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Dynamics of Competition *versus* Collaboration Between Fintechs and Traditional Providers of Financial Services in Brazil

Rozana V. P. Silva[1], Elias P. Lopes Júnior[2], Samuel F. Câmara[3], and Paulo T. Torres Júnior[4]

[1]Ceará State University, Brazil | *rozana.ventura@yahoo.com.br*
[2]Federal University of Cariri, Ceará, Brazil | *elias.junior@ufca.edu.br*
[3]Ceará State University, Brazil | *samuel.camara@uece.br*
[4]Ceará State University, Brazil | *paulo.torres@aluno.uece.br*

Abstract

The research sought to understand the phenomenon of competition *versus* collaboration between Fintechs and traditional financial service providers. It was a qualitative study with an exploratory and descriptive approach, using data triangulation and their organization in Display, which allowed checking patterns and causality relationships among the variables. As results, we observed that traditional financial providers adopt collaboration with Fintechs for competition in the financial market as their main strategy. As market dynamics, they launch their own subsidiaries; create risk funds to finance Fintech services; purchase and sell products and services for Fintechs; and create partnerships with these companies. We found that collaboration has been the best way for providers of traditional financial services to compete with companies in the financial market.

Keywords: financial market, fintechs, competition, collaboration.

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1 Introduction

The financial services industry has become one of the main contributors to countries' wealth creation (Romãnova & Kudinska, 2017). Since it permeates all production sectors, the financial market represents one of the essential activities for economic development (Liu, 2010); by channeling funds from surplus agents to deficit agents it fosters a more efficient distribution of resources, increasing productive capacity, wealth generation, and consequently, stimulating economic prosperity.

In Brazil, in 2019, the capital market channeled about R$ 396.1 billion in resources to the productive sector, where 68.2% of this amount was raised through debt instruments, and 22.8% by issuing new shares (Anbima, 2020). For comparison purposes, this figure represented about 5.42% of the country's Gross Domestic Product (GDP) that year (IBGE, 2020). Although the financial market sets a regulatory environment capable of providing guarantees and legitimacy to transactions, it is not limited to a platform where people and companies identify possibilities for increasing their productivity through resources that finance such expansion. Means of payment, insurance, and investment intelligence are also important business areas that are gaining prominence in the sector.

Advances in technology and the digitization of business processes in the financial services sector have driven a digital transformation of the financial sector, leading to more digitized business models and processes, and creating new products and services (Jünger & Mietzner, 2020). According to a survey conducted by the Brazilian Federation of Banks (Febraban, 2017), Brazilian banking institutions invested R$ 18.6 billion in technologies only in 2016, with 21.9 billion transactions through mobile banking. Brazilians have increased the use of technologies in transactions, with a 27% growth for digital channels.

The intensive technological development is one of the most important changes in the financial industry (Lee & Shin, 2018). In addition to representing one of the largest expansions and use of capital in modern economies (Gomber, Kauffman, Parker and Weber, (2018)), it brought deep structural changes, being considered a true revolution, by creating a strong disruption of products, processes, and business models in the sector, by startups and technology-based companies, a movement commonly called 'Fintech Revolution'.

Fintech is the name assigned to companies that integrate the intensive use of technology for delivering financial services, which have gained relevance in a market previously dominated by traditional providers (Romãnova & Kudinska, 2017). For Hoder, Wagner, Sguera and Bertol (2016), these companies specialize in financial technologies that facilitate numerous industry activities and reduce costs. According to FintechLab (2020), the number of initiatives has increased from 453, in August 2018, to 689 companies, in June 2020, a growth of 52% in three years.

FinTech companies can be defined as companies that offer technologies for banking and corporate finance, capital markets, financial data analysis, payments, and financial management (Skan, Lumb, Masood, & Conway, 2014; Romãnova & Kudinska, 2017). Therefore, not only Fintechs, which already carry innovation at their core, but also established companies, were encouraged to innovate. As Sousa Batista *et al.* (2013) mention, innovation is a basic assumption for organizational competitiveness, essential for fostering economic progress.

Fintech firms are rapidly growing around the world as their innovative services are simple and creatively use emerging digital technologies. This poses a major threat for incumbents as their traditional way of catering to financial services is complicated and are abided by strict regulations provided by their regulatory board. So, incumbents need to think of a strategic alliance that could be collaborative, co-operative, or competitive depends upon their business objectives. Collaborative and cooperative terms are often interchangeably used. Collaborative refers to shared authorship with shared vision and values whereas cooperative refers to passive teamwork with no sacrifice in individual autonomy (Anifa, Ramakrishnan, Joghee, Kabiraj & Bishnoi, 2022).

Many papers have studied how the advent of Fintechs has promoted disruption in an established industry, with roots in traditionalism and continuity of its institutions, in addition to understanding the impacts of such changes on the financial system (Haddad & Hornuf, 2018; Li, Spigt, & Swinkels, 2017; Philippon, 2016; Wonglimpiyarat, 2017). However, few papers focus on the dilemma 'competition versus collaboration' between Fintechs and traditional financial firms (Liu, Kauffman, & Ma, 2015; Lee & Shin, 2018; Li *et al.*, 2017). This paper sought to fill this gap, since there is a need for better understanding the recent movements in this market, which presents itself as a new business dynamic, involving startups and established companies, as well as control bodies and public policy makers.

From the perspective of Game Theory, the constructs of cooperation and competition can be interpreted as a strategic interaction between agents. When choosing to compete with a new entrant, through a disruption in the previous business model, or to take a collaborative stance through joint ventures, mergers or acquisitions, Incumbents resort to the strategy to maximize the institution's profits or minimize the loss of market share. market resulting from a scenario

of fiercer competition. Situations that involve interaction between rational agents who behave strategically can be formally analyzed as a game. That said, it remains to be seen what game Fintechs and Incumbents play.

Not only does the transformation in information technology allow the introduction of competitors into the market, but also creates new possibilities for traditional banks, including new risk management strategies and reduction of administrative costs (Veronese & Bertran, 2023). Drasch, Schweizer, and Urbach (2018, p. 5) reinforce that there are strong reasons to justify cooperation between banks and Fintechs, as the latter benefit from the banks' financial resources, infrastructure, access to clients, and solid reputation, while banks profit with access to new clients, products, services, capabilities, and technologies achieved by Fintechs.

In addition to competition versus collaboration strategies and their results in the form of organizational performance, it is believed that due to their competitive, technological, and innovative base, Fintechs make intense use of their knowledge conversion capabilities and network capabilities, since the flow of knowledge and collaborative relationships can be structured, considering how, in this dimension, they relate to each other and between established companies.

