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THE EVOLUTION OF THE BRAZILIAN DIGITAL PAYMENT METHODS MARKET
A evolução do mercado de métodos de pagamento digital brasileiro

Eryka Eugenia Fernandes Augusto[1], Gabriela Conde Marcellino[1], Gilmara Lima de Elua Roble[2], Luis Fernando Pacheco Pereira[3], Fábio Rogério de Morais[4]
[1] University Center of FEI, [2] Cruzeiro do Sul University, [3] University Anhanguera of São Paulo, [4] Federal University of Rondônia
Email: Eryka.augusto@fei.edu.br, gabicondde@gmail.com, gilmararoble@gmail.com, luis@greenenforcement.com.br, moraisfabiobh@gmail.com

ABSTRACT

This paper aims to understand the evolution of the Brazilian digital payment methods market. Thus, it is intended to present to the reader an overview of the characteristics and configurations of the payment arrangements sector, since the beginning of the popularization of cards, until the most recent movements, given the new retail configurations, which have been established in online environments, called e-commerce. Furthermore, it is intended in this work, using the qualitative research, to identify the main motivations that encourage consumers to choose the payment method used in online shopping. It was possible to conclude that credit card is the payment method that most motivates consumers in e-commerce.
Keywords: Credit card; *E-commerce*; Digital payment methods.

A EVOLUÇÃO DO MERCADO DE MÉTODOS DE PAGAMENTO DIGITAL BRASILEIRO
The evolution of the brazilian digital payment methods market

Eryka Eugenia Fernandes Augusto[1], Gabriela Conde Marcellino[1], Gilmara Lima de Elua Roble[2], Luis Fernando Pacheco Pereira[3], Fábio Rogério de Morais[4]
[1] University Center of FEI, [2] Cruzeiro do Sul University, [3] University Anhanguera of São Paulo, [4] Federal University of Rondônia
Email: Eryka.augusto@fei.edu.br, gabicondde@gmail.com, gilmararoble@gmail.com, luis@greenenforcement.com.br, moraisfabiobh@gmail.com

RESUMO

Este artigo tem como objetivo compreender a evolução do mercado brasileiro de meios de pagamento digital. Assim, pretende-se apresentar ao leitor um panorama das características e configurações do setor dos meios de pagamento, desde o início da popularização dos cartões, até aos movimentos mais recentes, dadas as novas configurações de retalho, que se estabeleceram no online. ambientes, chamados de e-commerce. Além disso, pretende-se neste trabalho, por meio da pesquisa qualitativa, identificar as principais motivações que estimulam os consumidores a escolherem o meio de pagamento utilizado nas compras online. Foi possível concluir que o cartão de crédito é o meio de pagamento que mais motiva os consumidores no e-commerce.
Palavras-chave: Cartão de crédito; Comércio eletrônico; Métodos de pagamento digital.

ERYKA EUGENIA FERNANDES AUGUSTO, GABRIELA CONDE MARCELLINO, GILMARA LIMA DE ELUA ROBLE, LUIS FERNANDO PACHECO PEREIRA, FÁBIO ROGÉRIO DE MORAIS

INTRODUCTION

In recent decades, important economic measures, taken through monetary policies that resulted in inflation control (Oliveira, & Turolla, 2003) and by expanding the credit granted to families (Biancarelli, 2014), have encouraged individuals to adhere to credit products, resulting in the growth in the use of cards to the detriment of the declining use of bank checks (BCB, 2019). Due to the growth of this market, important regulatory measures were taken, such as the breaking of exclusivity contracts between acquirers and flagships, making the payment methods industry more innovative and competitive and reducing entry barriers for new players (Perez, & Bruschi, 2018).

In parallel to these changes, the growth of e-commerce has occurred in recent years and one of the main challenges linked to the popularization of online retail was the development of platforms that enabled remote payment (SEBRAE, 2012). Payment gateways emerged as a solution to the challenges linked to the non-face-to-face processing of financial transactions, enabling payment via cards, bank slip and bank transfer (SEBRAE; 2012).

Given the scenario of popularization of credit cards, especially regarding their use in digital environments, it becomes of great importance to understand the motivations that encourage individuals to choose the payment method in online shopping.

The main objective of this paper is to understand the evolution of digital payment methods in Brazil, through qualitative exploratory and descriptive research, using a structured questionnaire for data collection, in order to answer the following research problem: What are the motivations that influence individuals in choosing the payment methods for online purchases?

