Original Article

Analyzing Contemporary Credit Card Concerns through Behavioral Economics: Nudging Towards Responsible Usage

IIMS Journal of Management Science
1–21

DOI: 10.1177/0976030X251359381
journal.iimshillong.ac.in

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Abstract

The United Nations announced 17 sustainable development goals (SDGs) as part of its 2030 Agenda for Sustainable Development in 2015. Among these, two key goals, decent work and economic growth (SDG 8) and responsible consumption and production (SDG 12), are significant for a sustainable economy. Economic growth is inherently coupled with the production and consumption of goods and services. The financial transactions associated with goods and services are often influenced by people's decisions because of certain behavioral patterns and cognitive biases. In the contemporary landscape, credit cards are an integral part of the financial system, which account for a significant share of everyday transactions. This article examines specific behavioral patterns people often exhibit while using credit cards. These behavioral patterns also give rise to different concerns, which may negatively affect sustainable economic development. This article makes an attempt to comprehend and analyze the issues associated with credit card usage, which raise severe challenges for economic sustainability, by using specific insights derived from the field of psychology and behavioral economics. The literature on psychology and behavioral economics provides valuable insights into human behavior during economic decision-making process. This study aims to provide a set of policy recommendations by referring to certain nudging techniques which can effectively facilitate the prudent usage of credit cards in the Indian context so that sustainable economic growth can be promoted.

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Keywords

Nudge, cognitive biases, credit card usage, behavioral economics, consumer psychology

JEL Classifications: E70, E71, G41, H30

Received 08 September 2024; Revised 11 March 2025; Accepted 30 June 2025

Introduction

The United Nations announced 17 sustainable development goals (SDGs) for its 2030 Agenda for Sustainable Development in 2015. These goals emphasize five key categories: people, planet, prosperity, peace, and partnership (United Nations, 2015). Some of the most important sectors, like health, the economy, and the environment, are fundamental to the sustainability of humankind. In the context of the economy, in this article, we will examine some recent credit card-related statistics from India to understand various problems associated with the inappropriate use of credit cards that may obstruct sustainable economic development.

Over the past decade, there has been a substantial increase in the total number of credit cards in India. By the end of 2014, there were 20 million credit cards, which rose more than fivefold by the end of 2024 to 108 million. According to a recent Reserve Bank of India (RBI) report, credit card transactions in December 2024[1] amounted to ₹1.883 trillion (approximately $21.6 billion). Similar trends can be observed globally. The Federal Reserve's report (2025) indicates that the total transaction value in the United States increased from $27 trillion in 2015 to $53 trillion in 2022.[2] Figure 1 illustrates the yearly increase in the number of credit cards and transaction value from 2014 to 2024 in India.

As Figure 1 illustrates, the prevalence of credit card debt in India is experiencing a significant upward trend attributed to various factors, including the rapid

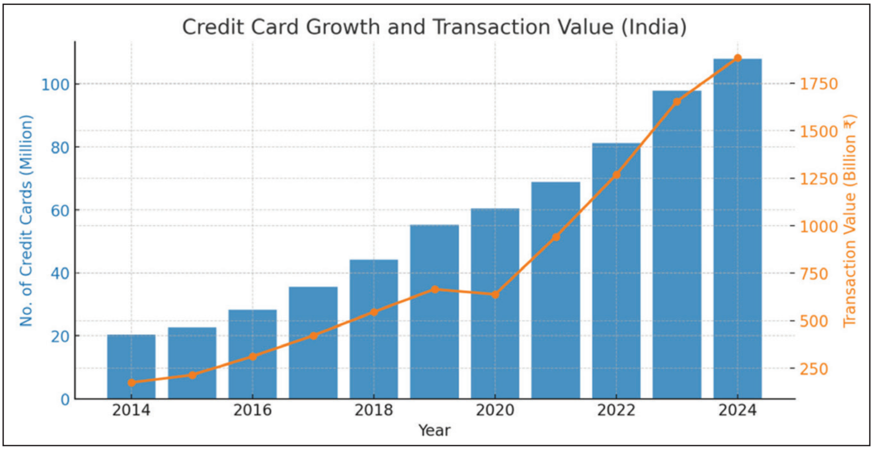

Figure 1. Credit Card Growth and Transaction Value (2014–2024) in India.

Source: RBI Bank-wise ATM /POS/Cart statistics, https://www.rbi.org.in/Scripts/ATMView.aspx.

growth of the country's e-commerce sector. This increase in credit card usage has consequently resulted in some significant issues, such as overspending, mismanagement of credit card usage, and overconsumption, which in turn also contribute to a rise in gross non-performing assets. In India, credit card defaults rose to ₹4,072 crore ($ 490 million) or 1.94% at the end of the financial year in March 2023.[3] The rising rate of credit card defaults is one of the noteworthy indicators of the issues faced by India's economy. Although we focus more on Indian statistics, we can observe similar trends worldwide. The aforementioned data pertaining to credit card default exerts a substantial adverse influence on the prospects of sustainable economic development. If this issue persists for an extended duration and continues to escalate, attaining sustainable economic development will become very difficult. Therefore, it is essential to promptly intervene to control this issue for a sustainable economic system.