Hence, given the belief that Fintechs, due to their competitive, technological, and innovative basis, use their knowledge conversion and network capacities intensively, this paper sought to answer the following question: *How Fintechs and traditional providers of financial services establish their strategies of competition and collaboration?*

2 Theoretical Background

Traditional banking model is defined as depository institutions, such as commercial banks, savings and loans, and credit unions that accept deposits from borrowers and part of their business is lending out their depositors' funds to borrowers in the form of mortgage loans. On the other hand, FinTech is defined as computer programs and other technology used to provide banking and financial service (Melnyk, Kuchkin & Blyznyukov, 2022).

The intensive use of technology, through more efficient business models, has reshaped the financial market, by cutting costs and increasing quality, diversity, and customization of products and services. The advancement of mobile technology, social networks, artificial intelligence, and big data analysis has brought unprecedented change to this market, enabling consumers to meet their demands anytime and anywhere (Lee & Shin, 2018; PWC, 2016). Hence, the Financial Technology (Fintech) is one of the most important innovations in the financial industry, enabled by information technology, a favorable regulation, and the sharing economy (Lee & Shin, 2018; Puschmann, 2017). It often characterizes startups with solutions that foster structural changes in institutions, thus driving economic growth and social welfare (Liu *et al.*, 2015).

Digitalization will be just one of the drivers of business model innovations soon. For the banking industry, the likely key drivers will be automation and robotics, blockchain technology, new competitors, such as FinTech firms, digital investing, the Internet penetration rate, biometrics, gamification, and millennials. The latter will significantly impact social trends and moral concepts, such as sharing physical assets, sustainability, and maintaining a healthy work-life balance. Digitalization and its potential ability to satisfy client and societal needs are the drivers of these developments (Meier, Marthinsen, Gantenbein & Weber, 2023).

The main impact brought by Fintechs was the emergence of new business models that presented, as a rebound effect, new challenges for financial institutions and their regulators. Development of FinTech is an additional challenge for banks; on the other hand, this challenge can be turned into an opportunity that will support further growth of banks (Romãnova & Kudinska's, 2017). This

resulted in several papers intended to understand the impact of this innovation, fostered by the accelerated technological development.

Authors like Wonglimpiyarat (2017) and Lee and Shin (2018), by analyzing the extent of the union of these factors, proposed a systemic approach to understand the progress and pattern of technology development and diffusion in the financial market, by addressing the ecosystem created by Financial Technology. In addition, Gomber *et al.* (2018) mapped the innovations brought by the Fintech Revolution, to interpret the forces that generated innovation, disruption, and change in financial services.

According to Kohtamäki, Parida, Oghazi, Gebauer and Baines (2019), digitalization made large incumbent institutions redefine their boundaries, becoming more permeable and increasing interaction with other market participants. They even kept Fintech incubators and accelerators in their structure, to benefit from their innovations while controlling them (Hornuf, Klus, Lohwasser & Schwienbacher, 2021). This strengthens Romãnova and Kudinska's (2017) findings, that the emergence of Fintechs represents both a threat for large banks and traditional providers, and an opportunity for their further growth, if they complement their services with cooperation.

These authors built their analysis from a central concept that stems from understanding that certain variables can establish a relationship of mutual influence with, for instance, the technological evolution of established companies through their capacities of knowledge conversion and networking. Thus, the proposed framework (Figure 1) synthesizes the way we studied the phenomenon of competition and cooperation between Fintechs and traditional providers of financial services, since it considers that each company's capacities of knowledge conversion and networking are determining variables for their prevailing attitude before niche partners and competitors.

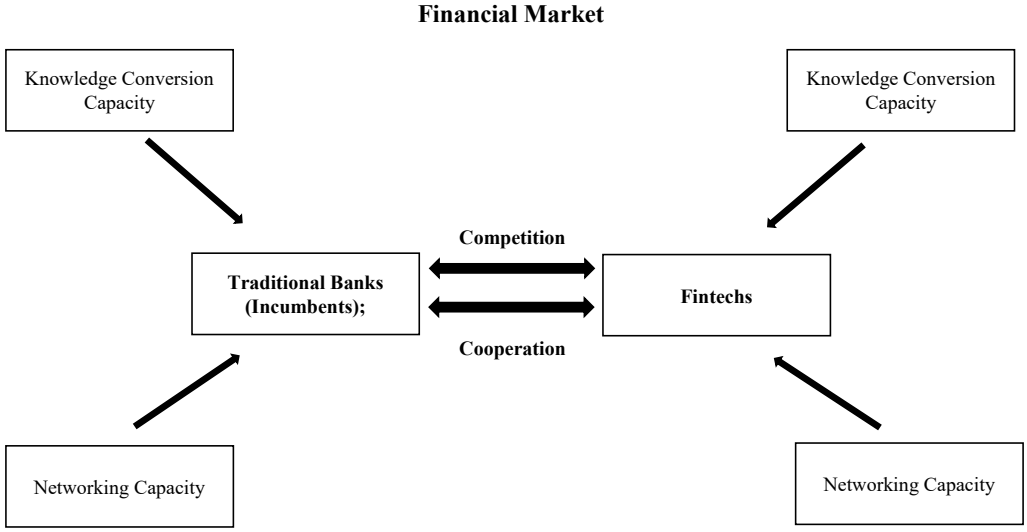

Figure 1. Proposed analytical framework (Source: Prepared by the authors.)

The constructs of the analytical framework are: i) Knowledge Conversion Capacity; ii) Competition *Fintechs vs* Incumbents; iii) Cooperation *Fintechs vs* Incumbents; and iv) Networking Capacity.

2.1 Competition Dynamics between *Fintechs* and Traditional Providers of Financial Services

Competitiveness is a company's ability to design and implement competitive strategies that allow it to expand or keep, for a long time, a sustainable position in the market. It results from adapting individual companies' strategies to the pattern of competition that prevails in a specific market (Ferraz *et al.*, 1995). The applicability of the competitiveness concept has been addressed from different perspectives over time (Porter, 1985; Hamel & Prahalad, 1995; Barney & Hesterly, 2011; Kelm, Baggio, Kelm, Griebeler & Sausen, 2014)).

According to Porter (1985), to become competitive, companies need to adopt one of the three generic strategies that he defined: total cost leadership, differentiation, or focus. The first consists in achieving the lowest total cost in each industry, through a set of company's policies oriented towards this objective. The second, differentiation, consists in creating something new, in the product or service offered, so that it becomes special, different in its field; and finally, the third strategy, focus, consists in identifying a group of buyers, a product line segment, or a geographic market, and serving this target market better than its competitors.

For Hamel and Prahalad (1995), the secret of competitiveness consists in anticipating the future before it arrives and identifying the opportunities for action. A company that is not able to make an emotional and intellectual commitment to creating the future, even in the absence of a financially undeniable commercial reason, will certainly be just a *follower* company. Being able to identify opportunities not perceived by other companies and to exploit them, by gathering and creating the necessary *core competencies*, is the difference between surviving or dying.

Several motivations lead a company to increase its competitiveness, which becomes a component of its business strategy. Among them, the following stand out: the search for new market and business opportunities; the development of its own technological capability; the increase in the quality standards of its products and services; the rationalization and modernization of its industrial facilities; the technical and managerial qualification of its specialized employees, and human resources in general (Marcovitch, 1991).