The structure of the article is composed of a bibliographic and theoretical survey displayed in items 2, 3 and 4, addressing the themes: The Brazilian economy in the last decades; The evolution of the payment methods market in Brazil; and The digital age: e-commerce in Brazil. Item 5 discusses the research methodology used and the results obtained are presented in item 6.

1 THE BRAZILIAN ECONOMY IN THE LAST DECADES

1.1 Inflation stabilization and credit expansion in Brazil

Brazil's economic growth has been a reflection, over the past 30 years, of important economic measures taken, which began in the 1990s, mainly through monetary policies that resulted in inflationary control (Oliveira, &Turolla, 2003), and later, through credit expansion (Biancarelli, 2014). According to Biancarelli (2014), the expansion of the consumer market was a preponderant factor for the dynamic growth of the national economic activity. According to the Brazilian Institute of Geography and Statistics (IBGE), the Brazilian GDP jumped from R$277bi to R$1.7tri between 2000 and 2020 (IBGE, 2020).

One of the main events that enabled the development of the Brazilian economy since the 1990s was the adoption of the Real Plan. The objective of the monetary policy was to control the inflationary process of the national currency. According to the BCB (2006), low inflation is a precondition for countries to grow in a sustainable way, and international experience shows that price stability is a fundamental factor for the full development of economies.

In 2003, policies that encouraged an increase in the concession of credit through the National Financial System (SFN) to individuals and companies also contributed to the increase in consumption. According to the theory, when there is a real increase in purchasing power, whether it comes from increased wages or credit release, there is an increase in family's consumption, which, consequently, causes an increase in production levels. Between the years 2000 and 2010, the proportion of the total balance of credit operations in the country in relation to the national GDP jumped about 17 percentage points, according to Banco do Nordeste (2012). In 2017, the percentage of adults who had access to some credit product was 44%, according to BCB (2017).

Given the inflation control scenario, a real increase in the purchasing power of Brazilian families' salaries could be observed, which resulted in increased consumption. The increase in credit concessions was also an important aspect for the popularization of payments via credit cards in the country, in consecutive years (Banco do Nordeste, 2012).

1.2 Bankarization of the population and Brazilian Microfinances

According to Alves and Soares (2006), in June 2003, measures were announced that aimed to expand the supply of services in microfinance, the main ones were: the possibility of opening simplified accounts - which encouraged the bankarization of the lower classes of the population; the stimulus of credit supply based on the amounts collected in demand deposits; and the formatting of credit cooperatives of free association.

Although Brazil still has significant numbers of citizens without access to a bank account, the number of accounts created has grown more than the population. The Brazilian banking network registered, between 2001 and 2005, an increase of 24% in the number of demand deposit accounts (Alves, & Soares, 2006). According to Barone and Sader (2008), according to data made available by Central Bank of Brazil, the SFN registered an increase of 57% and 39% in the number of current and savings accounts, respectively, between the periods of 2001 and 2007.

According to the resolution 3,104 of the Central Bank of Brazil (BCB), of June 2003, a series of strategies were established to facilitate the access of the low-income population to the SFN. The resolution started to allow the opening of special demand deposit accounts, allowing the poor to have easier access to financial products and services (BCB, 2003). The bankarization of the lower classes was a fundamental factor in the popularization of the electronic payment methods in Brazil (Barone, & Sader, 2008).

2 THE EVOLUTION OF THE PAYMENT METHODS MARKET IN BRAZIL

2.1 Introduction to the Card Industry

In recent years the BCB has taken important steps to make the industry more competitive, transparent and innovative. Due to the increasing popularity of the electronic payment methods, such as cards, the BCB's interventions have been important to inhibit market entry barriers, as well as cartel practices and anti-competitive structures (Perez, & Bruschi, 2018).

According to a study conducted by Guedes *et al.* (2011), the electronic payment methods market differentiates itself between two structures: the 4-party system, also known as the open scheme, and the 3-party system, also known as the proprietary brand scheme, or closed scheme. The main difference between the two schemes is that in the 4-party system, a single flag may be issued by several banks, as well as have its transactions processed by the technologies of several acquiring companies. In the 3-party system, the flagships are responsible for all industry activities, without the participation of banks and acquirers. According to Gudes *et al.* (2011), the 4-party system is more complex and brings more security to the market, since banks have sophisticated anti-fraud systems, capable of understanding the consumer's profile through historical purchases and payments, and thus identify payments that deviate from the standard.