It is very important to understand the root causes of the increase in credit card defaults. The behavior and decision-making characteristics of individuals play a significant role in contributing to this issue. Behavioral economics gives us valuable insights into people's behavior and the factors and certain biases that influence their economic decisions (Datta & Mullainathan, 2014). In this article, insights from behavioral economics are proposed and recommended in the form of various nudging techniques to the policymakers so that they can dynamically use these recommendations for the benefit of consumers while they engage in using credit cards. Along with certain conventional economic ideas that offer regulatory and price-based solutions (Bhargava & Loewenstein, 2015), behavioral economics can also be used as an additional tool to assist policymakers in finding solutions to contemporary issues related to credit card usage. This study aims to provide a set of policy recommendations that can effectively facilitate the prudent usage of credit cards to promote sustainable economic growth. The first section presents an overview of economic sustainability and certain concerns related to the imprudent usage of credit cards. The second section presents a detailed analysis of concerns related to credit card usage with reference to three specific behavioral patterns (a) limited attention and cognition, (b) inaccurate beliefs, and (c) present bias. The third section suggests a few policy recommendations with the help of insights from behavioral economics, which might be helpful to resolve various concerns related to the use of credit cards to some extent.

Sustainable Development and Economic Sustainability

The World Commission on Environment and Development in 1987 defined sustainable development as follows:

> Sustainable development is development which meets the needs of the present without compromising the ability of future generations to meet their own needs. (1987)

The concept of sustainable development encompasses three fundamental dimensions that are widely recognized: economic, environmental, and social. The interconnections between economic, environmental, and social factors become apparent when we consider the usage of goods and services in meeting the needs of individuals. One of the 17 SDGs announced by the United Nations for its 2030 agenda is *Decent work and sustainable economic growth* (SDG 8[4]). A key target under SDG 8 is to improve *global resource efficiency in consumption and production and endeavour to decouple economic growth from environmental degradation*.[4] Similarly, SDG 12, *Responsible Consumption and Production*,[4] focuses on establishing sustainable consumption and production patterns through adopting and implementing appropriate policy instruments. Additionally, SDG 12 aims to ensure that people worldwide have access to the information and awareness necessary for sustainable development and adopting lifestyles in harmony with nature.

According to Spangenberg (2005), *In the economic debate, sustainable development is most often described as the need to maintain a permanent income for humankind, generated from non-declining capital stocks* (p. 48). Harris (2003) suggests that in the context of economic sustainability, it is crucial to consistently produce goods and services that fulfill the requirements of society while managing government and external debt responsibly. Thus, it is necessary to maintain or increase the various forms of capital, such as social capital, human capital, natural capital, and manufactured capital, for sustainable economic development (Spangenberg, 2005).

According to Amaral Júnior and Bertran (2021), debt is considered to align with sustainable development when it serves as a means to extend credit to enhance individuals' quality of life. In a sustainable economic system, debt should be used responsibly, taking into account people's behavioral biases. The allocation of credit to an individual must be contingent upon their feasible ability to repay it. An increase in consumer debt, that cannot be paid back, would have a detrimental impact on economic stability. Mian and Sufi (2015) state that a significant rise in household debts typically serves as a precursor to economic crises. Amaral Júnior and Bertran (2021) further states:

> Ideally, it is worthy to enter a financial agreement that can dramatically improve the way people live, as the initiatives promoted by Mohamed Yunus,[5] or the initiatives to increase people's professional skills, like good student loans. However, it is unclear if there are any lasting benefits for the mortgages that are cursed to repossession, or credit card revolving credit. (p. 180)

Although mortgages may offer long-term advantages, the usage of credit cards and the accumulation of credit card debt are increasingly prevalent trends whose advantages are not certain.

This article closely examines the concerns related to the imprudent usage of credit cards and the escalation of debt. By examining, the idea is to suggest some policy recommendations to promote the prudent usage of credit cards to some extent. In what follows, we shall discuss economic sustainability and growing problems with credit card debt.

Economic Sustainability and Credit Card Practices

Governments and various non-government organizations around the world are focusing on the sustainable production of goods. Furthermore, these goods are consumed by the general public. So, in order to maintain a sustainable economy, the responsible consumption of these goods is equally important. Proponents of sustainable consumption recommend reducing the wastage of available resources (Cohen, 2007). Irresponsible consumption can further lead to overconsumption, knowingly or unknowingly. Overspending can be a significant contributing factor to overconsumption (Lim et al., 2014). Overconsumption adversely impacts sustainable development in different ways. For example, overconsumption of food can disrupt the equal distribution of food among the entire population. Overconsumption also results in a rise in waste. Waste management itself is a significant challenge for sustainable development, considering the growing population. Similarly, overspending can lead to an increase in debt, which would have an adverse effect on economic sustainability.

In contemporary times, credit cards are one of the main factors contributing to overspending. People tend to purchase more than they need and beyond their financial capacity because of the easy availability of financing options such as credit cards and equated monthly instalments (EMIs) (Roberts & Jones, 2001). Credit card misuse is closely associated with patterns of overconsumption because of the easy accessibility of credit. The option to defer payment effectively decouples the immediate psychological pain and discomfort associated with spending. In contrast to cash or debit card transactions, where the immediate outflow of funds is directly experienced, credit card purchases create a temporal disconnect between consumption and financial liability. For example, consumers may be more inclined to purchase high-cost electronics online when they have options to use credit cards and free EMI facilities to defer payments. That is to say, credit cards facilitate consumption beyond individuals' immediate financial capacity. Behavioral economics suggests that individuals are prone to various biases, such as optimism bias and present bias, which lead them to perceive their future financial situation more favorably than it may actually be. Empirical evidence indicates that many credit card users struggle to meet their payment obligations on time, and delinquency rates are rising (TransUnion CIBIL, 2024). When confronted with financial difficulties, users often choose to pay only the minimum required balance, which traps them in a cycle of debt due to accumulating high interest rates. This phenomenon is resulting in an increase in the number of consumers who are facing challenges with meeting their payment obligations within the deadline, hence inflicting interest on the consumers on top of the already existing credit card debt. In this manner, persistent reliance on credit cards reinforces unsustainable consumption behaviors. That is why this analysis of credit card usage is very significant in the context of sustainable economic growth.