In this scenario, we can also see competitiveness in two levels, one macro, also identified as regional competitiveness, and a micro level. According to Barney (1991), understanding the concept of regional competitiveness must include certain elements that make it up, the relations that exist between more and less competitive companies at a regional level, and the common characteristics of these regions that affect the competitiveness of the companies located there. From this perspective, competitiveness represents the ability of an economy to optimize its local resources and have the strength to compete and succeed in national and international markets, adapting to the changes in these markets. At the micro level, the concept of competitiveness regards a company's ability to compete, grow, and be profitable, that is, the ability of producing goods cost-effectively, in an open market.

Competitiveness is based on economic performance and on the ability to change the results of productive activities into increased income, making it often associated with better living standards and increased employment opportunities, and with a nation's ability to keep its responsibilities at the international level (Krugman, 2009). According to Goes (2016), globalization imposes on companies an even greater commitment to the continuous improvement of their products, processes, and waste elimination.

Traditional competitive advantages of scale gains and pricing policies give way to new strategies driven by innovation, integration, and flexibility. Continuous changes, as well as the emergence of new entrants that offer high quality services, cheaper and centered on customer needs, inevitably foster competitiveness. The scenario becomes even more challenging for traditional financial

service providers, which currently face an increasing competition for staying in this market, full of financial and non-financial companies (Hitt, Ireland, & Hoskisson, 2011; Romañova & Kudinska, 2017; Joia & Cordeiro, 2021).

As strong innovation environments generate uncertainty and information asymmetry, the dynamics of competition and cooperation in the financial services market has been largely reshaped, due to new technologies that accelerate the emergence of innovative business models. According to Lee and Shin (2018), as Fintechs have great impact on the financial industry, incumbent institutions must develop technological skills to leverage their businesses and ensure their permanence in this market.

The entry of information technologies and social media in the supply side of the financial system and the increase in demand for financial services connected to FinTech urge banks to realize heavier investments in technological innovation with the objective to reduce operating costs and automate processes as a means to develop distribution channels to present customers with innovative services. Fintechs have substantially altered the market and banks have had to react to this competition in order not to be replaced in large segments of the market (Mills & McCarthy, 2017).

Fintechs put pressure on traditional banks because traditional banks have traditionally focused on products while new entrants have focused on customers (Vives, 2017). Jagtiani and Lemieux (2018) presented evidence that fintech lenders can fill credit gaps in areas where bank offices may be less available and the local economy may be more challenging. As the number of banks and banking offices continues to decline, the presence of fintech lenders may be important to supplementing the availability of unsecured consumer credit.

A key driving force of the transformation in the finance sector is a new competition by market entrants, such as technology firms and those controlling, cultivating, and developing the customer interface, resulting in complete coverage of clients' needs. Different types of fintech entries imply different effects on banking sector competition. Fresh entries may not threaten incumbent banks if they target a parallel market with a limited banking presence. In other instances, new fintech entrants compete directly with banks—peer-to-peer lending platforms, for example, entirely bypass banks in the intermediation process (Bejar, Ishi, Komatsuzaki, Shibata & Tambunlertchai, 2022).

2.2 Cooperation Dynamics between *Fintechs* and Traditional Providers of Financial Services

Traditional banks are still in the process learning how to obtain a benefit from the fintech boom. Leading world players are already demonstrating cases of successful cooperation with fintech companies. At the same time, they follow different strategies. So, one of them is the acquisition of fintech firms to increase the efficiency and speed of their activities (Melnyk *et al.*, 2022)). In the internet age, the main challenge lies in the need for established banks to develop digital banking ecosystems and/or enter strategic alliances with technology service providers (Campanella, Serino, Battisti, Giakoumelou & Karasamani, 2023).

The constraint that fintech faces is not having enough equity to expand business, whereas traditional banks lack innovative, rapid technology backed services to acquire more customers. Collaboration could provide mutual benefits for both these participants and help in attaining their goals quickly. It is observed that banks are getting advantages such as personalization, accessibility, and smart solutions that help in targeting unmet customers. Meanwhile, fintech firms are also benefitted by eliminating some of the discrepancies they usually face. Major challenges that fintech firm faces are uncertain regulations, low capital, lack of security, and poor infrastructure. It is observed from the study that most incumbents have understood the importance of emerging

innovative digital technologies and have started to collaborate with fintech firms (Anifa et al., 2022).

Based on the theory of games and the evolutionist perspective, Axelrod (2010) mentioned three guiding questions for the analysis of the evolution of a cooperative behavior: (i) How a cooperative strategy starts in a predominant competitive environment; (ii) What type of strategy survives in an environment where different strategies are used; and (iii) Under what conditions a cooperative strategy survives the invasion of non-cooperative strategies. For the author, under appropriate circumstances, cooperation occurs even among opponents.

Some authors say that the coordination of collaborative activities by companies stimulates the consolidation of sustainable competitive advantages, represented, for example, by Local Productive Arrangements (APL). Also characterized as productive agglomerations, or clusters, APLs exert political and social influence on certain locations by concentrating specialized industries that maximize the exploitation of resources available in the region, and improve competitiveness based on relationships between companies, market, and institutions (Galindo, Câmara & Lopes Júnior, 2011).

The dynamics of competition in clusters operate in a radically different way from the competition predicted by neoclassical economists. They perceive competition as a zero-sum game, where the aggressive pursuit of market share would lead competitors to destroy economic profit stemming from consumer surplus. In a cluster, by contrast, competitors seek to compete aggressively through technological innovations (Kirschbaum, Sakamoto, & Vasconcelos, 2014). This is because innovative activities enable the creation of knowledge (spillover), which is shared by the whole cluster, as well as the generation of assets external to the firms, such as the concentration of skilled labor. Therefore, the higher presence of firms in the same location sets in motion an increasing movement of external goods creation (externalities) and knowledge (spillovers), in a virtuous circle of firm growth and regional prosperity, where there is a mutual benefit with a greater exchange of information, skilled labor, and concentration of exporters, thus reducing costs by sharing resources.

Porter (1991) introduced and spread the concept of cluster, through which companies form an interdependent system, both internally and including suppliers, distribution channels, and the final consumer. In that complex, the sectors strengthen themselves and collaborate, achieving great benefits within the chain: information disseminates better and faster, joint projects are stimulated, rivalry in one sector spreads to others, stimulating research and development, and the introduction of new strategies and techniques. Therefore, the clustering of sectors expands and accelerates the creation of competitive factors, generating spillovers. However, the cluster construct still needs more formalization to be operational, which leads Porter's critics to question if the cluster concept is suitable for developing countries (Kirschbaum *et al.*, 2014).