According to Guedes *et al* (2011), the transactions performed within the open system can be simplified by the following scheme:

1.The cardholder uses his card at the Point Of Sales (POS) of the commercial establishment (CE), making a transaction;

2.The POS collects card data, such as card number and expiration date;

3.The consumer's and the merchant's data are sent to the acquirer;

4.The acquirer identifies the flag used and passes the information to the flag;

5.The flag confirms the reported data and passes the information to the issuer;

6.The issuer confirms the reported data and performs a consumer credit analysis. Finally, it informs the acquirer to continue processing the transaction;

7.The acquirer processes the transaction. If the payment was made by debit card, the amount transacted will be debited from the merchant's current account within two business days. In case of payment by credit card, the amount is debited every 28 calendar days, depending on the number of installments.

For the closed system cases, the activities performed by the flag, issuer and accreditation are performed by a single company. According to the Retail Payments and Card Statistical Data Report in Brazil, made available by BCB (2019), the total number of flags participating in the 3-party scheme (also called the proprietary brand scheme) reflected, in 2019, 6% of the credit card market and less than 1% of the debit card market, reflecting the predominance of the 4-party scheme in the means of payment market.

For Guedes *et al.* (2011), payments via electronic methods enable greater government control and supervision, as well as providing banks with more information about the consumption pattern of users, compared to payments via bank check and physical currency. In summary, the card industry generates positive impacts on the Brazilian economy because it encourages the formalization of businesses, reducing the occurrence of tax evasion, resulting in higher tax collection. Thus, it is inferred that cards bring more security, transparency and ensure less vulnerability.

2.2 Two Sided Market from the card industry perspective

Different from traditional markets, the Two Sided Markets (M2L) arise in the middle of the globalization process and present a specific structure of operation. These markets are characterized by the interdependence of two or more consumer groups, the presence of indirect externalities, and the existence of a platform that serves as an intermediary between consumers. In these markets, each of the sides involved obtains value through the interaction of the other (Armstrong, & Wright; 2007).

Rochet and Tirole (2004) understand the electronic payments market as an M2L, since there is the participation of two interdependent groups of end users - cardholders and merchants. The interaction in the electronic payments market occurs because cardholders wish to settle their financial transactions electronically, an action that encourages merchants to accept electronic payments, with both agents being final consumers of a single platform, formed by a set of interdependent agents - acquirer, issuer and flag.

According to a study conducted by Guedes *et al.* (2011), the stimulating action, understood as an indirect externality, which resulted in the broad adherence of commercial establishments (CE) to contract services from acquiring companies through Point Of Sales (POS) rentals, resulted in the increase in card users, which derived from the democratization of bankarization, already discussed in this paper. Even the electronic payment method is more expensive (than the traditional ones) for the commercial establishment, due to the POS rental costs and the fees charged by acquirers for each transaction, the pressure from the cardholders, who want to pay by electronic methods, influences the adoption of this payment method by the merchant market.

The number of cards issued between 2010 and 2019 illustrates this growth. For the credit cards, the quantity jumped from 164,691 to 222,498 and for the debit cards, the quantity went from 227,784 to 348,808. As for POS terminals installed in the Brazilian commercial park, the growth in the same period was from 3,014 to 10,519 (BCB, 2019).

2.3 The card market in numbers

According to BCB (2019), among the payment modalities, the card is the instrument that has grown the most in recent times. Having its widespread popularization in recent years, cards have replaced the two main payment modalities used by Brazilians, namely, bank check and bank slips. In addition to replacing the payment in cash in purchases made in person, the card is currently the main payment method used in purchases made in online environment, via e-commerce (EBIT, 2019).

The share of the main payment methods in total of transactions has changed significantly between the 2010 and 2019 periods. While credit cards increased from 33% to 55% in relative share, bank checks lost share, from 9% to just 1% (BCB, 2019).

2.4 Market Movements

According to Perez and Bruschi (2018), the card market, in Brazil, began in the 1960s and increased in popularity in the 1990s. Between the 1990s and the beginning of the 21st century, the increase in the number of debit and credit card users was mainly due to the increase in credit concessions by the SFN, as well as the increase in the portion of the population with access to a bank account. Over the past ten years, the BCB (2019) has recorded an increase of about 28% and 31% in the issuance of credit and debit cards, respectively. In December 2019, the number of credit and debit cards issued in the country exceeded 200 million and 348 million, respectively.