In modern society, there has been a significant transformation in the manner in which individuals work, live, and engage in shopping. A major reason for the dramatic transformation is the rapid growth of internet infrastructure, along with the increasing number of digital payment applications and options. The use of credit cards has become an integral part of people's lifestyle and their preferred payment mode. The utilization of credit cards has experienced a further increase due to the widespread use of smartphones, mostly because of the convenience they offer. Individuals can conveniently install various digital payment applications on smartphones and securely store their credit card information for subsequent transactions, hence facilitating seamless purchase transactions. In the present era, digital payment applications have become an essential component in numerous financial transactions.

Furthermore, e-commerce platforms like Amazon and Flipkart are further aggravating current challenges related to the use of credit cards. There has been a significant advancement in the last 15 years in the e-commerce industry, which has also presented a number of new contemporary challenges. Business enterprises employ behavioral economics concepts to enhance their sales performance by employing diverse techniques that make use of the consumer's browsing history and preferences (Mirsch et al., 2017). E-commerce websites promote their products through digital marketing; for instance, we often see tailored advertisements online based on our previous web searches (Gironda & Korgaonkar, 2018). We are bombarded daily with such ads while we are using the internet on various digital devices. When people see pop-up advertisements of things that they have previously searched for while using the internet on a computer or smartphone, these pop-ups may attract consumer's attention right at that moment and increase the purchase intention because customized advertisements are more relevant to consumer's interests (Bleier & Eisenbeiss, 2015; Doorn & Hoekstra, 2013). These days, banks, together with e-commerce websites, are heavily promoting the usage of credit cards with some extra discounts. Online retailers frequently offer promotional sales during which they provide additional discounts on purchases to consumers who use specified bank credit cards. Usually, consumers who possess credit cards from these specified banks may feel tempted to make extra purchases to avail of the discount benefits, which, otherwise, could very well be avoided. E-commerce platforms are also employing the strategy of providing interest-free EMIs on credit card purchases in order to entice consumers to make additional purchases. Hence, we can see an increase in the overall sales figures of e-commerce platforms because these interest-free EMIs give free credit to customers for several months. However, these extra discounts and EMIs also lead consumers to overspend because consumers may buy goods just because of discounts and free credit, which they might not need or which they cannot otherwise afford. Consequently, this overspending may also contribute to credit card default because consumers might not be able to repay their credit card bills on time. The phenomenon of rising credit card default rates can negatively affect economic sustainability since it eventually leads to the rise of non-performing assets.

Behavioral economics has provided us with useful insights into various aspects of human behavior, including loss aversion, over-optimism, and self-control (Thaler, 2017). These behavioral patterns hold significant relevance when analyzing the trend of credit card usage. In what follows, we will use insights from behavioral economics to examine the causes of irresponsible usage of credit cards.

Behavioral Economics and Credit Card Concerns

The fundamentals of economics provide some of the most important inputs for our banking and financial policies, such as the understanding of asymmetries of information and market mechanisms (Datta & Mullainathan, 2014). In traditional economics, it is assumed that economic actors are perfectly rational beings with full information about their context of decision-making (Wilson, 2020). Traditional economic theories presuppose that individuals are logical decision-makers who choose actions that will improve their well-being. However, we are learning new insights about human behavior from behavioral economics, which is an interdisciplinary field combining economics and psychology (Angner, 2016; Mirsch et al., 2017; Mullainathan & Thaler, 2000). Behavioral Economics is the study of human behavior in situations that result in economic outcomes. Behavioral Economics uses psychological insights to analyze people's decisions on economic aspects (Mullainathan & Thaler, 2000). According to behavioral economics, human behavior is not always as rational as expected by conventional economic models (Thaler, 2017). These recent theories regarding human behavior can be very helpful while formulating economic and financial policies. Studies in behavioral economics show that an agent may exhibit various issues while making a financial decision. Some of the issues are a lack of self-control while making decisions, inconsistent decision-making that is out of harmony with preferences, selective attention, and unintentional social influence responses. For example, we can observe a lack of self-control when an individual decides to adopt a healthier diet but ultimately succumbs to the temptation of sweets because of the psychological strain associated with exerting self-control (Wilson, 2020). A recent report on Behavioral Economics published by the National Academies of Sciences, Engineering and Medicine (NASEM, 2023)[6] for policy impact and future directions, categorizes five behavioral patterns to test behavioral hypotheses and develop strategies to influence behavior. These five behavioral patterns are: (a) Limited attention and cognition, (b) Inaccurate beliefs, (c) Present bias, (d) Reference dependence and framing, and (e) Social preferences and norms.[7] We will discuss the first three of these behavioral patterns, which are very relevant in understanding how and why consumers use credit cards in a particular way. Further, we will make an attempt to propose some resolutions in order to overcome these behavioral issues to some extent. Let us now explore the first three behavioral patterns, which are crucial for our discourse.

