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What Influences Kathmandu Valley Users' Attitudes Toward Plastic Money: Evidence from an Ordered Logistic Model

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Abstract

The use of plastic money has grown over time. Previously availed by a few, the use of plastic money amongst people with bank accounts has surged tremendously. In 2020, it was discovered that over 78 lakh individuals in Nepal utilized plastic money. This study aims to analyse determining factors that affect users' attitude toward plastic money in Kathmandu valley. The Kathmandu valley was chosen as the study location because people from many workgroups and locations travel here in quest of varied opportunities, resulting in a diverse range of viewpoints. Both primary and secondary data were used for gathering relevant information. Questionnaire of structured type was developed to gather the response from 404 respondents and convenient sampling method was employed for the selection of respondents. The data collected was analysed using ordered logistic regression. Findings from the study indicated that 95.79% respondents have knowledge regarding plastic money and users carry a positive attitude towards use of plastic money. However, if banks would enhance their ATM services, then respondents are more likely to use plastic money. This study thus concludes that though awareness about plastic money is gender neutral, however, males prefer to use plastic money more than female. Hence, the convenience, security and incentives brought in by cards over scores cash usage.

Keywords: *Plastic Money, Debit Card, Credit Card, Attitude, Ordered Logistic Regression*

1. Introduction

In contrast to cash or regular money, plastic money is an option. Plastic cash is a word that relates to a variety of bank cards that are now in use (Singh, 2017; Raviprolu, 2017). The history of plastic money is dated back to the 1920s, when the first card swiper was issued in the United States (Evans & Schmalensee, 2004). Diners Club and American Express introduced the world's inaugural plastic card in the United States in 1950. Plastic cards usage was limited until after 1970s, when specific magnetic strip gauges were established. Plastic cards became quite common in the late 1990s, and by 2001, plastic currency had become a standard form of 'ready money'. Plastic card are increasingly being used by consumers (Worthington, 1996).Chris Rice (1997) argues that customers buy items or services for their own use, for the benefit of their families or other non-commercial interests. Money is the medium of such buying throughout the world, however, access of plastic money and electronic exchanges were earlier restricted to high net worth individuals (Larkotey et al., 2012). With the assistance of new technologies, the banking system is consistently getting stronger than ever. Furthermore, countries are increasingly

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accepting the concept of plastic money, which has resulted in a slew of concerns in the minds of customers regarding the authenticity of certain transactions (Jain, 2016). Today, even the fixed income earners are utilizing the plastic money (Singh, 2017). Considering their demand, cards as a novel financial innovation, have provided a sheltered and secured means to purchase services and goods. Access to internet has added to the force of consumerism.

Plastic money is a generic term for a widely available types of bank cards, debit and credit cards. With options like cash-back offers, subsidized plans and distinctive customized services, banks entice people to use their cards more frequently. Debit cards grant people the convenience without the pressure of an unpaid obligation. The convenience, security and incentives provided by the cards limits cash usage on a regular basis. Growth of technological advancements and innovations in financial system has been unprecedented. Concerns amongst the consumers are equally relevant. Risk of carrying large sum of cash gets replaced by a plastic card, which if stolen or lost can be blocked to avoid misuse (Raviprolu, 2017). Although customers deploy different payment strategies based upon the location and type of services pursued (Ching & Hayashi, 2010), the decision to pay is also dependent upon the incentives provided the banks on usage of these cards (Singh, 2017). With an estimated bank customers of around 29,269,631 (Nepal Rastra Bank, 2022), the use of plastic money is significantly on the rise, further accelerated duringCOVID-19 pandemic.

At country level, the expansion of the Nepalese banking sector has drastically affected people's preferred mode to payment (Shrestha et al., 2020). Reliance on hard cash has been short-lived and soon replaced by plastic money. Nowadays, debit and credit card are added frills once a new bank account is opened. Processing time for providing new card is around a week inside Kathmandu valley and around 15 – 30 days for customers opening accounts outside the valley. In terms of access and acceptability, card is readily recognized for transactions outside the valley or country (especially in India) leading to increased trust among the card holders and merchants. Today, most of the cards in Nepal are accepted in ATMs across Nepal and India (Republica, 2019). Growing percentage of Nepalese believe the usage of plastic money and the convenience associated therein. According to Nepal Rastra Bank (2020), there were 7,669,827 debit cards in circulation by mid-December, with 7,379,610 belonging to grade 'A' banks, 251,848 to grade 'B' banks, and 38,369 to grade 'C' banks wherein grade ‘A’ refers to the Commercial Banks, grade ‘B’ refers to the Development Banks, and grade ‘C’ refers to the Finance Companies (Paudel et al., 2018). Devkota et al. (2021) found that many people still do not own a bank account, and those with an account and plastic card lack the basic understanding of how to use it. In other instances, people utilize cards to make payments outside of Nepal, but they restrict the usage within the country. Hence, a proper analysis is required to explore the various gaps that exist amongst consumers and card usage in Nepalese context. This study aims to measure users’ attitude and perception towards plastic money. This study can serve as empirical evidence for concerned policy makers as proper study on this topic in Nepal is still lacking.

Dearth of literature exist in terms of explaining the factors determining the use of plastic money and how consumers place their decision on choosing between cash or card utilization. In this study, we pose research questions pertaining to plastic money use, attitudes toward plastic money and credit practices, problems obtaining or using plastic money, and household financial along with ascertaining demographic characteristics of respondents as standard. Questions analyse the perception of users of these financial

products, challenges faced while transacting through novel methods such as cards and relevance of cash/cards within purchase decisions. Therefore, vitality of this study is all the more important in the context of Nepalese commercial banks which face the surge in adoption of financial products and services. This study tries to analyse the attitude of users on plastic money and their satisfaction on service level, a first in the Nepalese context. This study provides path for developing variables for future research in this area.