According to Perez and Bruschi (2018), in 2008 the Brazilian acquiring market reflected a verticalized duopoly between the flagships Visa and Mastercard, which together held about 90% share in the issuance of debit and credit cards. Known at the time as the dual-brand market, the sector's configuration did not encourage competitiveness due to the intricate vertical relations between the brands (Visa and Mastercard) and the acquirers (Rede and Cielo). The industry had strong evidence of an anticompetitive scenario practiced by these groups. By acting at all ends (flags, acquirers and issuers), they were able to control financial margins and costs, in addition to creating barriers for the client's migration to the competitor.

These intricate vertical relations were based on exclusivity contracts between flags and acquirers. The acquirer Rede (former Redecard) had an exclusivity contact with the Mastercard brand and the acquirer Cielo (former Visanet) had an exclusivity contract with the Visa brand. This configuration reflected strong barriers to entry for new acquirers in the sector, since the these brands held practically all the cards issued. Moreover, the exclusivity contracts forced merchants to hire the services of both acquirers if they wanted to accept payments of Visa and Mastercard cards. Given the scenario established at the time, the Brazilian state began to make a series of interventions in this industry in order to bring competitiveness to the market (Perez, & Bruschi, 2018).

Perez and Bruschi (2018), through a considerable analysis regarding the government measures taken to deal with the issue of not encouraging competitiveness, understand that the most relevant change applied so far to boost the means of payment industry was the break of the exclusivity contract between flagships and acquirers, in force as of 2009. Through Law 12,865/2013, a regulatory framework for payment arrangements was inaugurated in Brazil in 2013, regulating the electronic payment methods industry. Since then, the BCB has been imposing a series of obligations, aiming at greater transparency and competitiveness among players. Perez and Bruschi (2018) also highlight Law 13,455/2017 as an important tool in promoting competitiveness in the market, since it establishes the possibility of price differentiation between different payment methods, favoring mainly the shopkeepers, who gain bargaining power to negotiate.

The market share of the main flagships operating in Brazil between the periods 2010 (market operating through exclusivity agreements) to 2019 (market operating through competitive practices) varied as follows: Mastercard went from 46% to 54%, Visa went from 44% to 31%, and the others went from 10% to 15% share (BCB, 2019).

In turn, the debit card market showed greater sensitivity to the regulatory changes applied. The Visa flag fell from 62% to 27% share. Mastercard remained stable (from 35% to 34%) and the other flags had a large growth in relative share, jumping from 3% to 39%, explained mainly by the entry of the Elo flag and the popularization of the Amex flag, according to data reported by BCB (2019).

The acquirers that dominated the market before the regulations imposed - Cielo and Rede - still remain with significant participation in the sector. The lowering of entry barriers caused by the various regulations by the competent agencies facilitated the entry of new acquirers in Brazil, however, these players have not yet achieved significant participation in the industry.

3 THE DIGITAL AGE: E-COMMERCE IN BRAZIL

Before discussing the commercial approach related to the online environment, it´s necessary to understand some aspects linked to the internet and its use in Brazil: currently, about 79% of Brazilian families had internet access, with the smartphone being the main channel (IBGE, 2018).

Albertin (2010) defines e-commerce as:

"E-commerce is the realization of the entire value chain of business processes in an electronic environment, through the intense application of communication and information technologies, meeting business objectives. The processes can be carried out completely or partially, including business-to-business, business-to-consumer and intra-organizational transactions, in a predominantly public infrastructure of easy and free access and low cost" (Albertin, 2010, p. 03).

As for the commercial relations carried out on the Internet, 4 main types of business are observed, namely: B2B (Business to Business), which occur when the consumer and the supplier are legal entities; C2B (Consumer to Business), which occur when the consumer is a legal entity and the supplier is an individual; B2C (Business to Consumer), which occur when the consumer is an individual and the supplier is a legal entity; and C2C (Consumer to Consumer), which occur when the consumer and the supplier are individuals (Catalani et al., 2008; Scandiuzi, Oliveira, & Araújo, 2011).