Taking Marshall's (1920) theory of industrial districts as a reference, Porter (1991) assumes the idea of innovation as the fundamental reason for achieving competitive advantages. According to the author, "companies achieve competitive advantage through innovation acts. They approach innovation in its broadest sense, including new technologies and new ways of doing things" (Porter, 1991, p. 6). Empirical evidence of his papers justifies Marshall's (1982) assumptions, that the formation of clusters generates synergies among industry participants, and the main synergy is the increase of innovation, which, in turn, is the reason for the competitive advantages of the group of firms clustered in a region.

Bakaric (2017) identified that economic performance is significantly predicted by cooperation with public institutions, financial institutions, and professional associations, in addition to access to cluster resources, such as horizontal cooperation, fairs, exhibitions, etc. Furthermore, access to

credit, customers, and competitors shows a significant positive effect on the financial performance of these firms. As for Fintechs, Lee and Shin (2018) argue that financial market entrants can choose between competing or cooperating with incumbent institutions, to ensure their survival and growth. Conversely, incumbent institutions can also develop competitive strategies by investing internally in financial technology-based projects (Neenu & Hemalatha, 2016), or collaborative strategies, by investing in startups.

The competitive attitude among companies in the same industry allows achieving better results through strategic cooperation and complementarity of products, technologies, and processes, in addition to reducing costs and the risks inherent to innovation and to launching new products and services (Bengtsson & Kock, 2000). Fintechs seek strategic alliances with large companies in the same industry, to benefit from their infrastructure and expertise. Thus, entrants would have an incentive for a collaborative attitude (Deutsche Bank, 2014).

On a global scale, digitalization has tightened competition among established financial services providers and forced them to transform their business models digitally. This has led to an emerging number of platform-based business models that foster cooperation and innovation and better client services. At the same time, new players increasingly push into finance, such as big tech firms like Google, Apple, Amazon, Facebook, Tencent, and Baidu (Meier et al., 2023).

Cooperation would also be advantageous for incumbent banks, according to Romãnova and Kudinska (2017). By collaborating with startups, traditional financial service providers would be able to create new opportunities, benefiting from Fintechs' more efficient business model. PricewaterhouseCoopers' 2016 Global Fintech Report highlighted that incumbents' ability to collaborate with Fintechs could become an important competitive advantage (PWC, 2016). Through a survey applied in 46 countries, whose 544 respondents were mostly CEOs (Chief Executive Officer), CIOs (Chief Informaton Officer), and Heads of Innovation, the business-consulting firm observed that most large financial institutions were inclined to adopt some kind of collaborative agreement with Fintechs, as we see in Figure 2.

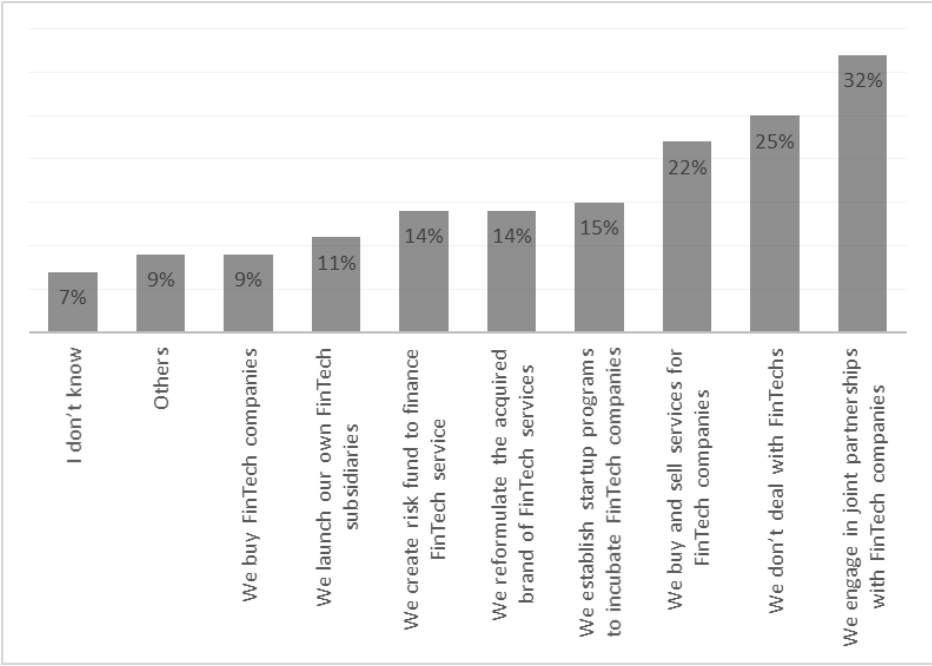

Figure 2. How are you currently dealing with Fintechs? (Source: Adapted from PWC (2016)).

As Figure 2 shows, 32% of the responding companies have an equity interest in a Fintech, against 25% that do not keep any type of business with this kind of company. While 20% have acquired or launched their own Fintechs, 22% have buying and selling relationships with these players. From these data, we see that cooperation is the market strategy adopted by most financial institutions.

2.3 Knowledge Conversion and Networking Capacity

Knowledge and information are companies' strategic assets and led to the emergence of a research line focused on the study of knowledge management, sharing, and conversion into innovative competencies, which are capable of changing products, services, and business models. Knowledge has become the explanatory factor for the difference in the individual performance of organizations (Teece & Pisano, 1994; Nelson & Winter, 1985). Through this understanding, McAdam, Stevenson e Armstrong (2000) summarized the concept of innovation as the use of individuals and teams' creative capacity in response to change, by improving products, processes, or procedures through the continuous enhancement of effective production techniques, assimilation, and exploitation of novelties.

For Nonaka and Takeuchi (1997), the interaction between tacit and explicit knowledge, as well as processing information from the external to the internal environment, are driving forces for innovation. The authors address the internal creation of new knowledge through an intensive connection among the members of a company, which later is shared, redefining solutions, and recreating the ecosystem where the organization operates. Fintechs and traditional providers of financial services are no exception to the rule, and as data-intensive companies, they require further research on knowledge management and its impact on their ability to innovate, on increasing their competitive advantages, and on their perpetuity.

Teece, Pisano and Shuen (1997), and Zott, Amit, and Massa (2011) observe that intellectual property is not sufficient to support a competitive advantage. Firms need to develop dynamic capabilities, which are the practices of renewing the organization's internal and external skills, resources, and functional competencies, to achieve uniformity in a changing environment. The ability to operate in networks can positively relate to the ability of converting knowledge into new products and services. Beyond the analysis of performance at the individual level, the capacity to produce networked knowledge has also gained space in studies on the subject (Dyer & Nebeoka, 2000).

From this standpoint, networking capacity is of utmost importance, because it is not just about connecting different skills and sharing knowledge and information to generate innovation, but also because it reflects a behavior of cooperation among companies, in a coordinated way, for everyone to benefit from competitive advantages.

