The Cambridge Dictionary defined credit card in Business English perspective as 'a small plastic card that can be used to buy goods or services and then pay for them at a later time' ('Credit Card', 2002). Licensed service providers issue credit cards under rules and regulations. Employees are one of the target groups of credit card service providers. An employee is the person who has a contract to carry out work for an employer and receives compensation in the form of wages, salaries, fees, gratuities, piecework pay or remuneration in kind (Kasuso, 2015; State Human Resources, 2017).

Development of technology and consumers' compulsive buying behavior have contributed to the use of credit cards. According to World Bank data, Canada has the highest number of credit card users. It has been indicated that by 2017 on average, 82.58% of age 15 and above people have used credit cards. In Sri Lanka it was 3.75% in 2014 and 5.34% in 2017 (TheGlobalEconomy.Com', 2017).

As per the recordings of CBSL quarterly Payment Bulletin report, by the end of June 2021, total number of credits cards in use reached up to 2,045,716. Within the last 11 years the total number of credit cards in use has been increased by 1,166,925. As well as the total number of issued credit cards from July 2012 to June 2021 is around 2,247,002 (CBSL, 2021).

Credit cards are an internationally recognized payment instrument. So, customers tend to use credit cards due to different reasons. Necessity of excess money, convenience, interest rate, quality customer service, safety, credit limit, level of income, number of dependents in a family, occupation, availability of information, flexibility of use, family status, development of technology, lack of necessity to keep cash in hand, effect of peer groups, exposure to advertisements, customers debt behavior, knowledge about competitive credit card system, impact of supplementary cards, living area such as urban, sub urban or estate are some of the factors which affect the use of a credit card. Eligibility, features of credit cards, credit limits and tariff, interest calculations and modes of credit card payments are slightly different from the service providers to service providers. These also differ along card type and card category. VISA, Masters and American Express are the most commonly issued credit card types in Sri Lanka while Infinity, Titanium, Signature, Platinum, Gold and Classic are the mostly issued credit card categories in Sri Lankan context. All the service providers enjoy discounts at supermarkets, hotels and restaurants, fuel stations, clothing outlets, hospitals and many more merchandisers in both locally and internationally ('Celebrate with Jaffna | Credit Cards Offers - HSBC LK', n.d.; 'Credit Card Offers - Sampath Bank PLC', n.d.). Credit cards are becoming popular as they function for multi-purpose of customer requirements and also the different kinds of discounts. Therefore, licensed service providers tend to supply their credit card facilities to people who earn a permanent monthly income (Kumar, 2013).

Credit card users can be divided into two categories, namely convenience users and revolvers (Perera, Dayanga, & Jayasuriya, 2016). Convenience users use a credit card to purchase simply and for ease of use and the safety while revolvers use credit card as a financial loan facility mainly for the credit benefit rather than convenience (Zainudin,

Mahdzan, & Yeap, 2019). Therefore, credit cards can be used for various reasons i.e., cash payments, obtain credit facility, cash advance, easy payments and prestige. Personal financing is very critical in the financial sector and it has a massive impact on the country's economy (Warnakulasuriya, 2016). As per the results of previous researches, different factors have influenced different groups of credit card users. Gender, age, race and education level were significant demographic factors in the ownership or usage of the credit card of executives in the Colombo metropolitan area (Perera et al., 2016). According to Hussin et al., (2013) customers of different occupations differ in their credit card usage in terms of having the card available in assisting purchase at the point of sales while gender is not significant between male and female customers with regard to credit card ownership in Malaysian credit card users. Indian young generations use credit cards related to a "lifestyle" and that enables them to improve "sense of fulfillment". Sense of fulfillment and sense of belonging attributes are moderate for the age, gender and credit card factors (Khare, Khare, & Singh, 2012). Furthermore, Malaysian customers with different monthly gross income differ in their credit card usage in terms of payment preference and frequency of credit use (Hussin et al., 2013).

Sangsutiseree & Lown, (1994) revealed that in Thailand only income and occupation were statistically related to credit card use. In 2012, Yayar & Karaca revealed both employed and not employed wives possibly use owners' credit card. But credit card consumption is less by wives who are not employed than wives who are employed. Number of family members with an income and usefulness of a credit card is positively related with the credit card ownership possibility while on-time payment of credit card debts relates negatively.