Limited Attention and Cognition

The ability of individuals to consider and process the available information is very crucial in the decision-making process. However, individuals often only pay limited attention to the significant elements related to decision context and are not able to process all available information while making decisions (Kahneman, 1973; NASEM, 2023). Individuals may possess specialized knowledge within their respective domains of profession; nonetheless, it is possible that they may have limitations in understanding the fundamentals pertaining to other disciplines. For example, an individual with a professional background in software engineering may demonstrate proficiency in software development, yet she may face challenges in the realm of personal financial management due to lack of formal training in finance.

Let's discuss a simple example of limited attention in the context of credit cards. On cash withdrawals from credit cards, banks charge a relatively higher cash advance—transaction fee, subject to a minimum of ₹300–₹500, irrespective of the amount withdrawn. Usually, banks in India charge around 2.5~3.5% monthly interest on cash withdrawals from credit cards. This means whether a consumer withdraws ₹1,000 or ₹20,000, there will be a cash withdrawal fee of ₹500. To get a lower interest rate of 2.5%, consumers must withdraw a minimum amount of ₹20,000 or higher. Now, let us look at the recent statistics of cash withdrawals from credit cards. As per the RBI report for December 2024, the total cash withdrawal amount from credit cards was reported at ₹4,292 million ($ 50 million) (Reserve Bank of India, 2024). The average amount per withdrawal is approximately ₹5,290 ($60). This also suggests that any transactions up to ₹5,500 or below have attracted a fee of ₹500, which is approximately 10% or more (after adding interest) of the total withdrawal amount. In other words, although banks emphasize that they charge 2.5~3.5% monthly interest on cash withdrawals, when we apply the minimum applicable fee to the average withdrawal amount, the effective cost exceeds 10%, which is significantly higher. Nevertheless, there is a significant amount of cash withdrawals done with credit cards on a monthly basis, indicating that customers frequently overlook the higher percentage of fees associated with cash withdrawals from credit cards. So, the data clearly shows that individuals exhibit a limited level of attention towards the fees associated with cash withdrawals made using credit cards. This pattern reflects a cognitive process known as "mental accounting," in which individuals and households organize, evaluate, and track their financial activities in separate mental categories (Thaler, 1999). In case of credit card usage, consumers mentally separate purchases from bank fees and treat them as distinct categories, although these fees are also a part of their overall spending. This tendency can lead them to overlook the costs associated with credit card usage, such as interest charges and cash withdrawal fees. According to Kim et al. (2024), when individuals receive large monthly transaction statements containing a lot of information, they may experience cognitive overload (Fox et al., 2007), making it difficult to assess financial costs accurately. This can lead them to underestimate the financial burden caused by credit card fees and interest, resulting in overspending and higher debt accumulation.

These days, while shopping online, consumers can easily convert their credit card transactions into EMIs. Usually, banks charge a significant interest on EMIs. Consumers may opt to convert their transactions without carefully going through the interest rates and other conditions because of limited attention. Once consumers convert their credit card transactions into EMIs, banks restrict them from settling the entire outstanding balance at once, even if consumers express a desire to do so. Based on an individual's education and financial background, their decision-making capabilities may also vary. To meet urgent needs, people may use credit cards without carefully understanding the additional charges involved. Mullainathan and Shafir (2013) argue that people have limited attention when they do not have enough time to make a financial decision. They state, *because the focus on scarcity is involuntary, and because it captures our attention, it impedes* *our ability to focus on other things* (Mullainathan & Shafir, 2013, p. 41). Such imprudent use of credit cards can lead to substantial financial losses for consumers in the form of accrued interest and fees. In this way, “limited attention and cognition” is a serious problem that people may often face while using credit cards for day-to-day financial transactions.

Campbell (2016) suggests that consumers’ ability to accurately forecast their behavior with respect to a financial decision on borrowing and the consequential costs associated with the borrowing may be limited. According to the Consumer Financial Protection Bureau (2014), a significant portion of the revenue from interest and penalties generated by short-term loan products is attributed to a subset of borrowers who engage in repeated borrowing, leading to prolonged financial obligations. In the event when customers do not accurately predict their propensity for repeated borrowing, there is a possibility that they may significantly underestimate the costs associated with the first loan, such as the higher amount of interest and penalties, lower credit score and future ability to take a loan.

Inaccurate Beliefs

Another behavioral pattern within the domain of behavior influence is inaccurate belief. An inaccurate belief can be characterized as an overestimation of people’s positive behavior. People often overestimate their own positive behavior and fail to act on their intentions (Flyvbjerg, 2021; Mazar et al., 2018). For example, a study performed by DellaVigna and Malmendier (2006) shows that people who consider themselves enrolling in a gym overestimate their future attendance. According to their explanation, people overestimate their future self-control or their future efficiency. Similarly, another study by Polivy and Herman (2002) discusses the diet plan people who are overweight intend to follow. However, they fail to follow the plan for a long period since they are often satisfied with the immediate and temporary results. This study (Polivy & Herman, 2002) further shows that people often hold unrealistic expectations about self-change. People tend to believe they can achieve greater personal change than what is feasible, often underestimating the influence of cognitive biases and human limitations. Although these studies do not conclusively show that people are always over-optimistic or have unrealistic expectations, they do show that individuals often possess certain incorrect perceptions regarding their own circumstances and personal capabilities. These incorrect beliefs may arise due to a limited amount of attention as well (NASEM, 2023). Bounded rationality suggests that individuals develop inaccurate beliefs in decision-making due to cognitive constraints, incomplete information, and time limitations. As a result, they often rely on simplistic heuristics and may ignore complex calculations (Robb et al., 2015). In the context of credit card usage, individuals may overestimate their repayment capacity, leading to overuse of credit and accumulating debt beyond their financial means (Chawla & Mokhtari, 2025).