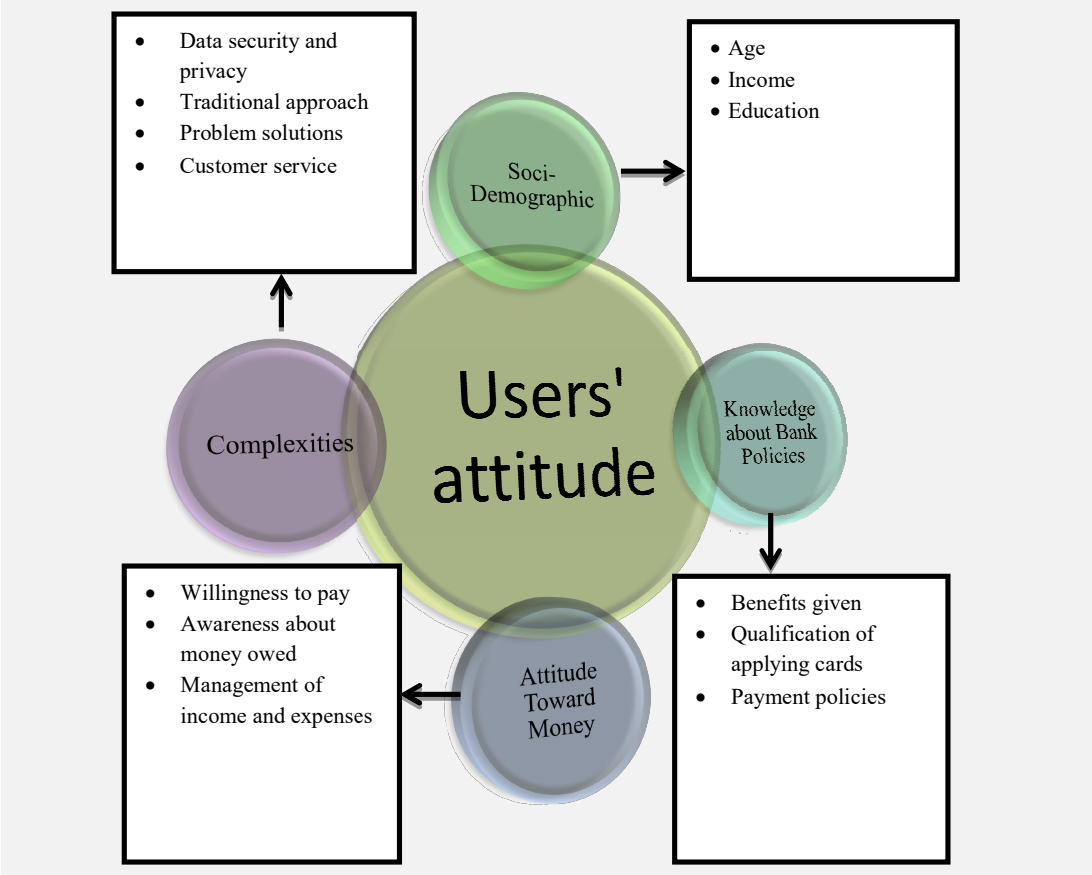
The second section of this study discusses research methodology, followed by the outcomes in the third section. Relevant discussion is extended in the fourth section followed by conclusion and policy prescriptions.

2. Research Methodology and Data Description

2.1 Conceptual Framework

This study is undertaken to ascertain the behavioural aspects of card usage amongst Nepalese customers and their attitudes towards plastic money. In this light, discussion of studies related to customer attitudes such as Social Judgement Theory or SJT (Siero & Doosje, 1993). Theory of Reasoned Action or TRA (Ajzen & Fishbein, 1988), Theory of Planned Behavior or TPA (Ajzen, 1991) is pre-emptive. Attitude change is the basic target of powerful correspondence. Social Judgement Theory tries to explain the conditions under which such changes occur and anticipates the degree of the disposition in change, while endeavouring to clarify how likely an individual's sentiment may alter. What is equally likely is the emergence of resistance to such change, which is also captured. Whether or not an individual behaves in a certain manner is the outcome of his/her intent to behave in certain manner, a realm of the Theory of Reasoned Action. Intention, further, is an element of two factors: the person's attitude toward the behaviour, and the person's view of general social standards in regards to the behaviour. An extension of this is the Icek Ajzen's Theory of Planned Behaviour, which seems to be a best fit for this study. It emphasises the role of individual's priorities, attitudes, controlled beliefs and perceived behaviour in making decisions. Since card-usage as an attitude has multi-dimensional elements, we use this holistic approach in our research to study the behaviour and attitude of people towards plastic money. In our study users' attitude is the dependent variable followed by socio-demographic factors, knowledge of bank policies, approach towards plastic money, and complexity factors are independent variables. The conceptual framework for this study is therefore presented in Figure 1.

Figure 1: Conceptual Framework



Sources: Modified from *Blankson et al. (2012); Ismail et al. (2014) ;Boden, Maier, & Wilken, (2020) ;Qureshi et al., (2018)*

2.2 The Model

The theory of planned behaviour is a theory used to comprehend and foresee behaviours controlled by conduct of expectations and specific situations. Behavioural intentions are dictated by a mix of three elements: attitudes toward the behaviour, subjective norms, and perceived behavioural control. An extension of the theory of reasoned action (Ajzen, 1991), TPA is general model to anticipate and clarify behaviour over a wide range of behaviours. A key suspicion in the TRA is that behaviours are under one's volitional control. The theory presumes that individuals' behaviours are not negligent, as they consider the ramifications of their activities before, they choose to connect with or not take part in a given behaviour. While clarifying the TRA, it is valuable to start at the ultimate result (Ajzen, 1991). Our investigation is to think about the users' attitude toward behaviour.