Concerning the B2C virtual market, e-commerce has shown significant results regarding its growth in number of transactions and revenues, according to data made available by EBIT (2020). The total number of consumers in this modality grew from 18.9 million in the 1st semester of 2014 to 41 million in the 1st semester of 2020 (EBIT, 2020).

Given the growth of Brazilian e-commerce, digital payment solutions have emerged driven by the new way of consuming. According to SEBRAE (2012), one of the main challenges arising from the popularization of e-commerce was the development of platforms that enable remote payment.

Digital payments are all those made over the internet, allowing consumers to pay wherever they are and shopkeepers to receive payments safely (SEBRAE, 2012). They are also inserted in the M2L configuration, since each of the sides involved (consumer and retailer) obtains value through the interaction with the other (Armstrong, & Wright, 2007).

"Two-sided markets serve distinct groups of users, with interdependent demands. Thus, the platform's action can increase the overall value of transactions, both for the platform itself and for all agents involved in the market. With the increased demand on one side of the market, a platform can increase its value for agents on the other side through the presence of indirect network externalities. This represents the creation of a real social benefit" (Britto, 2018, p. 138).

The challenges encountered in digital markets were linked to the need to have a platform that integrated businesses established in virtual environments with acquirers, since the processing of transactions via cards would not be performed in person, through POS terminals. In addition, there was a need to encrypt the data to bring more security to the consumer. Given this scenario, a new player enters the payment methods market, the so-called payment gateways. (SEBRAE, 2012)

Payment gateways emerge as a solution to the challenges associated with the non-face-to-face processing of financial transactions. They function as intermediary platforms between the acquirer and the online store. In addition to payment via cards, as the acquirers do, payment gateways also include payment services via bank slip and bank transfer. (SEBRAE; 2012)

These platforms are considered fundamental to virtual businesses because, in addition to providing payment services, payment gateways also include anti-fraud systems (SEBRAE; 2012)

All these services bring several competitive advantages to businesses, since gateways present themselves as complete billing and payment solutions and, by including anti-fraud service, increase the reliability and security of users' data.

According to data made available by EBIT (2019), the credit card is the most used way for online purchases, reflecting 67% of total online transactions, followed by bank slip (19%), store cards (6%), and others (8%) (EBIT, 2019).

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Regarding the payment method, according to data made available by EBIT (2018), about 52% of online consumption payments are cash, and 48% installment payments.

According to statistical data made available by BCB (2019), credit card non-face-to-face payments (digitally) represented 94% of total face-to-face transactions in 2010. In 2019 this percentage was 76%. The difference was due to the use of non-face-to-face ways, which grew from 1% to 24% share in the same period. Also according to BCB (2019), the growth of digital payments via credit cards showed a growth of 286%, a reflection of the popularization of e-commerce in the country.

4 METHODOLOGY

This study was based on an exploratory and descriptive qualitative research, with the objective of understanding how the market for digital payment methods has evolved. For Gil (1989), descriptive research is that which aims to analyze the characteristics of certain groups, phenomena, or to establish relationships between variables. As far as descriptive research is concerned, some of them are similar to exploratory research, because although their objectives are characterized as descriptive, they can also be the first stage of a broader investigation. In this first stage, quantitative data collection techniques are not typically applied, giving emphasis to qualitative analyses. According to Gil (2002), qualitative analyses depend on a set of factors, which can be summarized by the nature of the data collected, the sample size, the research instruments and the theory that guides the investigation. For this reason, qualitative analysis processes are less formal, but less simple than those of a quantitative nature. Thus, the applied research was conducted in order to answer the research question that this study proposes, namely, what are the motivations that influence individuals in choosing the payment method when purchasing online?

The research design is a survey. According to Gil (2002), the most important element in identifying a research design is the procedure chosen to collect data. Surveys are those in which data are collected by directly questioning people whose lifestyles are to be known and analyzed. According to the author, the questionnaires must translate the specific objectives, and for this reason the questionnaire's construction must be elaborated in a way that meets the studied object.

In view of the objectives to which this work proposes, questions were designed to reveal the individuals´ actions. The question form chosen was the multiple choice one with an open field option, since the open field options allow insights, a characteristic of exploratory research. According to Gil (2002), closed and multiple-choice questions are highly recommended for descriptive research, since they offer a relatively large number of possible answers without making it difficult to tabulate and analyze the data.