Not only due to demographic, socio-economic factors, but also people tend to use credit cards as a reflection of situation, reflection of

the person, cognitive process and social practice (Kamleitner, Hoelzl, & Kirchler, 2012). Therefore, in the modern world, credit card is used as the recognized and well reputed mode of using credit. To maintain and reflect their social status, people feel free to use credit cards. When individuals are using credit cards, they are concerned about the amount that they have incurred as financial costs which is known as perceived financial cost (Nguyen & Cassidy, 2018). Moreover, individuals are willing to minimize the risk and maximize the return when using credit cards (Hershey & Mowen, 2000). According to Aydin, optimism which is defined as having an optimistic expectation about future events, is a psychological drive of individuals' demand for credit. Furthermore, it has been discovered that people with a high level of unrealistic optimism are more likely to use credit cards with interest rates they cannot afford. (Aydin, 2022). Attitude refers to set of emotions, beliefs and behaviors towards a particular object, person, thing or event. In the view of behavioral component, attitude influences individuals' behavior. Therefore, individuals' attitude also influences the usage of credit card (Cherry, 2018; Ramayah et al., 2002; Wickramasinghe & Gurugamage, 2009). Moreover, Ahmed et al., in 2010 reveal that only the dimension of life style appeared to influence attitude while other factors like self-esteem, time consciousness, peer group pressure, exposure to advertisement and gregariousness did not. And also, the behavior is not significantly associated with attitude. This research found that self-esteem did not have any impact on the formation of attitude. Users need credit cards for their convenience. Therefore, there was no significant impact of attitude on credit card debts. Time consciousness, financial optimism, immediate gratification, price consciousness, social mobility, being venturesome, self-confidence, contemporary state of mind and gregariousness were considered psychological variables. Among these variables, a few were positively

associated with the level of credit card usage (Ahmad, 1998).

Mathews & Slocum, in 1969 examined the effect of social class membership on the use of credit card. This research reveals that the members of different social classes exhibit different credit card user patterns. It means members in lower social classes tend to use their credit cards for installment purposes while the upper classes use credit cards for convenience. The differences reflect respective social class values, which can be used as a basis for marketing credit service (Mathews & Slocum, 1969). Considering the Indian context, customer user pattern was a major determinant while convenience is also being a determinant of credit card usage. Most Indians are not using credit cards regularly. It is due to lack of trust in using credit cards. Even if there is lack of trust among Indian credit card consumers, service providers can increase the adoption of credit card usage by focusing on user-related convenience. Finally, user pattern and convenience have emerged as the main predictor of credit card usage in Indian customers (Khare et al., 2012).

Among different types of factors revealed in literature, the researcher identified user pattern, convenience, social status, attitude, financial optimism and perceived financial cost as the psychological factors which influence credit card usage. However, after reviewing the literature, researcher identified that a considerable number of studies have used multiple regression analysis to identify the influential factors on credit card usage among different users (Ahmad, 1998; Ahmed et al., 2010; Ali, Raza, & Puah, 2017; Ishara & Karunarathne, 2016; Madhushani, Himali, & Rizvi, 2018; Perera, Samarakoon, & Adikaram, 2018; Wickramasinghe & Gurugamage, 2009). When the dependent variable is dichotomous (Kuruppuge, Gamage, & Nedelea, 2017) it has been suggested to apply binary logistic regression (Kuruppuge et al., 2017).