Most contemporary social analysts take a psychological or data-preparing way to deal with attitude formation. This methodology is exemplified using expectancy-value model of attitudes (Ajzen, 1991). As indicated by this model, attitudes grow sensibly from the convictions individuals hold about the object of the attitude. Belief and evaluation scales ought to be scored (Schwartz & Tessler, 1972). A moderately simple solution for this issue was proposed by Holbrook (1977) in the expectancy- value model shown as

$A \propto \sum_{i=1}^{n}(b_i + B)\ (e_i + E)$ …….. (1)

when expanded, this becomes

$A \propto \sum b_i e_i + B \sum e_i + E \sum b_i + \ BE$ …… (2)

and, disregarding the constant B & E, we can write

$A \propto \sum b_i e_i + B \sum e_i + E \sum b_i$ …….. (3)

To estimate the resealing parameters B and E, we relapse the standard attitude measure, which fills in as the rule, on $\sum b_i e_i$,$\sum b_i$, and $\sum e_i$, and afterward isolate the unstandardized regression coefficients of $\sum b_i$ and $\sum e_i$, by the coefficient obtained for $\sum b_i e_i$.

2.3 Estimating Attitude

Attitude is coordinated toward the behaviour – not the item connected with behaviour. When estimating one's attitude toward behaviour, the attitude measure must be confined at the level of the behaviour so as to augment the expectation exactness of the attitude on goal. Attitude toward behaviour can be estimated through customary attitude scales (Holmes, 1942). Attitudes toward behaviour are frequently surveyed by estimating one's social convictions, as the TRA proposes that one's attitude toward behaviour is an element of one's convictions about the behaviour. Attitudes toward behaviour are a total of the convictions that the behaviour prompts towards certain results and the assessments of those results (Kan et al., 2017). Subsequently, an attitude towards behaviour is an element of the degree to which every result is seen as positive or negative and the probability that every result is viewed because of the behaviour. Incredibly positive attitude arises when every result is seen as amazingly positive and very likely. Moreover, negative attitudes result from sets of convictions viewing results that are viewed as incredibly negative and amazingly likely (Ajzen, 1991).

Specifically, the outcome's subjective value contributes to the attitude in direct proportion to the strength of the belief. We obtained an attitude toward a behaviour as a result it ascribes that, it come to be connected to the behaviour are now deemed positive or negative. As a result:

$A \propto \sum_{i=1}^{n} b_i e_i$…….. (4)

As appeared in equation, the quality of every striking belief (b) is joined in a multiplicative design with the subjective evaluation (e) of the beliefs attribute, and the subsequent items are added over the n salient beliefs. An individual's attitude (A) is legitimately proportional (a) to this summative belief record.

Service quality index was computed by asking 25 questions with binary response choice. Questions covering tangibility, reliability, responsiveness, assurance, empathy, efficiency, accuracy, security, easy and convenient banking and customer service were posed to the respondents. If an individual answers yes to more than 19 questions, they might be considered highly satisfied with the plastic money. There are

less than 19 questions, they may be seen as less satisfied. The level of service is the study's variable in light of this service index. The general form to identify customer satisfaction on plastic money among customers is presented as

$$Y\ (Satisfaction\ Level) = \begin{cases} 0, \text{If Scale Score } < 50\% \\ 1, \text{If } 50\% < Scale\ Score < 75\% \\ 2, \text{If Scale Score } > 75\% above \end{cases} \ldots\ldots\ldots\ldots (5)$$

Ordered Logit Model is used as the degree of service increases from 0 to 2. The ordered logit model is a type of logistic regression in which the response variable is divided into more than two categories (Nwakuya & Maduka, 2019).

Pr (Y = C/Xi) = F (Xiβ) …….. (6)

where, Y is the response generated as outcome for service level that is coded as 0 = less satisfied, 1= moderately satisfied and 2 = highly satisfied; F is the standard logistic cumulative function; X is the set of independent variables.

Similarly, if

$P\ Yi\ >\ j\ = \frac{exp\ (x_i\ \beta\ -k_j\ )}{1+[exp\ (x_i\ \beta\ -k_j)]}$ j = 1, 2… M-1, which implies

$$P(Y_i = 1) = 1 - \frac{exp\ (x_i\ \beta\ - k_j\ )}{1 + [exp\ (x_i\ \beta\ - k_j)]}$$

$P(Y_i = j) = \frac{exp\ (x_i\ \beta\ -k_{j-1}\ )}{1+[exp\ (x_i\ \beta\ -k_{j-1})]} - \frac{exp\ (x_i\ \beta\ -k_j\ )}{1+[exp\ (x_i\ \beta\ -k_j)]}$, j=2,….., M-1, implying

$P(Y_i = M) = \frac{exp\ (x_i\ \beta\ -k_{m-1}\ )}{1+[exp\ (x_i\ \beta\ -k_{m-1})]}$…….. (7)

In the case of M=2, these equations simplify to:

$$P(Y = 0) = \frac{1}{1 + [exp\ (Z_i - k_i)]}$$

$P(Y = 1) = \frac{1}{1+[exp\ (Z_i-k_2)]} - \frac{1}{1+[exp\ (Z_i-k_1)]}$…….. (8)

Williams (2016) mentioned that the ordered log it model may be used to assess the likelihood that the unobserved variable Y* falls inside the various edge limits using the estimation of Z and the assumed logistic distribution of the aggravation term. It is necessary to quantify the users' attitudes toward plastic money in our situation. The empirical specification is as follows:

$Y = \alpha_o + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \cdots \ldots \ldots + \beta_n X_n + \varepsilon$……. (9)

The model in actual can be presented as:

$Y = \alpha_o + \beta_1 Age + \beta_2 Sex + \beta_3 Inc + \beta_4 Edu + \beta_5 Med\_Aware + \beta_6 QA\_Card + \beta_7 Pmt\_Plc + \beta_8 W\_Pay + \beta_9 AMO + \beta_{10} Mgmt\_IE + \beta_{11} Privacy + \beta_{12} Sol + \beta_{13} TA + \beta_{14} CS + \varepsilon$…….. (10)

where,
Y= Service level (i = 0, 1, 2)
ε = Error terms

Based on the independent variables, there are total four regression were performed. First three model describe the user's attitude towards plastic money, while model 4 combines all the variables in total (See Table 4 and 5 from result sections). The variable undertaken for the study is presented in Table 1.