In the field of innovation, the study on the constitution of networks is very relevant for understanding the dynamics of knowledge creation and dissemination. Several studies in this field consider innovation networks as a variable of high impact, perhaps decisive for fostering innovation among member organizations (Breschi & Marleba, 2005). According to Câmara *et al.* (2018), the network capacity enables achieving competitive gains, since the interdependence among network members makes them more competitive and more dependent on the partnership. Therefore, the ability of Fintechs to organize themselves in a collaborative and coordinated way, as well as their knowledge of the market, directly affects the speed of creation of new business models, changing the financial service market structurally. Several researchers have concluded that in complex and turbulent environments, organizations can boost their performance through strategic alliances.

3 Methodology

The present study had a qualitative approach and an exploratory-descriptive nature since it sought to understand the dynamics of competition and collaboration between Fintechs and incumbent institutions. The qualitative approach is adequate to understand phenomena that are not easily quantifiable and captured through equations and statistics. The qualitative approach proves to be appropriate to deepen the understanding of these phenomena, collaborating with the advance in the understanding of the dynamics of cooperation and competition between Fintechs and Incumbents, relationships still little explored by academic research.

To this end, we did triangulation of data from different sources, organizing the results in a display, which enabled checking patterns and causal relationships among the variables, and building a solid qualitative analysis of the phenomenon (Miles, Huberman, & Saldaña, 2014). The crossing of information allows researchers to verify several hypotheses, in addition to the possibility of graphical representation of behavior and relationship between variables. The main objective of data triangulation was to understand whether Fintechs and Incumbents held a more competitive or collaborative attitude.

Empirical evidence was recorded in different ways, collected through semi-structured interviews, content analysis of the selected companies' websites and documentary analysis of executive reports and financial projections. The empirical evidence in websites and executive and financial reports was collected to understand how they communicated with customers and potential clients. Three Incumbents companies and fourteen Fintechs were analyzed.

The semi-structured interviews lasted an average of 30 minutes and were conducted to identify the degree of intensity and frequency of the company's practices in relation to the attributes referring to each variable studied. It was not possible to carry out all the planned interviews, which would allow a more robust view of the phenomenon that is intended to be studied. Some invited to participate in the interview did not feel free to participate in the research because they thought that the shared information could harm the organizational strategy.

Due to the social distancing measures to contain and fight the COVID-19 pandemic, we defined the interviews by convenience, and carried them out virtually, through the Zoom video conference platform, aiming to identify the degree of intensity and frequency of the company's practices regarding the attributes of each variable studied. We interviewed ten financial market professionals, holding executive positions in both types of firms (Incumbents and Fintechs), whose ages ranged from 21 to 49 years old, with an average time of experience in the financial market of 11 years; the most experienced had 29 years in the market, and the least experienced, about 18 months.

3.1 Analytical framework

For organizing and coding the collected *corpus*, we used the method of Data Display, as proposed by Miles *et al*. (2014). The Display consists of the systematic visual presentation of information, making the qualitative analysis of the field solid and allowing the researcher to reach conclusions more clearly. To build the Display, we used the constructs related to knowledge conversion capacity, network capacity, competition, and cooperation. Table 1 presents data display that served as a tool and a basis for analyzing the results.

Table 1. Data display

Construct	Variables	Attributes	Scale
Knowledge Conversion Capacity	Vision Capacity	(1) Identifies market applications for firm knowledge/technology; (2) Identifies different groups of customers that may be interested in its products or services	(1) Low (2) Medium (3) High
	Design Capacity	(1) Designs alternative prototypes for the company's products or services; (2) Analyzes several combinations of attributes for its products or services	(1) Low (2) Medium (3) High
	Integration Capacity	(1) Assimilates knowledge from suppliers and partners into new products or services; (2) Applies different skills of the company for the development of new products or services	(1) Low (2) Medium (3) High
Neworking Capacity	Coordination	(1) Gets information on partners' goals, potential, and strategies; (2) Judges in advance to which potential partners to talk about building relationships; (3) Discusses with partners about how they can support each other, for companies' success	(1) Low (2) Medium (3) High
	Relational Skills	(1) Has the ability to build good relationships with business partners; (2) Can put himself in the place of the partners; (3) Deals with partners flexibly; (4) Solves problems with partners constructively	(1) Low (2) Medium (3) High
	Partners' knowledge	(1) Knows partners' market; (2) Knows partners' products, procedures, and services; (3) Knows the strategic potential of competitors;	(1) Low (2) Medium (3) High
	Internal Communication	(1) Organization's employees make informal contacts with each other; (2) Communication is frequent between projects and thematic areas; (3) There is frequent and spontaneous exchange of information	(1) Low (2) Medium (3) High
Competition Fintechs vs Incumbents	Competitive behavior	(1) Competition between incumbents and Fintechs is fierce; (2) There are conflict of interests among institutions; (3) There is rivalry; (4) Employees are used to assess competitors	(1) Low (2) Medium (3) High
	Products and Services	(1) Competition about the best service; (2) There is price competition; (3) There is competition about service characteristics; (4) Companies copy competitors' procedures	(1) Low (2) Medium (3) High

Construct	Variables	Attributes	Scale
	Market Dynamics	(1) Competition contributes to companies' survival; (2) Incumbents influence closing of Fintechs (or vice-versa); (3) Fintechs take customers from incumbents; (4) Competition for market share is common.	(1) Low (2) Medium (3) High
Cooperation Fintechs vs Incumbent	Sharing	(1) Institutions exchange experiences; (2) Execution of joint activities; (3) Knowledge sharing	(1) Low (2) Medium (3) High
	Exchange and information	(1) Exchange information about customers; (2) Exchange information on how to conduct business; (3) Exchange information on market trends; (4) Share the emergence of new products/services; (5) There is communication between incumbents and Fintechs;	(1) Low (2) Medium (3) High
	Collaborative behavior	(1) Carries out collaboration actions	(1) Low (2) Medium (3) High

Source: Prepared by the authors.

We delimited the scope of analysis of empirical evidence, collected in the field, to the attributes referring to each variable that makes up the constructs. After collection, we organized and ranked data according to the attributes to which they referred. For each variable, we analyzed them in each company's dimension, and classified them as high, medium, and low. Constructs' ranking obeyed the following structure: (1) Low: when most of the attributes of each variable were not observed, or the practice is not frequent in the company; (2) Medium: when most of the attributes were observed during the survey, and the practice is present in the operation; and (3) High: when we observed the presence of the described attributes, and they appear frequently in the speech and practices.

With the classification of cooperation and competition constructs into low, medium or high, we could check the prevailing attitude in this market, and by type of company (Fintech or Incumbent). We could also check if the Fintechs with higher capacities of knowledge conversion and networking were more likely to collaborate or compete with traditional providers of financial services. The analysis of the categories that emerged from this stage led to the understanding of how the new scenario imposed by the intensive use of technology is perceived by organizations and to the understanding of the competition and collaboration relationships between Incumbents and Fintechs, which are presented in the section on results.