Let’s explore how inaccurate beliefs can affect the way people use credit cards in a particular way. According to Soll et al. (2013). *Many consumers misuse and mismanage their cards. They engage in impulsive buying, end up with items they do not need or perhaps even want, and spend more than they can* *afford.* According to their study results, *People misunderstand the relationship between monthly payments and payoff time when payments barely cover or fall short of interest charges* (p. 72). When consumers overspend on credit cards, they may consume a significant percentage of their monthly income, with the assumption that they would manage their remaining household expenses with the rest of their money, which may not be accurate. This type of overestimation may lead consumers into serious financial difficulties. Consumers using credit cards may often exhibit a high degree of optimism, presuming that they will pay off their credit card bills on time. However, this optimistic belief does not hold true for a significant portion of the customer group. According to a report published in July 2023 from TransUnion CIBIL, that maintains consumer credit information, for 90 days past due, the delinquency rate in India is 2.94%, which has increased by 0.66% in comparison with 2022. It simply means that 2.94% of credit card users do not pay their dues even after more than 90 days from their due dates. The 2.94% delinquency rate may appear low; however, when the whole volume of transactions is taken into account, the total default amount is over ₹4,000 crore. This rate is even higher for 30 days past due, which is about 5%. A similar trend is observed in the United States. According to a recent report from the Federal Reserve, consumer credit card delinquency rates have risen sharply since the pandemic, currently standing at 4.28% for accounts 30 days past due (Barnes et al., 2025). The point is that the delinquency rate due to inaccurate beliefs in terms of not paying the credit card bills on time does affect Sustainable Economic Development in a negative manner.

After the introduction of the UPI payment system, there was a decline in credit card usage because UPI apps directly debited funds from linked bank accounts, eliminating the need for credit. Additionally, UPI-based QR code payments have become more convenient for both users and merchants. However, a recent development now allows UPI apps to link with RuPay[8] credit cards, which enables seamless credit card transactions on UPI platforms. As a result, financial institutions are actively promoting these RuPay credit cards as "UPI wala card," which can be used on UPI apps. Consequently, there has been a significant increase in RuPay card transactions. This innovation has made it easier than ever for individuals to use credit cards for even the smallest everyday payments, such as purchases from tea stalls and vegetable vendors. This development encourages low-income groups to rely on credit and further raises concerns about overspending and overconsumption. Although not all payments involve overestimation, a significant number of cases may be attributed to it. Consumers incur substantial interest and penalties on their outstanding balances, and delays in settling the outstanding balance may lead to a decrease in the individual's credit score. Consequently, this form of overestimation eventually results in significant financial losses for the consumers in the form of interest and fees in the future, which in turn, restricts their ability to obtain future credit and escalates the costs associated with subsequent borrowing (Mazar et al., 2018).

Present Bias

Present bias refers to individuals' tendency to focus on the present results of their actions while ignoring future consequences. Consumers often exhibit an urge to prioritize immediate gains and defer losses to a later time. This behavior aligns with the concept of time inconsistency, which describes how an individual's preferences shift over time in a way that is inconsistent with their initial intentions. As a result, people may prioritize immediate rewards over long-term benefits, even if the long-term choice aligns better with their overall goals (Sayman & Öncüler, 2008). Some of the examples of such cases are: accumulating credit card debt, consuming unhealthy foods, and engaging in environmentally harmful behaviors (Hardisty et al., 2013; Takalo, 2019). Let us consider a scenario where the current weather conditions are characterized by high temperatures. When I come out of my office, I see a fancy ice cream shop. It is very tempting to eat ice cream even though I decided to reduce my sugar intake earlier. I regrettably neglect my pledge to reduce my consumption of sugar and indulge in an additional serving of ice cream. This scenario is a clear case of present bias, as I prioritized immediate gratification by indulging in my desire to eat ice cream rather than considering the long-term advantages of exercising self-control over my eating habits. In this way, individuals tend to focus on immediate rewards, often overlooking the long-term costs associated with their choices.

In the context of credit card usage, present bias has a significant relevance. The phenomenon of present bias is posited to heighten individuals' inclination towards immediate gratification, thereby leading to an escalation in borrowing behavior (Meier & Sprenger, 2010). When e-commerce websites and banks attract customers to use more credit with higher discounts and no-cost EMIs, generally, customers get influenced because of present bias. Banks provide more discounts on credit cards rather than debit cards. Furthermore, Banks also provide customers with a range of reward points based on their credit card usage. Consumers are enticed to utilize credit cards due to the appeal of increased discounts and the accumulation of reward points. Consumers, driven by present bias, tend to disregard future interest and costs in favor of immediate benefits, such as discounts and reward points.