As for the content of the questions, questions about facts were used for the cases in which the purpose was to discover the sample studied, such as: gender; age; salary range; professional situation; and level of education. For the questions asked with the purpose of answering the specific objectives, questions about beliefs and action patterns were used (Gil, 2002). According to the specific objectives, the content questions of beliefs and action patterns were designed so that they would provide data and insights to answer the specific objectives. Table 1 shows the questions asked through the survey questionnaire, relating each one to a specific objective, distributing them into 4 categories.

Table 1 - Specific goals and related questions

Category	Specific Goal	Related Questions
1	Understand the motivations that lead to the rejection of use of cards	Do you have credit card?
		If you do not have a credit card, what is the reason?
2	Understand the frequency of online shopping	According to how often you shop online, choose the best alternative
		According to your internet consumption profile, choose the alternative that best describes you
		When shopping online, do you prefer to pay via smartphone or computer?
3	Understand the motivations that lead to the adoption and rejection of the use of bank slip bank slip in online purchases	When shopping online, do you prefer to pay via bank slip?
		When shopping online via bank slip, check one or more alternatives that describe you.
4	Understand the motivations that lead to the adoption and rejection of the use of cards in online shopping	When shopping online, do you prefer to pay using credit card?
		When shopping online using credit card, check one or more alternatives that describe you

Source: prepared by the authors, 2021

As for the order of the questions, Gil (2002) reports that problems can be observed due to sudden changes in the theme asked. Therefore, the questions were distributed in the questionnaire following a logical structure, defined by the authors to minimize the occurrence of such a problem.

The questionnaire presented an introductory text, justifying the research and presenting the confidentiality agreement to the respondents. The survey was carried out via an electronic questionnaire, distributed through digital platforms. The need to collect the data only in a virtual way was due to the public entities' guidelines for the practice of social isolation, derived from the new COVID-19 pandemic. Because it deals with data of private actions of individuals, during the survey the respondents' identities were preserved. According to Festinger and Katz (1974), data analysis should not be conducted in a way that would allow the identification of respondents, especially in cases where individuals were informed that their privacy would be maintained.

The questionnaire was distributed to residents of the São Paulo metropolitan area, with a sample of 122 respondents. The sampling procedure was carried out through a non-probabilistic sample, by convenience. According to Schiffman and Kanuk (2000), in convenience samples, the researcher selects members of the population by accessibility, in a non-probabilistic manner. According to Vergara (2004), the samples by accessibility (or convenience) do not follow a statistical procedure, because the sample population is selected for the ease of access to it. Since it is only distributed electronically, the respondents were oriented and instructed as to the use of the platform in which the survey was conducted. For cases in which the respondents did not have access to the Internet or did not have skills in using smartphones and computers, the survey was conducted in an interview format, so that the interviewer (researcher) asked the respondents the questions and filled out the form according to the answers declared. The choice of distribution media - WhatsApp, E-mail, LinkedIn, and Instagram - was employed with the purpose of accessing a sample as diverse as possible.

The survey was built on the virtual platform Google Forms and the tabulation of the data presented was organized in an Excel spreadsheet. Thus, it was possible to perform the analysis of the data obtained through the methods of information crossing, triangulation and percentage analysis.

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5 PRESENTATION OF RESULTS AND DISCUSSION

According to Yin (2016), in order to have a rigorous data analysis, it is necessary to be cautious about the accuracy of the data; the thoroughness of the analysis; and the recognition of possible undesirable biases. According to the author, qualitative analyses can result in processes that require the manipulation of numerous texts and for this reason should not be unregulated. Below, analyses of the results obtained for each of the specific objectives that this work proposes to answer will be displayed.

5.1 Category 1 - Reasons leading to the rejection of use of credit card

In the questionnaire two questions were addressed so that later on, in the analysis of the results, they were used to investigate the respondents' motivations as to the adoption and rejection of the use of credit cards, whether in the face-to-face or non-presential purchase modalities. The main objective in asking the questions in category 1 is the need to identify the characteristics of credit cards that are not approved by the consumer.

Of the total respondents, 9.8% reported not having a credit card. The main reasons given by respondents for not having a credit card are: "I have no income and/or I'm unemployed" (33.3%); "I don't like it. I prefer to keep my finances in debit" (25.0%); "I don't like it. The annuity costs are not worth it" (25.0%); "My bank did not approve my access to it" (8.3%) and; "I don't like it. Card debt becomes a snowball" (8.3%).