4 Results and Discussion

Initially, for characterizing data, we identified 17 companies, three classified as incumbent banks (Itaú, Bradesco, and Santander), and the others as Fintechs. There was no difficulty in accessing information from incumbent banks, especially on organizational performance, since it is disclosed

through quarterly financial reports; but as for Fintechs, information is poor. In addition, there is a difference regarding institutions' time of existence. While Itaú, Bradesco, and Santander have long established operations (96, 78, and 38 years, respectively), Fintechs have been operating for an average of 12 years.

4.1 Interaction between Fintechs and Traditional Providers of Financial Services

After collecting empirical evidence, we assigned a score to each construct, based on the frequency and intensity of its attributes. Due to the difficulties already mentioned, the qualitative analysis efforts related to measurable results focused on the incumbents Itaú, Bradesco, and Santander, and the fintechs XP and BS2. Thus, for the analysis of the financial ecosystem, and to understand how Fintechs and traditional financial service providers interact, we used the sum of the average scores assigned individually by each company for each variable related to the construct. The results showed: high Knowledge Conversion Capacity, high Competition of Fintechs vs Incumbents, medium Cooperation of Fintechs vs Incumbents, and high Networking Capacity.

From empirical evidence, the intense interaction between the two types of institutions was explicit, either through collaboration or through competition. In fact, no institution is unaware of the practices of its competitors and niche partners. Among interviewees, 80% said that the institution where they work has information about strategy and goals of competitors and niche partners, but access to such data is informal, mainly through the relationship among employees. We observed different types of arrangements among companies in the sector: coalition among incumbents for participation in a Fintech; coalition between Banks and Fintechs; digital spin-offs incubated in traditional institutions; and collaboration initiatives between companies and suppliers.

Strategic alliances among companies in the sector are also present in interviewees' speech. According to a Bradesco employee: "There are partnerships, so that big banks can compete properly". The high score of the variables of the Networking Capacity construct reveals the ability of organizations to spread knowledge, and a solid innovation activity. This movement is essential, considering that companies are heterogeneous in terms of their strategies, routines, and tangible (equipment, technologies) and intangible (specific markets, human knowledge, decision-making techniques) capacities, which complement their strengths, potential, and weaknesses (Nelson & Winter, 1985).

Although there is a perception that companies have a relevant capacity for building networks, this is still a market whose dominant behavior is to compete.

4.2 Reaction of Traditional Providers of Financial Services to the Emergence of Fintechs

There are many collaboration initiatives and joint ventures between incumbents and technology-based financial companies. Bradesco, one of Brazil's most traditional banks, with 78 years of existence, was the first to have a digital services spin-off, the bank Next. Itaú, the largest private bank in Brazil, has also shown willingness to undertake joint initiatives with innovative companies in the financial sector. In 2017, the bank acquired 49.9% of the capital stock of XP Investimentos, an open investment distribution platform and a direct competitor to the bank's high-income services.

For most employees of traditional institutions, Fintechs are not a threat to fight, but a catalyst for innovation and an opportunity for collaboration to leverage business.

However, competition is fierce in this market, despite the intense banking concentration. Even with the open innovation and *collab* initiatives that traditional banks encourage, it is still a market of medium cooperation, as results indicate: high Knowledge Conversion Capacity, medium

Competition Fintechs vs Incumbents, medium Cooperation Fintechs vs Incumbents (lowest score), and high Networking Capacity.

While respondents from traditional banks say that there is some concern on the part of institutions, but also a trend towards partnerships, respondents from Fintechs perceive a very hostile market, with a low level of interaction and dialogue among the institutions, as said by a XP interviewee, "Competition is fierce between traditional banks and Fintechs. Banks are increasing acquisitions to take competitors out of the market, and not adopting joint venture regimes". In general, there is a greater propensity by incumbents to work in a 'coopetition dynamics' with Fintechs. We did not notice a defense of the *status quo* by traditional institutions, and all incumbents describe themselves as innovative and digital. In addition, they seem more willing to network, either with other banks or with new technology-based entrants, to add new business models to their main business line.

4.3 Relationship between Networking Capacity and Knowledge Conversion on the willingness to collaborate and compete

Regarding the distribution of networking capacity in its different components, and how they are found in Fintechs, there is a predominance of medium and high values, but the lowest levels relate to the coordination component. It seems that Fintechs have a good network relationship, but do not coordinate by assuming common and combined strategies, which can be a disadvantage when competing with large and traditional Brazilian financial institutions.

As for the knowledge conversion capacity of Fintechs, these show usually medium and high levels. However, vision and integration capacities are the most vulnerable, which leads to the understanding that these firms have a competitive disadvantage compared to institutions that are more traditional. The results also show that the lowest levels concerned the collaboration components, and few scores expressed a low level of competition in the competition components, revealing that Fintechs compete more than collaborate.

When we related the total networking and knowledge conversion capacities of Fintechs to the total levels of competition and collaboration, we observed that they were not highly correlated. These capacities have a high level of correlation with competition, but there is not a clear pattern when it comes to cooperation. In theory, it should be the opposite, since it is expected that higher levels of networking capacity relate to greater collaboration; perhaps, this is explained by the low levels of components for some of the incumbents studied.

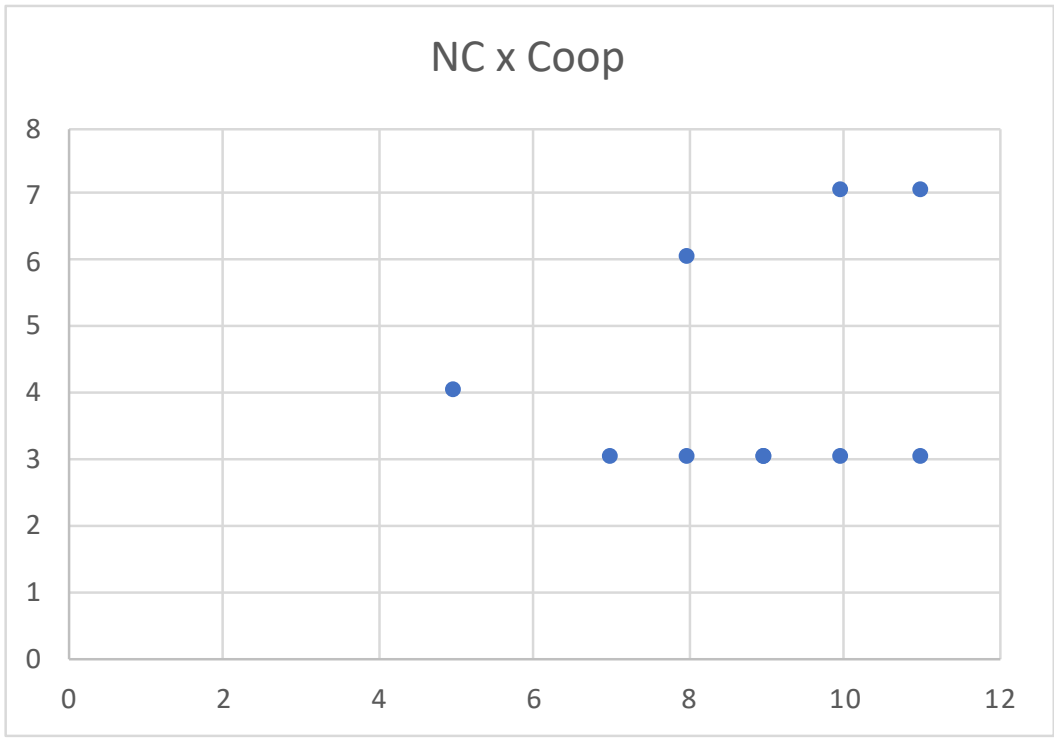

Figure 3. Networking Capacity x Cooperation - *Fintechs* (Source: Prepared by the authors).