People's ability to defer paying for their purchases is another factor contributing to their increased credit card spending. While using debit cards, when the amount is deducted immediately from one's bank account, it gives the customer a feeling of loss. There is a general tendency among people to avoid losses of any kind, whether it is losing something that stakeholders already own or making new decisions in which there is a probability of future loss. It is called loss aversion (Congdon et al., 2011; Kahneman & Tversky, 1979). Stakeholders do not consider credit card spending as an immediate loss because the amount is not deducted from their bank account immediately. Consequently, they tend to spend more on credit cards in comparison with debit cards. People may make some purchases on credit cards, which they could avoid if they use debit cards. Present bias, together with loss aversion, can lead consumers to overspending and irrational spending.

Such overspending and irrational spending may also result in overconsumption of various goods and services, which is also a challenging factor for sustainable economic development.

Nudging Approaches for Responsible Credit Card Use

This section aims to make use of a few insights from behavioral Economics to address the biases associated with credit card usage, which we have already discussed in the previous section. The aforementioned behavioral tendencies pose a significant threat to sustainable economic development. Hence, it is imperative that these concerns be addressed proactively. However, addressing these concerns may require implementing various regulations which may help the stakeholders in the prudent utilization of credit cards. It is in this context the role of policymakers comes into the picture. The role of policymakers is of utmost importance in formulating future policies that may promote economic sustainability. The subsequent part presents a set of recommendations for policymakers, these recommendations are proposed by referring to insights from behavioral economics and psychology. These recommendations aim at addressing the aforementioned challenges to a certain degree. In the context of public policy formulation, Bhargava and Loewenstein (2015) suggest three approaches which the public policymakers ought to follow:

1. Policymakers ought to move towards the simplification of the products and incentives of available choices.
2. Policymakers should aggressively protect consumers from behavioral exploitation by firms.
3. Behavioral economics should be leveraged to improve the design and implementation of policies based on traditional economics.

Our suggestion is that policymakers can refer to these three approaches, along with certain insights from behavioral economics and psychology, to formulate policies that may facilitate prudent credit card usage. Now, let us analyze a particular concept from behavioral economics called “Nudge.” Thaler and Sunstein (2008) coined the term “Nudge,” which generally aims to influence people’s behavior for their welfare. According to Thaler and Sunstein (2008), it is possible to influence people’s behavior in a predictable way if the choices available to the people are designed by carefully considering human behavioral patterns, including various heuristics and biases. One of their most well-known examples is Carolyn’s cafeteria. Carolyn supervises the cafeterias at many city schools where thousands of children eat every day. She has the option to arrange food in various ways. If she decides to keep healthy foods, such as fruits, at eye level, which makes fruits easy to get, while keeping away unhealthy items like cakes and potato chips, which make them difficult to get, it can increase the consumption of healthy foods and decrease the consumption of unhealthy ones. The intentional arrangement of food items in a certain way encourages the preference for particular choices, such as fruits, in this case (Thaler & Sunstein, 2008). In this way, *nudges are liberty-preserving approaches that steer people in particular directions, but that also allow them to go their own way* (Sunstein, 2014, p. 583). For instance, the FSSAI[9] promotes healthy eating through a number of programs, including the Eat Right Initiative, Safe and Nutritious Food at Home and *Aaj se thoda kum* (Little less from today) (Press Information Bureau, 2023).

In what follows, we will make an attempt to show that employment of certain "nudges" along with a few "mandates" can be helpful in formulating policies in order to address the issues related to limited attention and cognition, inaccurate beliefs, and present bias in the context of the usage of credit cards.

Resolving Limited Attention and Cognition

As mentioned in the section "Limited Attention and Cognition," limited attention and cognition of individuals can influence their behavior and the decisions they make while using credit cards. Human reasoning does not always come naturally. For example, we are all aware that we should not consume excessive quantities of sugar or fat. However, it can be challenging to stick to our intentions when we are exposed to both fruits and cakes (Wilson, 2020). In such a challenging scenario, a gentle push or a "nudge" might lead individuals to make the most rational decision that will make their lives better, as we have seen in the case of Carolyn's cafeteria.

In the context of credit card usage, to address the problem associated with limited attention and cognition, one can refer to the second approach proposed by Bhargava and Loewenstein (2015), which suggests that *Policymakers should aggressively protect consumers from behavioral exploitation by firms*. In the section "Limited Attention and Cognition," we discussed the issues and the possible financial loss the consumers might face because of cash withdrawals using credit cards. To facilitate prudent cash withdrawal using credit cards, a policy suggestion, as a nudge, can be implemented in the form of a "default option." Since "default option" is a very useful nudge (Thaler & Sunstein, 2021), consumers can be nudged by setting the default option on a credit card as "credit cards not activated for cash withdrawals" unless it is specifically requested by the consumer upon receiving the new credit card. However, if consumers need that facility, they should be able to activate it by calling customer service, login into one's account through bank's website or the respective bank's mobile app. When the default option is "not activated for cash withdrawals," customers will have to exert an effort in order to activate it. Similarly, when customers want to activate this option online, they can be informed explicitly about the applicable fees as a notification on the screen while activating this facility. If customers activate this option by calling the bank's customer care helpline numbers, the bank's executive/IVR can be directed to explain the applicable charges for cash withdrawals. This nudge in the form of a "default option" and detailing the customers regarding the applicable charges for cash withdrawals may facilitate the consumers to use the option of withdrawing cash using credit cards only in the event of an emergency cash requirement, and address the issue of limited attention and cognition to an extent.