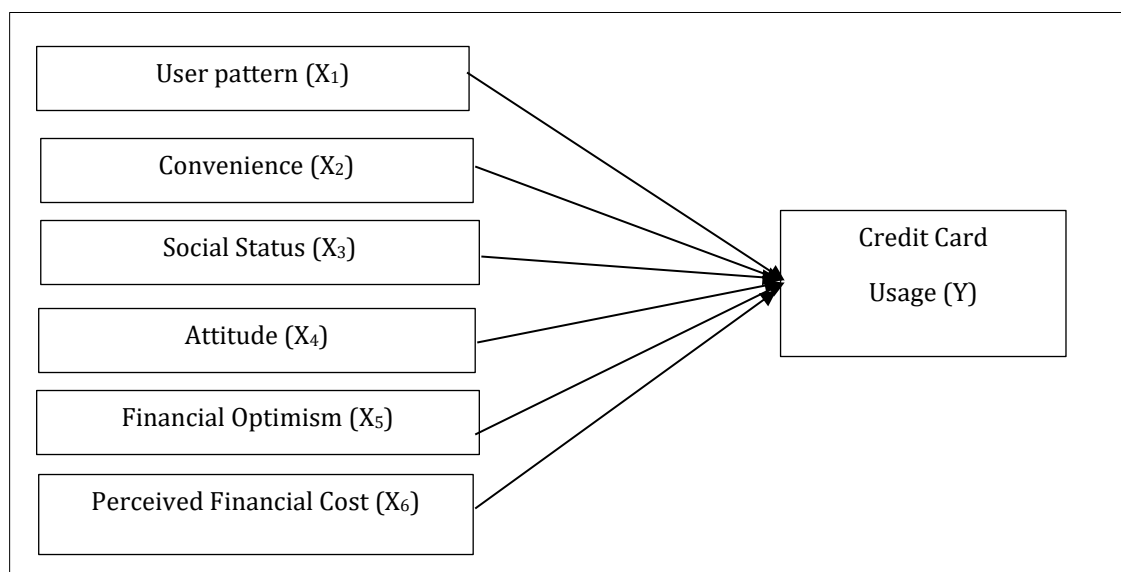
Most researchers have revealed the impact of demographic, socio-economic and different credit card attributes on the usage of credit cards in different groups. The influence of the psychological factors on the credit card usage of employees is a subject of much research. According to 2012 Population and Housing census report, the highest number of population of 2,324,349 (Department of Census and Statistic, 2015) belong to Colombo district and it is the commercial hub of Sri Lanka and also the highest number of branches of credit card service providers are located in Colombo district. Employees are the group of individuals who earn monthly permanent income. Accordingly, this study focused on the research question; what are the influential psychological factors on credit

card usage of employees? In order to inspect this research question, this study attempted to identify the influential psychological factors on credit card usage of employees in the Colombo district.

## 2. Materials and Methods

### 2.1 Conceptual Framework and Operationalization

In order to determine the factors influencing credit card usage of employees, based on the referred literature, researcher developed the conceptual framework to represent the relationship among the variables in a methodological approach.



**Figure 1.** Conceptual Framework

According to Figure 1, the dependent variable of the study was credit card usage while user patterns, convenience, social status, attitude, financial optimism and perceived financial cost were the independent variables of this study. The influence of above selected factors on the credit card usage is at different levels. Accordingly, the researcher measured the levels by using 10-point Likert Scale Statements indicating strongly agree (10),

highly agree (9), mostly agree (8), somewhat agree (7), agree (6), disagree (5), somewhat disagree (4), mostly disagree (3), highly disagree (2) and strongly disagree (1). Moreover, credit card usage, which is the dependent variable of this study was also measured by using average monthly expenses done through credit card. Operationalization of the research variables is shown in Table 1.

Following hypotheses were tested in this study.

H<sub>1</sub>: "Psychological factors influence the credit card usage of employees"

H<sub>0</sub>: "Psychological factors do not influence the credit card usage of employees "

**Table 1.** Operationalization of Research Variables

Type	Variables	Items	Reference
Dependent variable	Credit card usage	Monthly credit card expenses	Ahmad (1998), Sangsutiseree & Lown, (1994)
Independent Variables	User pattern	Use credit card regularly	Khare et al. (2012)
		Covers emergency needs	
		Purchasing places changing	
		Spend beyond income	
		Prefer to make payment through cash	
		Minimizing credit card usage.	
		Applying for a new credit card	
	Convenience	Use a credit card any place, any time	Khare et al. (2012) Ahmad, (1998) Wickramasinghe & Gurugamage, (2012)
		More advantages with credit card payments, than cash	
		More convenient rather than cash	
		Do not have to worry about taking too much cash	
		Necessary to have a credit card when travel overseas	
		Advantage in mail order shopping	
		Safer to use credit cards payment compared to cash	
	Social Status	Difficulties frequently when use credit cards	Khare et al. (2012)
		Makes them feel fashionable	
		feel important and wealthy	
		Peers think using credit card is good idea	
		Increases job performance	
	Attitude	Family members influence	Wickramasinghe & Gurugamage, (2012) Ramayah et al. (2002)
		Should use a credit card	
		Can obtain incentives offered on credit cards	
		Colleagues and friends use credit cards	
		Acceptable payment system policies	
holding a credit card added value, quality, social status			
Financial optimism	Using a credit card helps to save time	(Zainudin et al., 2019)	
	Currently managing my credit card debt well		
	Spending money responsibly		
	Consider my monthly income when using credit card		
		Successful in living within own budget	