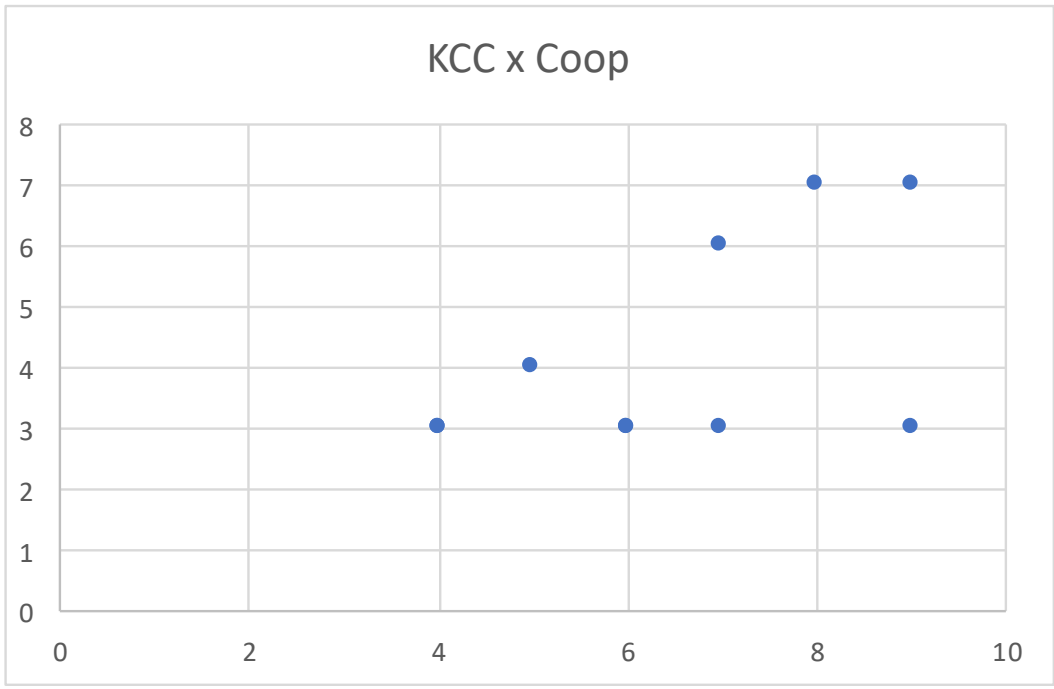

Figure 4. Knowledge Conversion Capacity x Cooperation – *Fintechs* (Source: Prepared by the authors).

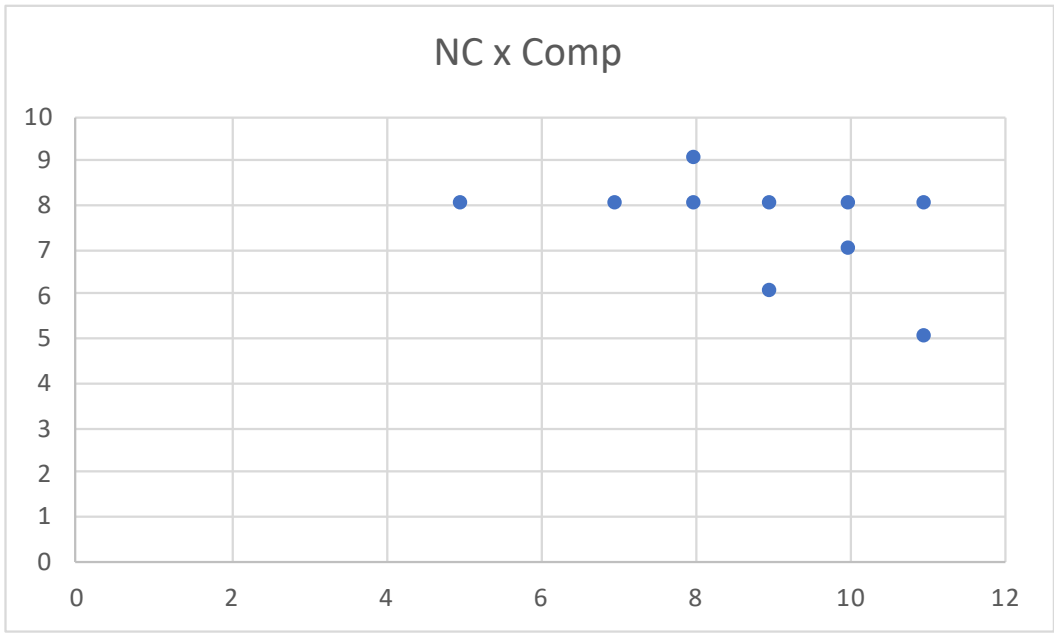

Figure 5. Networking Capacity x Competition - *Fintechs* (Source: Prepared by the authors).