Thus, policies can be suggested requiring banks to clearly state the interest rate and minimum fees charged for cash withdrawals while activating this service. In addition, it can also be suggested to banks that relevant fees and interest rates may be displayed on ATM screens right after the amount, to be withdrawn using a credit card, is entered. While displaying the fees and interest, the default selected option can be "disagree," which will mean that the transaction will be declined unless the customers actively choose the "agree" option for the payment of applicable fees and interest and that will proceed to complete the transaction. Banks may be reluctant to undertake such moves due to the potential negative impact on their interest income. However, in order to safeguard the interests of consumers and *aggressively protect consumers from behavioral exploitation by firms*, it is necessary for policymakers to establish regulations of this nature. In this way, customers can be nudged to use credit cards in only needy situations so that they can avoid the burden of paying high fees and interest for such cash withdrawals, which are not of an emergency nature. By implementing these nudging techniques in the form of regulations, it is possible to reduce aggregate credit card debt and a subsequent decrease in the default rate, which may eventually lead to economic sustainability.

Resolving Inaccurate Beliefs

During our discussion on the issue of inaccurate over-optimism in the section "Inaccurate Beliefs," it was observed that individuals might have difficulties in meeting their credit card bill payment deadlines. The data show that the current credit card default amount is over ₹4,000 crore ($459 million). This scenario illustrates a tendency of individuals to engage in irrational decision-making with respect to the usage of credit cards, which subsequently leads to adverse financial consequences. Within the contemporary digital landscape, individuals are consistently exposed to a variety of advertisements and promotions, which exert a significant influence on their inclination to use credit cards for various purchases. Therefore, in order to safeguard consumers who may be careless to exercise caution in the usage of credit cards, it is imperative that adequate regulations be employed in order to actively encourage the prudent utilization of credit cards, thereby ensuring sustainable economic development.

Competent authorities can encourage responsible credit card usage among consumers by employing various strategies, such as asking e-commerce platforms to generate pop-up notifications and advertisements to nudge customers. These notifications and advertisements can display awareness messages along with a few relevant statistics related to credit card default rates and so on. When these pop-up notifications appear precisely at the moment of purchase, consumers may be nudged to reconsider their decision. Policymakers can also propose regulatory measures pertaining to banks, with the aim of highlighting the interest rates imposed on customers in relation to the principal amount in case if customers convert their transactions into EMIs or fail to pay their bills within the deadline. This objective can be achieved by ensuring that bank statements clearly present the total interest paid by a customer on a monthly and annual basis.

In order to mitigate payment delays, regulatory bodies such as the RBI can employ the first strategy proposed by Bhargava and Loewenstein (2015), which suggests that “Policymakers ought to move towards the simplification of the products and incentives of available choices.” Currently, Indian banks issue credit cards without a bank account, as the credit cards work independently from the bank account. Typically, customers possess a savings account with a bank for their different banking needs. As of 2021, the World Bank’s Global Findex Database reports that 78% of Indians possess a bank account (Demirgüç-Kunt et al., 2022). Therefore, when customers apply for a new credit card from a different bank, they may be reluctant to open a new savings bank account due to the hassle of managing several accounts. At the same time, consumers have the option to make credit card bill payments using their other pre-existing bank accounts. However, against the current system, a suggestion is that RBI may implement a mandatory requirement for individuals to have a savings bank account with the same bank that issues their credit cards. Possible advantages of this regulation are as follows:

1. First, an automatic deduction of credit card bill payment from the savings bank account on the due date. Obviously, the customers will be required to maintain a minimum balance in their savings bank account in order to facilitate the use of these funds for automated payment of credit card bills. Occasionally, consumers who possess a savings account with one bank and a credit card with another bank may inadvertently forget to make their credit card bill payments. In such a scenario, having a savings account at the same bank will also address this problem with the help of an automatic bill payment feature.
2. Second, we can have a simple and efficient credit card bill payment system if all credit card customers have savings bank accounts with the respective banks that have issued them the credit cards. Credit card bill payment will be so simple if the auto-debit feature is active. In case the customers are unable to maintain a balance sufficient to settle their credit card bill, banks may be suggested to undertake appropriate measures such as reducing credit limits or implementing usage restrictions, which will eventually reduce the credit card default rate.
3. Third, this regulation will also allow banks to assess the financial health of their customers and subsequently extend credit based on this evaluation.

While it may appear to be a drastic recommendation, this recommendation will eventually benefit customers in the long term. These guidelines may perhaps mitigate some of the challenges, such as overestimation and mismanagement of credit cards that happen due to inaccurate beliefs to a certain degree, which will eventually steer to economic sustainability.