5.2 Category 2 - motivations that lead to the frequency of online shopping

In the questionnaire three questions were addressed so that later, in the analysis of the results, they were used to investigate the motivations of the respondents regarding the frequency of purchases in online environments. The main purpose in asking the questions in category 2 is to identify the reasons that lead individuals to adopt or reject e-commerce purchases.

91% of the respondents declared they have some frequency of purchases in Internet, divided into 50.8% who declared they always purchase online, 29.5% who declared they purchase online sporadically, and 10.7% who almost never purchase online. These data are in line with the data made available by EBIT (2020), which indicate that 58% of consumers always shop online and 35% shop online sporadically.

Analyzing the consumer respondents profile who state a high frequency of online shopping (respondents who state they always shop online), 55% state "I can no longer imagine my life without e-commerce," indicating a high acceptance of e-commerce; 16% stated "I usually search for prices on the Internet, but what I really like is to buy in the store," indicating that for this portion of respondents, the price factor is preponderant in the decision between buying online or in person; and 29% stated that they prefer to buy online for reasons of speed, convenience, and price, indicating that a good portion of respondents perceive greater value in online retailing compared to traditional retailing.

Although the survey showed high levels of online shopping frequency, a portion of 9% of respondents stated that they "never shop online. Of these respondents, 18% said "I think buying online is more complicated than buying in the store," and 82% said "I don't use the Internet".

5.3 Category 3 - motivations that lead to the adoption and rejection of the use of bank slip in online shopping

In the questionnaire, two questions were addressed so that later on, in the results analysis, they were used to investigate the respondents' motivations regarding the adoption and rejection of the use of bank slip when purchasing online.

According to the answers collected in the survey, the credit card represents 89% of the transactions made in online purchases, followed by the bank slip, representing 8% of the transactions. Other payment methods that appeared in the answers, such as digital wallet and bank transfer, do not present relevant numbers, and together add up to 3% of the collected answers. These data converse with the data made available by BCB (2019), which

point out the card as the payment method that has grown the most in the country in the last 10 years, appropriating an important market share, which was previously dominated by credit transfer products (where bank slips are included).

In order to understand and analyze the main motivations that encourage the adoption of bank slip for online purchases, the respondents were asked to indicate the main aspects that influenced their decisions regarding the preference for bank slip. Respondents could indicate 1 or more aspects. Of the total respondents who indicated the bank slip as their main payment option for online shopping, 22% stated "I organize myself better using bank slip "; 22% stated "I like to pay by bank slip because almost all sites accept this payment method"; 56% stated "I like to pay by bank slip only if it's via Internet Banking"; and 44% stated "I believe that bank slips are totally safe".

Despite having indicated the bank slip as their first choice, 56% of the respondents indicated that they prefer to pay by bank slip only if it is done via Internet Banking, which indicates a preference of a large portion of the public to pay via digital methods.

Of the respondents who indicated the credit card as their first choice, 42% stated "I don't like to pay via bank slip because the payment is not recognized immediately"; and 45% stated "I don't like to pay via bank slip because I find it cumbersome". According to the answers obtained, consumers who use cards reject the use of bank slip in online purchases mainly because of the lack of speed of the payment method in processing the financial transaction, since bank clearing may take two business days, as well as because of the greater bureaucracy of the product, especially if the payment is not made digitally.

Of the respondents who indicated the credit card as their first option, 37% said "I like to pay by bank slip when my credit card limit doesn't cover the purchase"; and 5% stated that "they pay by bank slip when they get a discount". According to the answers obtained, consumers who use cards change their payment methods when they identify some economic benefit offered by other methods.

5.4 Category 4 - motivations that lead to the adoption and rejection of using a credit card in online purchases

Regarding the main motivations that encourage the adoption of credit card use in online purchases, respondents were asked to indicate the main aspects that influenced their decisions regarding card preference. Respondents could indicate 1 or more aspects.

Analyzing the data collected in the survey, 85% of the respondents stated "I like to pay by credit card because I can pay in installments"; 18% stated "I believe that cards are totally safe"; 22% stated "I organize myself better using a credit card"; 60% stated "cards are super adaptable because I can use them in physical stores and in the Internet"; 38% stated "I like the credit card because almost all the sites accept this modality"; 67% stated "I like to pay by credit card because the approval of the payment is immediate"; and 31% stated "by using my credit card, I earn points, so I prefer to pay via card".