		Aware to reduce credit card debt	(Nguyen & Cassidy, 2018) (Ali et al., 2017)
		Personally responsible for credit card debt	
	Perceived financial cost	Reasonable fees and charges	
		Low interest rate	
		Cost of using a credit card is lower than using other payment channels	
		Not a cost burden	
		Easily can find information	
		Able to enhance social activities	
		Helps to avoid financial difficulties	

## 2.2 Population, Sample and Sampling

Credit card users in Sri Lanka are the population that the complete set of all possible observations of the type which is to be investigated while credit card users in Colombo district is the target population of this research. Employees who use credit cards in Colombo district were the sample in this survey, which is the smaller representation of the larger whole. The Colombo district geographical map is the sampling frame of this study.

Population size is more than 1,000,000, according to the Krejcie & Morgan Table, the sample size was 384 units (Bukhari, 2021). Simple random sampling, stratified sampling, cluster sampling and convenience sampling were used to select the sample units. With the aid of simple random sampling, five divisional secretariats (DS) were selected among the 13 DSs in Colombo district. Colombo DS, Homagama DS, Kesbawa DS, Maharagama DS and Timbirigasyaya DS were the selected DSs. Based on the proportionate allocation under stratified random sampling method considering DSs as strata, the sufficient number of Grama Niladari Divisions (GND) were selected from DSs. Above selected five DSs have all together 259 GNDs and assuming all the GNDs are heterogeneous, out of 259, 26 GNDs were selected which is a 10% representation of the sampled population in the study. Next the GNDs were considered as clusters, and the author selected sampling units applying multistage cluster sampling method. After that, data were collected using

convenience sampling from 384 employees who are in GNDs.

## 2.3 Data Collection and Data Analysis

In order to collect the correct and accurate data, structured questionnaire was used as the main research instrument which is relevant to self-enumeration method. While the questionnaire was the primary data source, quarterly payments bulletin published by CBSL, annual reports, official website and leaflets distributed by license service providers, official website of Colombo district secretariat division, Sri Lanka labor force survey report, Census of Population and Housing 2012 final report published by the Department of Census and Statistics, and journal articles, were the secondary data sources.

The self-administrated questionnaire consisted of ten-point Likert scale statements to measure the variables which are credit card usage, user patterns, convenience, social status, attitude, financial optimism and perceived financial cost. This Likert scale statements were adopted and adapted from existing literature and few self-developed statements related to Sri Lankan context. The researcher constructed seven composite indices to measure the dependent and independent variables. A widely used method in composite index constructions, Principle Component Analysis (PCA) method was applied to construct composite indicators from a large set of sub-indicators on the basis of correlation among the sub-indicators

(Johnson & Wichern, 2007). SPSS-26 statistical software was used to compute composite indices using PCA method. Regression analysis is a technique for investigating and modeling the relationship between response or dependent variable and explanatory or independent variables.

Therefore, to attain the research objective, a multiple regression analysis was carried out with the aid of Minitab-20 analytical software.

### 3. Results and Discussion

**Table 2.** Results of Analysis of Variance

Source	df	Adj SS	Adj MS	F-Value	P-Value
Regression	6	547.36	91.227	10.22	0.000
Error	307	2740.33	8.926		
Total	313	3287.69			

**Table 3.** Results of Regression Coefficients

Term	Coefficient	SE of Coefficient	t-statistic	P-Value	VIF
Constant	6.317	0.830	7.61	0.000	
User pattern ( $\beta_1$ )	0.043	0.0103	4.17	0.000	1.30
Convenience ( $\beta_2$ )	0.002	0.00768	0.19	0.849	1.35
Social Status ( $\beta_3$ )	-0.019	0.00818	-2.32	0.021	2.54
Attitude ( $\beta_4$ )	0.036	0.00998	3.59	0.000	2.18
Financial optimism ( $\beta_5$ )	0.014	0.0105	1.36	0.176	1.36
Perceived financial cost ( $\beta_6$ )	0.023	0.0112	2.08	0.038	1.39

Table 2 shows the overall model significance. Since, F-statistic is significant ( $F = 10.22 / P = 0.000$ ) that the fitted model is significant. Thus, it implies at least one independent variable has significantly affected credit card usage of employees in the Colombo district.