Resolving Present Bias

During the course of our discussion in the section “Present Bias,” we have seen that customers often have a tendency to choose immediate gains and postpone losses because of present bias. Within the domain of credit card usage, there are several examples of present bias, including the urge to prefer credit cards over debit cards and the tendency to convert transactions into EMIs. EMIs offer the opportunity to postpone the repayment of credit card dues. This facility can be helpful if it is utilized prudently in times of need. Nevertheless, many customers choose this alternative despite having the necessary cash due to the appealing nature of EMIs. Financial institutions also engage in extensive promotion of EMIs on credit cards. Customers are provided with the option to convert their transactions into EMIs while making payments using credit cards. In addition to that, financial institutions also often encourage their customers to convert their transactions into EMIs by means of SMS notifications or telephone communication. The option to convert transactions into EMIs appears to possess considerable appeal, as it allows customers to defer their payments. The phenomenon of present bias, when coupled with limited attention, can have significant implications on financial transactions using credit cards since it may result in customers disregarding the costs associated with interest. Currently, there are no existing limitations on the number of transactions that can be converted into EMIs. In this context, policymakers are advised to use the third strategy proposed by Bhargava and Loewenstein (2015), which suggests that "Behavioral economics should be leveraged to improve the design and implementation of policies based on traditional economics." A suggestion is that the criteria regarding EMI conversions may be modified in order to reduce the effects of present bias. Regulations can be formed to stipulate that a transaction can only be converted into EMIs if the transaction amount exceeds a specific threshold, such as ₹10,000 or ₹15,000. Policymakers can also form policies regarding the maximum number of transactions that can be converted into EMIs in a month. By adopting this approach, consumers will be more careful while converting their transactions into EMIs. Many users find it appealing to convert small sums into EMIs as it allows them to defer immediate payment. However, as these amounts accumulate along with interest, they can become a substantial sum that could lead to challenges in repayment. In the event that a minimum threshold for EMI conversion is implemented, users will not receive prompts to convert their small expenditures into EMIs. When there is no possibility of EMIs, it might prompt the customers to think twice before making a transaction using credit cards. Implementing these strategies may help customers to make appropriate use of the EMI facility on transactions using credit cards. Prudent usage of EMI facility on credit card transactions will further lead to a reduction in default amount of credit card debts, which will also contribute to the attainment of sustainable economic development.

Research Contribution and Implications

This research contributes to the existing literature by providing a behavioral economics perspective on credit card usage in India. Often, this topic has been primarily analyzed through traditional economics, which often overlooks the psychological factors influencing consumer decision-making. By integrating behavioral insights, the study deepens the understanding of how cognitive biases lead to overspending and overconsumption. The findings have practical implications for multiple stakeholders. Regulatory bodies can leverage these insights to design credit policies and implement nudging strategies to promote sustainable economic behavior. Policymakers can utilize the recommendations to develop financial awareness among consumers in order to address common cognitive biases and improve financial stability.

However, a limitation of this study is that it primarily focuses on credit card usage within the Indian context. Although these findings may be relevant to other economies with similar financial behaviors, they may not be directly generalizable to different cultural and economic environments. Furthermore, the analysis is primarily based on conceptual reasoning and existing literature, which may limit the generalizability of the findings. Additionally, consumer behavior is influenced by several socioeconomic factors, including income levels and financial literacy of individuals. Future research can address these limitations by conducting empirical studies and cross-cultural comparisons. Proposed nudging approaches can be empirically analyzed to validate their effectiveness and for further improvement. Moreover, future research could also explore the ethical considerations surrounding nudging interventions to ensure these strategies align with consumer autonomy and financial welfare.

Conclusion

This article analyses consumer behavior patterns in the context of the usage of credit cards in India. The article highlights the concerns associated with the usage of credit cards due to various biases. The study uses insights from behavioral economics and psychology to examine biases such as limited attention and cognition, inaccurate beliefs, and present bias. It also explores how these biases influence customers to use credit cards in ways that may lead to financial mismanagement. Additionally, the article proposes various nudges that banks and e-commerce platforms can implement to address these challenges related to the usage of credit cards. In that manner, financial institutions and merchants can also proactively contribute towards sustainable economic development. The study also offers a few policy recommendations that policymakers can incorporate in order to foster the prudent usage of credit cards. In a nutshell, there exists a pressing necessity to enhance customer awareness regarding the prudent usage of credit cards since it is a crucial factor in the promotion and attainment of sustainable economic development. Hence, understanding consumer behavior and implementing proactive measures to prevent financial risks that may negatively affect sustainable economic development are essential steps toward achieving this goal.

Acknowledgments

We are sincerely grateful to Dr. Bijoy Boruah, Dr. Amitash Ojha, and Dr. Nadeem A. Rather for their valuable insights and constructive discussions.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

Notes

1. RBI Bank-wise ATM/POS/Cart statistics, https://www.rbi.org.in/Scripts/ATMView.aspx
2. Federal Reserve Payments Study, https://www.federalreserve.gov/paymentsystems/fr-payments-study.htm
3. https://economictimes.indiatimes.com/industry/banking/finance/credit-card-default-rises-to-rs-4072-crore-in-fy23/articleshow/102535875.cms
4. The 17 Goals | Sustainable Development (un.org) https://sdgs.un.org/goals
5. Muhammad Yunus received the 2006 Nobel Peace Prize because of his efforts with the Grameen Bank in Bangladesh. He is internationally recognized for his work in poverty alleviation and the empowerment of poor women.
6. A report on Behavioral Economics: Policy Impact and Future Directions from National Academics of Sciences, Engineering and Medicine in 2023, published by National Academics Press, Washington, DC. From now on, we will use NASEM 2023 as an abbreviation.
7. A disclaimer here is that this list is not exhaustive, and there may be additional behavioral patterns that are not discussed here.
8. RuPay is a payment system developed by the National Payments Corporation of India (NPCI) to facilitate electronic transactions through debit, credit, and prepaid cards.
9. Food Safety and Standards Authority of India, Ministry of Health and Family Welfare, Government of India.

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