Table 1: Variables and Expected Sign of Variables

Variables	Description	Value	Expected sign
Socio-Demographic			
Age	Respondent's age	1= Below 30, 0 = otherwise	±
Gender(Sex)	Respondent's gender	1=Male, 0= otherwise	±
Income (Inc)	Respondent's income	1=Below 50,000, 0=otherwise	±
Education (Edu)	Formal Education	1=Above SEE, 0=Otherwise	+
Media Awareness (Med_Aware)	Aware from Media about card	1= yes, 0=otherwise	±
Knowledge about Bank Policies			
Qualification of applying cards (QA_Card)	Requirements needed by applicant to apply for the card	1=yes, 0=otherwise	±
Payment Policies (Pmt_Plc)	Provide information about the payment policies	1=yes, 0=otherwise	±
Approach Toward Money			
Willingness to pay (W_Pay)	You are willing to pay money to use the card	1=yes, 0=otherwise	±
Awareness about money owed (AMO)	Bank gives you information about the money you owed	1=yes, 0=otherwise	±
Management of income and expenses (Mgmt_IE)	You are able to manage expenses as per your income	1=yes, 0=otherwise	±
Complexities			
Data security and privacy (Privacy)	Whether bank(s) have updated security	1=yes, 0=otherwise	±
Problem Solution (Sol)	Does bank provide quick solution for your problem	1=yes, 0=otherwise	±
Traditional approach (TA)	Does bank follow traditional approach	1=yes, 0=otherwise	±
Customer Service (CS)	Is bank(s) customer service good	1=yes, 0=otherwise	±

2.4 Study Area, Population and Sample

Kathmandu Valley is divided into three districts: Kathmandu, Lalitpur, and Bhaktapur, which together cover an area of 899 square kilometres (Pant & Dongol, 2009). Because people from all over the country have moved to the capital, the valley still has the largest number of bank branch offices (Shrestha et al., 2021). According to Nepal Rastra Bank (2020), all of the country's 27 commercial banks have their headquarters in Kathmandu. Relevant data and a large number of users could thus be easily obtained from various banks. The researcher's motivation for selecting the location is to collect information on how correspondence is practiced. Currently there are 7,669,827 users of debit card combining users of all commercial banks, development bank, Finance companies, and 168,682 users of credit card as of mid-December,2020 (Nepal Rastra Bank, 2020). Thus, all the users of debit and credit card of Kathmandu valley are considered as population for this study and following formula was used to derive the sample size: $n_o = \frac{z^2pq}{e^2}$ (Devkota et al., 2021) where, n_o= sample size required for study, z is the standard tabulated value for 95% confidence level equals 1.96, p is the prevalence of customer satisfaction on plastic money (i.e. 50 % = 0.5) and q is the allowable error that can be tolerated (e) = 5 % which equals 1-p. With resulting 384.16 in value, a non-response error of 5 percent i.e. 19.20 was added. Thus a total sample of 404 responses was collected for this study.

2.5 Research Instrument and Data Analysis Technique

Primary data was collected with the help of structured questionnaire to generate necessary output. Face to face interviews were conducted with the customers having bank account and plastic money and who resided in Kathmandu valley. KOBO toolbox was used to develop and deploy questionnaire. For data analysis, we derive descriptive statistics and inferential statistics and compute service index. Pre-estimation (specification error, goodness of fit and other diagnostics, correlation) and post estimation (multicollinearity and heteroskedasticity) test were also conducted while estimating ordered logistic regression. Microsoft excel is used for tabulating and ingesting the data and STATA software is used to analyse the data.

3. Results

3.1 Socio Demographic Characteristics

This research looked at responses from bank customers who use plastic money (debit and credit cards), and found that 57 percent of interviewees were males and 43 percent were females, indicating that the majority of plastic money users in the Kathmandu valley were men. Lanjewar (2015) discovered that 52.66 percent of respondents were men and 47.34 percent were women, which is consistent to our findings. In their study, Devlin et al. (2007) discovered that 53.3 percent of the participants are male and the rest are female. In a similar vein, Qureshi et al. (2018) discovered that in Pakistan, the majority of people aged 30-36 utilize plastic money. Raviprolu (2017) also found that those between the ages of 26 and 35 are more likely to utilize the card. Plastic money was shown to be widely used among Pakistanis aged between 30-36 and the ages of 26 and 35 are more likely to utilize the card. According to Bansal (2018), undergrads are more likely to utilize plastic money. We find that the majority (58.17 percent) of plastic money users in the valley were between the ages of 21 and 30, with 47.03 percent having a

bachelor's degree. Sixty-six percent of those who utilize plastic money earn between Rs. 25,000 and Rs. 50,000. Because two-thirds of the respondents earn more than Rs. 25000, they prefer to utilize plastic money instead of paper money.

3.2 Knowledge about Plastic Money and its Service Quality

Around 96 percent of the 404 respondents of the study were aware of plastic money. It demonstrates that the majority of bank customers are aware of the services offered by banks that can be used as an alternative to cash. In addition, respondents stated that they learned about plastic money via a variety of sources, including newspapers, pamphlets, hording boards, television, and bank awareness campaigns. 61% said they learned about plastic money through the bank itself (Table 2).

In terms of plastic money service quality, it was assessed on the basis of tangibility and reliability, with the survey revealing that 50% of plastic money consumers found service quality given by banks to be substantial while using plastic money. On the basis of trustworthiness, 72.46% of respondents said that information concerning debit and credit cards can be found on the bank's website. 64.67% of respondents felt the bank gives them enough time to resolve any issues they may have had when utilizing plastic money. 75.15% of respondents said bank employees are courteous to them. However, only 62.57% indicated the bank's workers are willing to assist them. Furthermore, 70.96% claimed the card's performance exceeded their expectations completely.

Furthermore, 69.16% of respondents believe that using the card is safe, while 61.08% believe that they are notified whenever a transaction occurs in their bank account. Furthermore, 63.47% of respondents are pleased with the bank's customer service. Only 30.54 % of respondents claim that their bank does not notify them when their services expire.