According to the Table 3 results of regression coefficients user pattern ( $\beta_1 = 0.043 / P = 0.000$ ), social status

In order to fulfill the requirement of identifying most significant psychological factors which influence credit card usage among employees in Colombo district, the researcher carried out regression analysis.

User pattern ( $X_1$ ), convenience ( $X_2$ ), social status ( $X_3$ ), attitude ( $X_4$ ), financial optimism ( $X_5$ ) and perceived financial cost ( $X_6$ ) were the independent or explanatory variables while credit card usage ( $Y$ ) is the dependent or response variable of the study. The results of the regression analysis are as follows.

( $\beta_3 = -0.019 / P = 0.021$ ), attitude ( $\beta_4 = 0.036 / P = 0.000$ ) and perceived financial cost ( $\beta_6 = 0.023 / P = 0.038$ ) are significant. But convenience ( $\beta_2 = 0.002 / P = 0.849$ ) and financial optimism ( $\beta_5 = 0.014 / P = 0.176$ ) are not significant. It implies that user pattern, attitude and perceived financial cost are the significant and positively influential factors on credit card usage while social status is significantly and negatively influential factors.



**Table 4.** Model Summary

S	R-squared	Adj. R-squared
2.98766	0.1665	0.1502

Furthermore, it reflects when user pattern, attitude and perceived financial cost are increasing the credit card usage also increase. But when social status is increasing then credit card usage is decrease.

Convenience and financial optimism are not significantly influential factors on credit card usage of employees in the Colombo district.

Table 4 shows the model summary of the regression analysis. To test the goodness-of-fit of the fitted regression model, coefficient of determination ( $R^2$ ) can be used. Since the model is a multiple linear regression model, Adjusted coefficient of determination ( $Adj R^2$ ) is considered.

Adjusted  $R^2$  value 0.1502 implies that the 15.02% of variance in credit card usage is predicted by the considered psychological variables. In order to verify the assumptions regarding the multiple linear regression analysis, residual analysis has been performed. Results of residual analysis are as follows.

**Table 5.** Results of Residual Analysis

Test	Test Statistic	P-value
Normality test (Anderson Darling)	AD=0.5157	0.1681
Durbin-Watson Statistic	DW=1.6586	-
Mean value of residuals	Mean = 0	-

Normality of residuals is shown in Figure 2. As Figure 2 shows, data points are near the line showing the normality of residuals.

Furthermore, according to Table 5, normality of the residuals is verified by the significance of Anderson Darling test ( $AD = 0.5157 / P = 0.1681$ ).

Data points on Figure 3 appear to be randomly scattered around zero residual line. The vertical width of the scatter does not appear to increase or decrease across the fitted values; therefore, it can be assumed that the variance of the residuals is constant and it shows that there is a linear relationship between the response variable and predictor variables.