Analyzing the data collected, it is inferred that the adoption of cards is linked to the granting of credit in the SFN, since 85% of the respondents stated that the possibility of paying in installments is a preponderant factor when choosing the payment method for online purchases. According to data made available by BCB (2017), about 44% of all Brazilian adults had access to some credit product in 2017. The wide access to credit products today is a reflection of important public measures taken in the last two decades that have encouraged the granting of credit in the SFN (Biancarelli, 2014), according to BNB (2012), the proportion of private credit grew by 65% between the years 2000 and 2010. According to BCB (2017), families may find it more difficult to obtain credit from the SFN in cases where there is a lack of financial guarantees and difficulty in proving income. For this reason, unemployed and informal workers may encounter more difficulties to have access to credit cards in the SFN.

Another characteristic of credit cards that encourages the use of the payment method in the virtual retail market, according to the survey conducted, is the speed in processing the financial transaction. Based on the survey, this element is highly valued by consumers, ensuring a competitive advantage for the credit card over the bank slip.

The third most cited element in the survey refers to the flexibility of cards in terms of virtual and in-person purchases. 60% of card users declared that flexibility is a preponderant factor when making a decision about which payment method to use. The data analyzed according to the survey conducted converse with the data made available by BCB (2019), which states that debit and credit card transactions represented more than half of the total transactions carried out in the year 2019, between payments via bank check; direct debit; and credit transfer. Therefore, it is inferred by the analysis of those obtained in the construction of the theoretical framework of this work, as well as by the analysis of the data collected through the survey analyzed, that the popularity of cards in virtual environments is due, in part, to the popular heritage built in face-to-face retail. 38% of the respondents stated that the wide acceptance of the credit card by virtual shopkeepers is a decisive factor for the choice of the payment method to be used. According to Rochet and Tirole (2004), the popularization of the card is characterized as an indirect externality, in which the increase of card holders (consumers) encourages the increase of shopkeepers who adhere to the payment method.

According to the data collected, 31% of the respondents declare that benefit programs, such as those linked to earning points to spend on trips, are factors that encourage the choice of the payment method. This element, characteristic of the card, is yet another factor that ensures competitive advantage to the payment method in comparison to the bank slip.

CONCLUSION

Besides the challenges linked to regulatory and competitive issues, the market for payment methods has faced, in recent years, challenges linked to the advances in online retailing. In view of the growth of e-commerce, it was necessary to develop new technologies to make digital payments possible. The particular characteristics of each of the payment methods were fundamental to guarantee competitive advantages to these products, and some of them have become popular more quickly when it comes to payments in online purchases.

In view of the analyses carried out by the data survey in this study, the credit card has important elements that guarantee to it more value perceived by the consumer in comparison to the bank slip, as far as virtual consumption is concerned. This value, perceived by the customer, is reflected in the wide adoption of this payment method in Brazilian e-commerce, making the credit card the most used payment method. The main competitive advantage that popularizes the card in virtual retailing is the viability of paying in installments, since through the cards, users are granted credit for consumption through commercial banks. Another motivation that influences the choice of credit card for online purchases is the instantaneous clearing of the financial transaction between the online shopkeeper and the consumer. The speed of payment approval makes it possible for the credit card consumer to receive the purchased product or service more quickly. In addition, the flexibility of also being able to use the card in face-to-face purchases guarantees simplification for the final consumer, this being yet another factor that motivates individuals to adhere to the use of credit cards.

As for the bank slip, its main competitive advantage consists in not requiring proof of income and financial guarantees from the consumer. In addition, some shopkeepers may offer discounts when paying by bank slip - since these payments are cash and guarantee less costs to the commerce - and as analyzed, based on the data collected, this is a motivation that encourages individuals to adhere to payment by bank slip.

As for the motivations that generate rejection to the use of credit cards, no significant numbers were identified. In most cases, the non-adoption of credit cards is due to the individual's financial difficulty, not because of objections to the payment method.

In conclusion, it is understood that the credit card is the payment method that most motivates consumers in e-commerce. Due to the exploratory nature of this research, the content addressed in this paper may generate opportunities for new analyses related to this theme. Regarding the recent emergence of new digital payment methods, such as digital wallets, cryptocurrencies, and the PIX, other analyses can be carried out. Moreover, issues related to the growth of e-commerce because of the pandemic caused by COVID-19 can add to the study of the theme.

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