Table 2: Service Quality Index of Plastic Money

Aspect	Particular	Yes (Count)	Yes (%)	No (Count)	No (%)
Tangibility	Bank has up-to date equipment & technology	273	81.74	61	18.26
	Sufficient number of ATM machines	231	69.16	103	30.84
	Your bank(s) have advance security	214	64.07	120	35.93
Reliability	Information are provided on website	242	72.46	92	27.54
	Easy process of transactions	252	75.45	82	24.55
Responsiveness	Bank Perform services right for the first time	205	61.38	129	38.62
	Bank(s) provide information in time	233	69.76	101	30.24
	Bank(s) provides sufficient time to address your problem	216	64.67	118	35.33
Assurance	Is bank staff polite and friendly	251	75.15	83	24.85
	Employees are always willing to help you	209	62.57	125	37.43
Empathy	There has been misunderstanding between the bank staff and you	102	30.54	232	69.46
	Employees give you limited time only	195	58.38	139	41.62
	Have you ever received any training to use card	160	47.9	174	52.1
	Do you think you using card helps in sustainable development?	252	75.45	82	24.55

Aspect	Particular	Yes (Count)	Yes (%)	No (Count)	No (%)
Efficiency	Card performance meets your expectations	237	70.96	97	29.04
	Does it have faster log in facility	218	65.27	116	34.73
	New changes from magnetic stripe card to chip card have fulfilled your expectation	203	60.78	131	39.22
Accuracy	Problem solving through instant information	210	62.87	124	37.13
	Bank insists on error-free transaction records	205	61.38	129	38.62
Easy and Convenient Banking	Card service provided by your bank(s) can be used by illiterate person as well	192	57.49	142	42.51
	There is problem in understanding the electronic message	107	32.04	227	67.96
Security	It is safe to use card while shopping	231	69.16	103	30.84
	You have received message immediately after withdrawal and deposit	204	61.08	130	38.92
Customer Service	You are satisfied with the card service provided by your bank	212	63.47	122	36.53
	Does your bank(s) inform that your services are going to expired timely	232	69.46	102	30.54

Source: Survey data

As per the index results calculated based on formula, the gender-wise awareness index is given in the table 3.

Table 3: Awareness Index of Plastic Money

	Service Index (in %)								
	Male			Female			Overall		
	High	Moderate	Low	High	Moderate	Low	High	Moderate	Low
Tangibility	43.68	33.16	23.16	38.19	40.28	21.53	40.935	36.72	22.345
Reliability	51.58	40.53	7.89	59.72	34.03	6.25	55.65	37.28	7.07
Responsiveness	30.53	38.42	31.05	32.64	40.97	26.39	31.585	39.695	28.72
Assurance	47.89	41.05	11.05	47.23	44.44	8.33	47.56	42.745	9.69
Empathy	37.37	32.64	30	33.33	39.58	27.08	35.35	36.11	28.54
Efficiency	31.58	37.89	30.53	38.19	34.72	27.08	34.885	36.305	28.805
Accuracy	42.11	41.05	16.84	43.06	36.81	20.14	42.585	38.93	18.49
Easy and Convenient Banking	17.89	53.68	28.42	22.22	45.14	32.64	20.055	49.41	30.53
Customer Service	45.26	42.63	12.11	48.61	35.42	15.97	46.935	39.025	14.04
Average	38.65	40.12	21.23	40.35	39.04	20.60	39.50	39.58	20.91

Source: Survey data

In order to check the service index of attitude on plastic money, we found that 43.68 % males and 38.19 % females said there is high tangibility while using the plastic money. 59.72 % females and 51.58 % males thought that plastic money were highly reliable. Around 40.97 % females and 38.42 % males said bank is moderately responsive. 47.89 % males place high assurance on the plastic money where as 44.44 % females place moderate assurance on plastic money they use. 37.37 % males have high empathy where as 33.33 % females have high empathy. In terms of efficiency, 37.89 % males said the plastic money is moderately efficient where as 38.19 % females said they think it is highly efficient. 43.06 % female

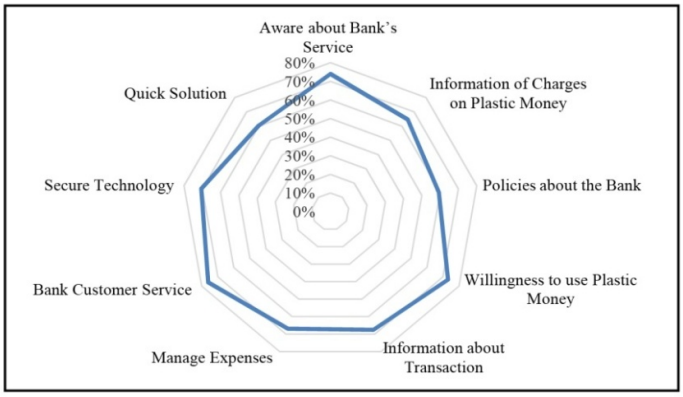
respondents said plastic money is highly accurate and 41.05 % males said it is moderately accurate. 53.68 % males and 45.14 % females felt cards were moderately easy and convenient. 45.79 % males said it is highly secured to use the plastic money whereas 48.61 % female were highly satisfied with the customer service provided by the bank.

3.3 Factors Affecting Users' Attitude on Plastic Money

Seventy-four percent of respondents were satisfied with the bank's service, while 26% were dissatisfied. Banstola (2008) disclosed with respect to administrations offered by commercial banks which demonstrated that ATM was broadly utilized by banking clients and generally utilized electronic delivery channel used by commercial banks. Banstola (2008) said that ATMs were widely used by banking customers and commercial banks utilized electronic delivery channels. The vast majority of respondents were pleased with the service and equally enthusiastic about using plastic money in their daily lives. Respondents who were dissatisfied with the bank's service stated that the bank does not provide timely information. They only provide minimal service, and respondents must attend the bank in person for even minor issues because they do not operate over phone. Reversing the incorrect transactions takes a long time.