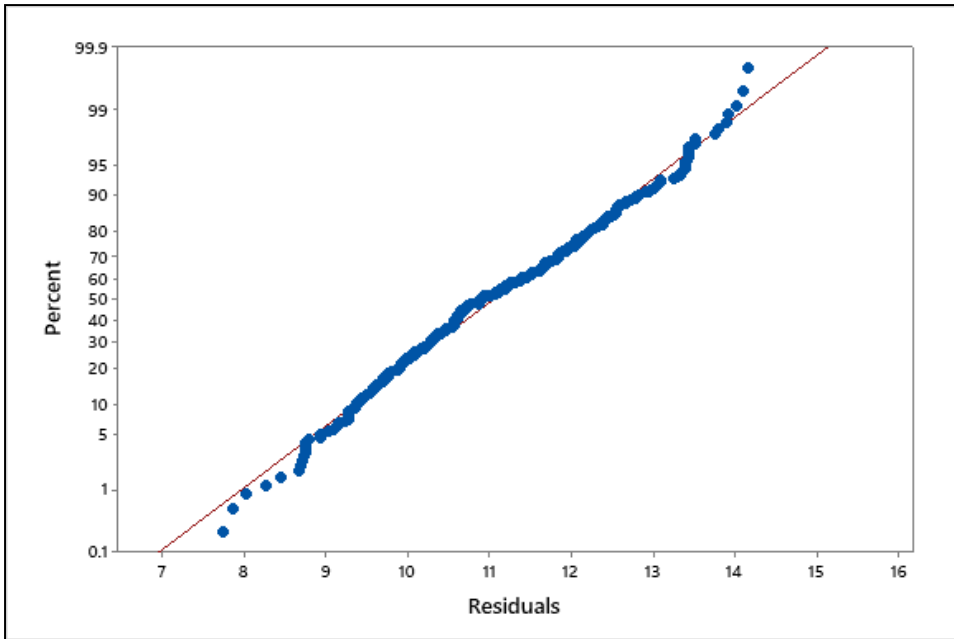
According to Table 5, the Durbin-Watson test statistic (1.6586) is lying between 1.5 and 2.5 value range and Figure 4 residual vs order

plot shows the residuals bounce randomly around the zero- residual line implying that there is no autocorrelation or no serial correlation in the residual terms.

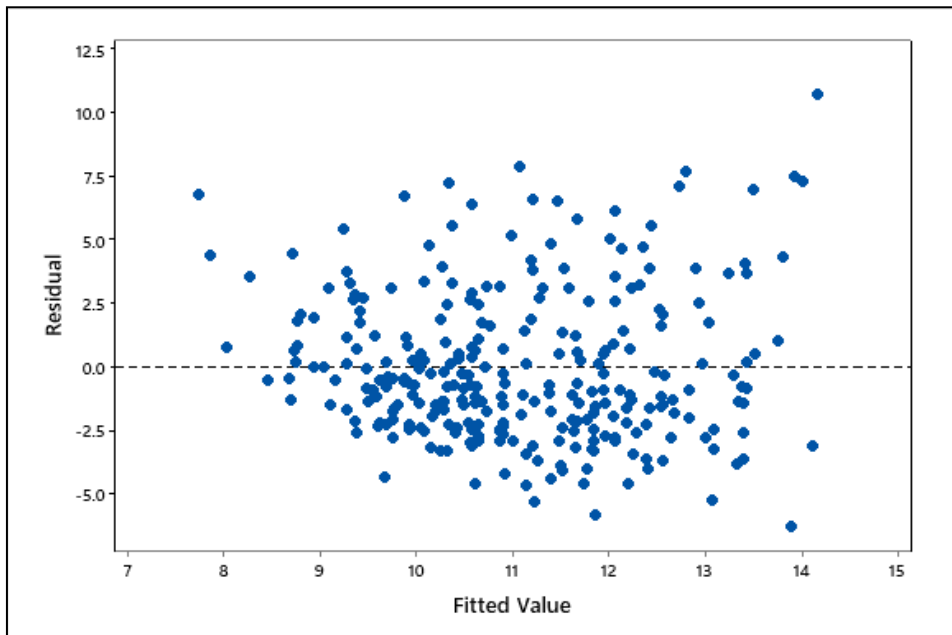
It satisfied the assumption that the residuals are independent of each other.

According to Table 3, the VIF value of the all the independent variables is less than 5. It can be concluded that there is no impact of multicollinearity in the constructed regression model of the credit card usage of employees in Colombo district.