It is also observed that 59.28 % respondents had knowledge of the bank policies pertaining to plastic card usage. It means that most of the people know what are the terms and conditions to use the plastic money. It is vital to know the charges needed to pay while withdrawing money and what is the yearly charge needed to pay by using the plastic money (Mani & Saraswathi, 2022). We can conclude that users of plastic money are aware about the terms and conditions to use the card and the bank policies therein. Similarly, 64.67% are aware of the various fees that banks charge for the use of plastic money. They are aware of the various fees that must be paid for the services. The majority of respondents are aware of the amount they must pay after using plastic money. They know how much they must pay annually and how much they must pay if they use ATM machines from different banks. Banks in Saudi Arabia doesn't charge any fees while using debit or credit cards at the terminals (Abdul-Muhmin, 2010). Unlike in Saudi Arabia, Worthington (1996) has found that customer in UK know about the fees which they have to pay. Users only use plastic money after learning how much they must pay as a charge.

Figure 2: Factors Affecting Users' Attitude on Plastic Money



Source: Survey data

Plastic money is acceptable to 73.05% of respondents as they find it easier to use plastic money than to use paper money. 67.66 % respondents had said that timely information about the transaction done was desirable to get updated about their bank account balance (Figure 2). Larkotey et al. (2012) in their study conducted in Ghana found that customer preferred using plastic money because of speed transaction, adequate number of ATM and user-friendly system. Since plastic money was easier to handle than cash, 67.07% of respondents stated they were able to manage their spending. Plastic money is more acceptable to them, and it is more trustworthy and safer. 76.05% stated their bank's customer service is good because they help them address their problems quickly and they haven't experienced any losses. Respondents who had said there is no good customer service said that the bank should keep enough staff in the front desk to cater the clients. They should give priority to low amount deposit also. Bank staff doesn't provide enough time to solve the problems while they visit bank with their problems. Customers who are more service oriented used ATM less because of poor service of the banks. Customer service has led to use the ATM cards to the higher degree of intent in Austria (Foscht et al., 2010).

In terms of innovation, 70.66% responded that the service they use is technologically advanced. 60.18 % found that bank provided quick solution for the problems they faced during the use of plastic money. 52.69 % said that their bank uses traditional approach to do their daily work related to plastic money. People in general are sceptical about the security of the information but overrule it due to convenience of using the cards (Raviprolu, 2017). Banks should modernize their technology, maintain security surrounding ATM machines alongside advanced cyber security, according to respondents.

3.4 Regression Estimation

Pre and Post Estimation: We examine specification error, goodness of fit, and other diagnostics in this step for pre-estimation. It is evaluated for specification error to check if the model has been properly defined (Singer & Andrade, 1997). In our model the _hat value is statistically significant i.e., 0.001 which is lesser than 0.05 and the value of _hatsq is more than 0.05 i.e., 0.582 which is not statistically significant. So, the results confirm that there is no specification error. Since the p-value from the test is 0.27 which is more than 0.05 or 5%, we can say that this model fits the data well. Since the count R2 is 0.805 which is more than 0.7 so we can say that there is fitness of dataset. We examine multi-collinearity and heteroskedasticity within the post-estimation results section to see whether there is any repetition in the data sets. Frost (2017) states that multicollinearity occurs when independent variables in a regression model are inter-related. From the results we can see that all the independent variables have tolerance of more than 0.1 and the VIF is also less than 10. Likewise, the mean VIF is 1.10 which shows that the data set has no multicollinearity. Heteroskedasticity is a precise variation in the distribution of residuals over the range of measured values, and it is frequently considered in case of linear regression through the cause, despite the fact that this in no way, shapes or forms a barrier to its utilisation (Rigobon, 2003)(Greer, 2011). We can observe that there is heteroskedasticity problem in this existing data set (since the prob. Chi2>0.0000).Hence, we report robust standard error to rectify this problem.

Ordered Logistic Regression: Since the study aims to understand the attitude of users towards plastic money in Kathmandu valley, the study had one dependent variable identified from within the awareness index, first: tangibility, reliability and responsiveness; second: assurance, empathy and efficiency, third: accuracy, easy and convenient banking, security and customer service, and fourth, overall awareness.

Table 4 explains the three separate regression results drawn for ordered logistic model and the results on overall awareness is reported in Table 5.

Table 4: Ordered Logit Results

Model 1 Tangibility, Reliability and Responsiveness			*Model 2 Assurance, Empathy and Efficiency*			*Model 3 Accuracy, Easy and Convenient Banking, Security and Customer Service*		
Variables	*Coefficient*	*Odds Ratio*	*Variables*	*Coefficient*	*Odds Ratio*	*Variables*	*Coefficient*	*Odds Ratio*
att			*att*			*att*		
up_to_date	*-0.463*	*0.629*	*staff_resp*	*-0.767***	*0.464***	*prb_slv*	*0.0453*	*1.046*
	(0.392)	*(0.247)*		*(0.378)*	*(0.176)*		*(0.288)*	*(0.301)*
enough_atm	*-0.0551*	*0.946*	*help*	*-0.0533*	*0.948*	*err_free_tran*	*0.0593*	*1.061*
	(0.295)	*(0.279)*		*(0.288)*	*(0.273)*		*(0.288)*	*(0.306)*
adv_security	*-0.464*	*0.629*	*mis_undr*	*-0.509**	*0.601**	*illet_ppl*	*-0.247*	*0.782*
	(0.289)	*(0.182)*		*(0.303)*	*(0.182)*		*(0.285)*	*(0.223)*
info_website	*-0.0361*	*0.965*	*tme_bnd*	*0.491**	*1.635**	*prb_und*	*-0.506**	*0.603**
	(0.298)	*(0.288)*		*(0.270)*	*(0.441)*		*(0.281)*	*(0.169)*
easy_prces	*-0.211*	*0.810*	*train_crd*	*-0.474**	*0.623**	*safe_0*	*-0.850***	*0.427***
	(0.319)	*(0.258)*		*(0.281)*	*(0.175)*		*(0.343)*	*(0.147)*
srvc_right	*-0.472**	*0.624**	*sus_dev*	*-0.868***	*0.420***	*msg_wth_dep*	*-0.352*	*0.703*
	(0.282)	*(0.176)*		*(0.360)*	*(0.151)*		*(0.292)*	*(0.206)*
pvd_info	*0.200*	*1.221*	*gud_perfmn*	*0.0521*	*1.053*	*satsfd_serv*	*-0.371*	*0.690*
	(0.298)	*(0.364)*		*(0.321)*	*(0.338)*		*(0.310)*	*(0.214)*
suff_tme	*-0.0985*	*0.906*	*fast_login*	*-0.110*	*0.896*	*info_exprd*	*-0.850***	*0.427***
	(0.285)	*(0.258)*		*(0.293)*	*(0.262)*		*(0.344)*	*(0.147)*
			mgnt_strp	*-0.415*	*0.660*			
				(0.292)	*(0.193)*			
Constant cut1	*-2.312****	*0.0991****	*Constant cut1*	*-2.935*****	*0.0532*****	*Constant cut1*	*-3.175*****	*0.0418*****
	(0.550)	*(0.0545)*		*(0.544)*	*(0.0289)*		*(0.503)*	*(0.0210)*
Observations	*334*	*334*	*Observations*	*334*	*334*	*Observations*	*334*	*334*

Robust standard errors in parenthesis (*** p<0.01, ** p<0.05, * p<0.1)

In Model 2, the result shows that five variables have relationship with service level of assurance, empathy and efficiency but only one variable have positive significant relationship; limited time for problem solving. Looking at the coefficient and odds ratio, our result indicates that for one unit change in limited time for problem solving, service level for assurance, empathy and efficiency increased by 1.63 times. From the result of marginal effect, we can see that one unit change in limited time for problem solving, service level for assurance, empathy and efficiency increases by 49.1 %. It means this variable have positive significant relation with the service level. However, staff politeness and friendly behaviour, misunderstanding with the staff, training to use card and sustainable development have negative significant with service level of assurance, empathy and efficiency.

In Model 3, The coefficient and odds ratio of service level of accuracy, easy and convenient banking, security and customer service shows one unit change in independent variables and its impact on service

level in accuracy, easy and convenient banking, security and customer service. This section shows that the independent variables which are significant with service level of accuracy, easy and convenient banking, security and customer service. Here the significant independent variables are problem in understanding electronic message, safe to use card, information about services are going to be expired timely. The result shows that the variables have negative significant relationship with accuracy, easy and convenient banking, security and customer service.

Table 5: Odds Ratio and Marginal Effects of Service Level of Overall

VARIABLES	**Coefficient**		**Odds ratio**		**Marginal effects**	
att	Value	SE	Value	SE	Value	SE
up_to_date	0.00450	(0.382)	1.005	(0.384)	0.00450	(0.431)
enough_atm	-0.0894	(0.326)	0.915	(0.298)	-0.0894	(0.338)
adv_security	-0.511	(0.339)	0.600	(0.203)	-0.511	(0.322)
info_website	-0.0640	(0.337)	0.938	(0.316)	-0.0640	(0.335)
easy_prces	-0.318	(0.378)	0.728	(0.275)	-0.318	(0.357)
srvc_right	-0.376	(0.306)	0.687	(0.210)	-0.376	(0.319)
pvd_info	0.347	(0.333)	1.415	(0.472)	0.347	(0.329)
suff_tme	0.209	(0.310)	1.233	(0.382)	0.209	(0.320)
staff_resp	-0.750*	(0.412)	0.472*	(0.195)	-0.750*	(0.395)
help	0.0583	(0.317)	1.060	(0.336)	0.0583	(0.315)
mis_undr	-0.390	(0.343)	0.677	(0.232)	-0.390	(0.323)
tme_bnd	0.564*	(0.299)	1.758*	(0.526)	0.564*	(0.300)
train_crd	-0.415	(0.302)	0.660	(0.199)	-0.415	(0.305)
sus_dev	-0.478	(0.380)	0.620	(0.236)	-0.478	(0.402)
gud_perfmn	0.292	(0.342)	1.339	(0.458)	0.292	(0.359)
fast_login	-0.0121	(0.302)	0.988	(0.298)	-0.0121	(0.313)
mgnt_strp	-0.414	(0.309)	0.661	(0.204)	-0.414	(0.320)
prb_slv	0.167	(0.318)	1.181	(0.375)	0.167	(0.321)
err_free_tran	0.207	(0.304)	1.230	(0.374)	0.207	(0.306)
illet_ppl	-0.110	(0.308)	0.895	(0.275)	-0.110	(0.303)
prb_und	-0.352	(0.311)	0.703	(0.219)	-0.352	(0.307)
safe_0	-0.824**	(0.359)	0.439**	(0.157)	-0.824**	(0.373)
msg_wth_dep	-0.321	(0.316)	0.725	(0.229)	-0.321	(0.318)
satsfd_serv	-0.284	(0.338)	0.753	(0.255)	-0.284	(0.334)
info_exprd	-0.814**	(0.354)	0.443**	(0.157)	-0.814**	(0.361)
Constant cut1	-4.346***	(0.796)	0.0130***	(0.0103)	-4.346***	(0.812)
Observations	334		334		334	

*** p<0.01, ** p<0.05, * p<0.1

Finally final regression including overall variables is performed and results are reported in Table 4. As, the goal of the study is to learn about users' attitudes toward plastic money in the Kathmandu valley, it employs ordered logistic regression. Overall, the odds ratio and marginal effect of service level show the influence of a one-unit change in the independent variable on the service level. With the odds ratio and marginal effects, only significant factors are compared. Table 4 illustrates final regression model that combines all the dependent variables together. Looking at the odds ratio and marginal effects, the results show that a one-unit change in limited time raises the odds ratio by 1.76 times and the marginal effects by 56.4 percent in total service level. However, staff warmth and civility, as well as a secure card and information about services that are about to expire, have a negative impact on total service quality.