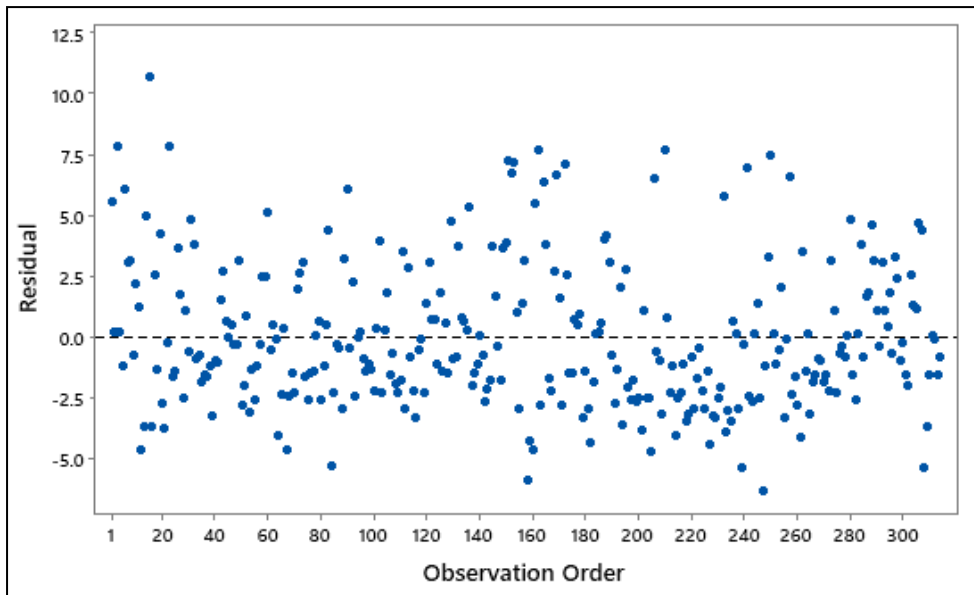
With the changes happened in Sri Lankan culture and improvement of living standard, user patterns have changed in accordance with their lifestyle and satisfaction. Therefore, by 2021, user patterns and social status had become an influential psychological factor on credit card usage among employees.



**Figure 2.** Normal probability plot of residuals



**Figure 3.** Residual vs Fitted value plot



**Figure 4.** Residuals vs. Order Plot

Though Ahmad (1998) revealed that the financial optimism is associated with the level of credit card usage of Malaysian, Chinese and Indian consumers, it is not an influential factor by 2021 for Sri Lankan credit card users.

If convenience is one of the significant factors in previous studies, in the context of Sri Lankan employees it is not a significantly influencing factor. The sample of this study was a group of people who work with a stressful time schedule. Respondents commented “though they applied for credit card for convenience, if they were not able to do one payment installment, there were additional interest and late payments added by the service providers. It would be an unexpected burden for them” and if they make the payment for electronic devices, mobile phones, and large-scale retail shops in Pettah, merchandisers add 3%-5% additional payment from their invoice. By 2021, due to the Covid-19 pandemic, the use of face-to-face cash transaction methods shifted to the online platform, and the credit card users have been doing their transactions with lack of trust. Credit card users were at risk of re-

payment of their debt with the unexpected economic barriers (Horvath, Kay, & Wix, 2021). Therefore, they feel in some situations credit cards are not convenient. Khare et al., (2012) also examines the impact of convenience which affects credit card usage in Indian customers and results show that there is a lack of trust regarding the credit card use among Indian customers. But in another aspect, some credit card users were recommended to use a credit card because credit card holders can pay future cash flow at present. However, credit card holders should be knowledgeable to manage their financial status.

Results of this study will be helpful for stakeholders such as credit card service providers, credit card holders, merchandisers, government and future researchers. Financial institutes that are willing to be authorized in credit card issuing are able to identify how customers behave in their finance optimization. Credit card service providers can identify how credit card usage changes according to customers’ user pattern and social status. Government policy makers can get an idea about how customers are

sensitive to the interest rates and how it impacts the usage of credit card and money circulation. Finally, this research fulfilled the existing gap while identifying a new research gap and provided literature for future researchers.

#### 4. Conclusion and Recommendation

It can be concluded that the user pattern, attitude and perceived finance cost are psychological factors that positively influenced and social status is the negatively influencing factor on the credit card usage of employees in the Colombo district. Moreover, convenience and financial optimism have not significantly influenced the credit card usage of employees. Finally, since the assumptions of multiple linear regression analysis are satisfied, it can be concluded that the fitted model is the best to measure the credit card usage of employees in Colombo district. The fitted model can be expressed as follows;

Credit card usage = 6.317 + 0.043 User pattern - 0.019 Social status + 0.036 Attitude + 0.023 PFC

Researcher recommends to the future researchers, to test the similar factors which are used in this study with respect to other districts in Sri Lanka separately. It will reveal more results for stakeholders. New researchers can apply advance analysis to identify the latent psychological factors which affect the credit card customers.

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