4. Discussion

Plastic money has been increasingly adopted by the people around the world than paper money (Cohen, 2009 ; Fung & Halaburda, 2017). People in the Kathmandu valley have begun to prefer plastic money to paper money, and this trend is predicted to continue in the future (Dhungel et al., 2012) because of its easier process, secured nature, efficiency and higher convenience in conducting banking transactions. Individuals in Nepal actually consider that it is secure and easier to withdraw cash from bank (Shrestha, 2020; Devkota et al., 2021). Information and broadcast communications have advanced in Nepalese commercial banks, Banstola (2008). With substantial success in the sectors of ATM, mobile banking, and web banking feasible as a result of banks' persistent attempts to educate clients about various financial services. Individuals in Nepal truly believe that withdrawing cash from a bank is secure and simple (Shrestha, 2020). Information and broadcast communications have evolved in commercial banks in Nepal. According to Banstola (2008), with major success in the fields of ATM, mobile banking, and online banking possible because of banks' consistent efforts to educate customers about different financial services. Customers in the older age groups adopted the ATM card more quickly than those in the younger age groups, owing to the fact that they had postponed the adoption of the ATM card (Yang & Ching, 2014). As similar to our study, Qureshi et al. (2018) state that age has played an important role in the adoption of use of ATM cards. More than 58 % of respondents who are between the ages of 21 to 30 years have adopted plastic money more than any other payment mode.

Furthermore, the vast majority of respondents, both male and female, are moderately satisfied with the plastic money in Kathmandu Valley, implying that banks must continue to develop more awareness advertisements to encourage customers to utilize it. Extending this argument, Sultana and Hasan (2016) contended that plastic money is a relatively new notion that has largely replaced the conventional concept of paying with cash and plastic money is a concept established in response to the growing number of consumer transactions involving both physically and online modes. The ATM services have positive effect on the consumer's loyalty; if appropriate working is guaranteed by the banks, there will be essentially higher consumer loyalty. Accessibility of money has most noteworthy effect on consumer satisfaction (Joshi, 2019).

Besides that, Sultana and Hasan (2016) claims that in recent years, new private and foreign banks have been attempting to compete with Indian banks by adopting new technological services such as plastic cards, mobile banking, electronic funds transfer (EFT), internet banking, and other similar services in order to reach out to large number of customers. Additionally, Bhandari et. al; (2021)demonstrates that private sector banks provide more satisfactory ATM service than public sector banks. Plastic money is primarily used by young people all across the world, from undeveloped to industrialized countries. The public's perception of plastic money is favourable (Eucheuma, 2004). Furthermore, Kaptan (2002) suggested that in the past, a few non-banking institutions entered the arena of providing various services such as shared ATM networks, POS terminals, and check processing centers, boosting the plastic cards' potential.

There are few limitations and scope for further research in this area. As this study only focuses on the user's attitude on plastic money in one mega metro city, it leaves some potential areas for future researcher. Researchers ought to analyse the effect of marketing stimuli based on promotions for

recurrence of utilization of plastic money. They could also study the relationship between plastic money attitude and behaviour. Similarly, study can be performed in large sample size, to pick through random sampling procedure to have more validated outcomes that can be summed up to in general proposition. Besides, research can be directed to different regions of Nepal, where plastic money is utilized broadly or regions where its utilization isn't predominant, for example distant domains, and to find different attitudes and assorted views of public or buyers with respect to plastic money. This enquiry has focused on use of plastic money only, yet not on the smart card or other electronic exchanges like internet banking, mobile banking, and online exchanges, which in general is its delimitation. Lastly, though money related losses and technology flaws are interrelated, other reasons of loss are equally important for further studies.

5. Conclusion

The present research was conducted in Kathmandu valley to study the attitude of users of plastic money. The objective of the study was to analyse the factors influencing the user's attitude of plastic money in Kathmandu valley alongside measuring users' attitude toward plastic money, measuring factors affecting users' attitude and identifying challenges and problems faced by users. Recommending proper management solution were sub-objectives of the study. Our study observed that both males and females are equally aware about the plastic money, majority of plastic money users were in the age group of 21 to 40.Around 74% respondents were satisfied from the service given by the bank, 59.28% respondents knew about policy of the bank and they also knew about the fees they are required to pay per year after using the plastic money. Study also found that 73.05% respondents were willing to use the plastic money and 67.66% respondents had said bank provided transaction information through SMS and emails. Most of the respondents were able to manage the expenses after using the ATM card and 76.05% customer said the service of the bank is good. 70% respondents said their banks have secured technology and bank provides quick solution for the problems which they face. It implies that customer satisfaction on service provided by bank, policies of bank, willingness, information, expenses management, security were found to be factors affecting user's attitude on plastic money. The index result shows that users are moderately satisfied with the plastic money they use within Kathmandu valley. Results confirm that users have positive attitude toward plastic money. Further, ordered logistic regression discloses that time limit provided by the customer service department was highly significant at 10%. Whereas staff response, security and information about service expiration were negatively significant at 10% and 5% respectively. Result indicates that one unit change in time limit in service index increases by 1.75 times.

The study suggests several key recommendations to enhance ATM usage and customer satisfaction. Firstly, it emphasizes the importance of improved communication channels between clients and banks to swiftly address grievances, advocating for increased mobile connectivity to banking personnel. Secondly, there is a call for intensive education programs to enhance customer understanding of plastic money, aiming to boost confidence and promote the advantages of ATMs. Thirdly, the study underscores the necessity for regular maintenance and timely upgrades of ATMs to ensure efficiency and reliability. Additionally, it highlights the significance of adapting language in ATMs to the main spoken language in the country for inclusivity. Lastly, the study urges the national regulatory body (NRB) to play a pivotal role by incentivizing plastic money use and creating a regulatory framework to support card usage.

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