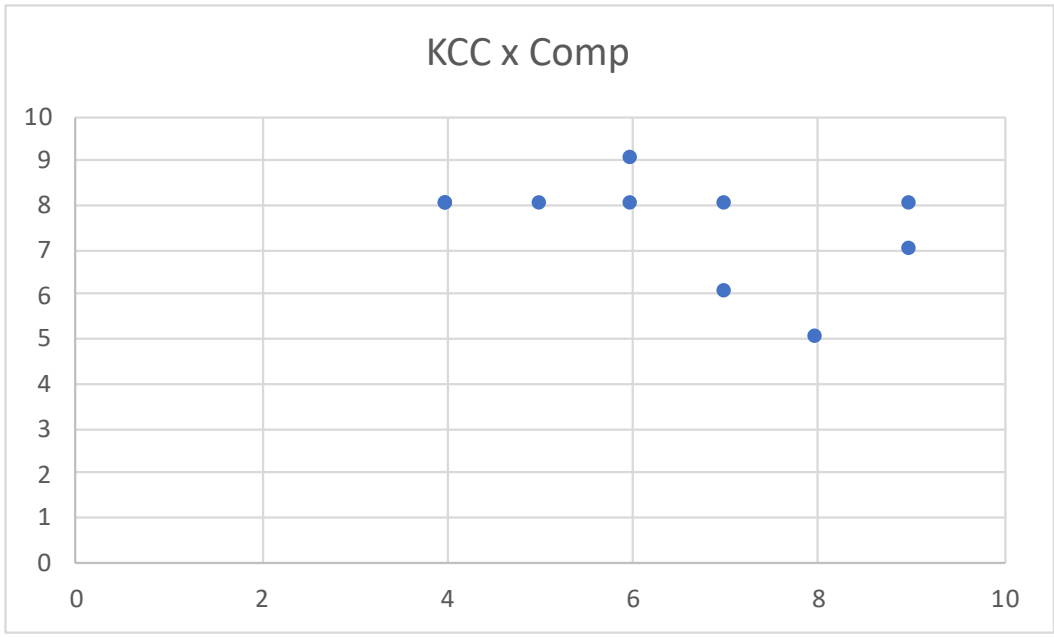

Figure 6. Knowledge Conversion Capacity x Competition – *Fintechs* (Source: Prepared by the authors).

From empirical evidence, and consequently, from the assigned scores, it follows that the financial services market is a highly competitive environment, confirming the literature (Lee & Shin, 2018; Romanova & Kudinska, 2017). However, cooperation was rated as medium in this market, indicating an attitude towards cooperation, where practices and information are shared and partnership ventures are developed, but without losing the competitive vocation inherent to companies in this industry.

Comparatively, banks are more willing to cooperate and less willing to compete than Fintechs. The ranking of the constructs of companies classified as Fintechs shows this finding from the

generated Display: medium Knowledge Conversion Capacity, high Competition Fintechs vs Incumbents, medium Cooperation Fintechs vs Incumbents (lowest score), and medium Networking Capacity.

The knowledge conversion capacity was rated as medium, approaching the upper range (High), indicating that companies in this sector have a strong ability to innovate their supply of products and services, changing knowledge and information into solutions for customers. The level of knowledge of partners and competitors' products is high for both employees of traditional banks and of Fintechs.

Internal communication seems to be the common point between the two types of companies, since a large part of the respondents mentioned this attribute as very well handled within organizations. Communication is constant, open, and clear. The perception is that information flows fast and democratically throughout the companies.

The networking capability in this market was rated as medium, getting very close to the upper range (High), which shows a vocation for frequent and intense interactions between companies, suppliers, niche partners, and competitors. The data also showed an intense participation of suppliers in the development of solutions, especially in the interviews where the respondent identified technology companies as key partners. Information about goals and strategies is obtained informally, and there are no explicit mechanisms for the exchange of information, which leads to the understanding that Fintechs are fighting the war alone, without joining efforts for the development of their business lines.

By assigning scores to the constructs suggested for Fintechs, and with the triangulation of empirical evidence, we observed that Fintechs are more willing to compete with established institutions than to cooperate with them. There is also no propensity to create partnerships with other Fintechs for mutual support and development of each company's business. They show little proximity to traditional banks, having a vertical structure and little inclination to relate to other players. The new entrants' capacity for knowledge conversion was also below the market average. Part of the interviewees do not know exactly who their clients are, what niches the company serves, and have not defined the personas and solutions for each need. This shows a gap for the customization of products and solutions.

Table 2 shows the comparison regarding the classification of constructs:

Table 2. Comparison of Construct's Classification

Construct	Ecosystem	Traditional	Fintechs
Knowledge Conversion Capacity	High	High	Medium
Competition Fintechs vs Incumbents	High	Medium	High
Cooperation Fintechs vs Incumbents	Medium	Medium	Medium
Network Capacity	Medium	High	Medium

Source: Prepared by the authors.

5 Conclusion

In this paper, we sought to understand the dynamics of cooperation and collaboration between Fintechs and traditional financial service providers, in order to reveal how companies interact with partners and competitors. Given the impact caused to the financial market by the digitalization of transactions and the focus shift from product to customer, it is essential to deepen the understanding of the new dynamics, and of the strategies adopted by established institutions, for their sustainability and the survival of new entrants.

By shedding light on how traditional financial institutions with decades of existence operate, the results show a panorama of how these organizations are reacting to the emergence of new companies in the financial sector, as well as presenting how the constructs of knowledge conversion capability and networking shape intra and inter-organizational relationships.

Fintechs are financial business startups that emerge as a technological innovation, which stand out in the market due to lower interest rates and fee exemption for their consumers (Beal Partyka, Lana, & Bahia Gama, 2020), arising from the absence of regulation in the market. They also present themselves under the innovative mantle and have greater flexibility and less bureaucracy. In addition, they offer more agility in documents' reception, credit analysis, and receipt, compared to the services offered by traditional companies.

The results show that traditional financial providers have adopted as strategy the collaboration with Fintechs for operating in the financial market. Their main dynamics are the acquisition of Fintechs; launching their own subsidiaries; creation of risk funds to finance "Fintech" services; the reformulation of a service brand acquired from these companies; establishing Fintech startup programs; purchase and sale of products and services for Fintechs; and partnerships with these companies. In addition, collaboration has been the best way found by traditional providers of financial services providers to compete with these companies in the financial market (Iman, 2019).

A limitation of the research concerns the generalization of the conclusions, especially when the research is carried out on a limited number of observations. Even though the stakeholder views on competition and collaboration analyzed in the case study are complex, they cannot be considered representative of all markets and geographies. A limitation of the qualitative method refers to the need to extrapolate what is beyond the text. Perhaps there are themes that are repressed, difficult to verbalize or difficult to manifest visually. Another relevant factor is that the financial services sector was deliberately chosen for a better understanding of the specific theme.

Since the study was based on data triangulation, the fact that we could not make technical visits for an ethnographic study and for collecting deeper empirical evidence was a limitation of this research. Despite the efforts to quantify and classify the constructs, this paper has a qualitative nature, which can open space for questions on the scientific validity of our inferences. Certain that qualitative and quantitative data can be handled complementarily, future studies could focus on statistical analysis techniques to deepen the understanding of this phenomenon.

Specifically, the impact of competition versus collaboration between Fintechs and traditional financial service providers on financial performance could also be analyzed. Additionally, country characteristics and gender differences in willingness to use new financial technologies could be factors to be confronted with fintechs' willingness to compete or collaborate with traditional financial service providers (Saksonova & Kuzmina-Merlino, 2017; Chen, Doerr, Frost, Gambacorta & Shin, 2023).

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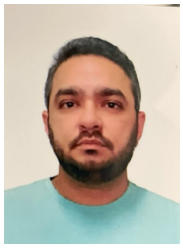
Biographies

Rozana V. P. Silva. Master's in Management and Organizational Studies from the State University of Ceará, she is also a graduate in Economics and holds a postgraduate degree in Finance and Economics from FGV-SP (Getulio Vargas Foundation in São Paulo). With over 15 years of experience in the financial market, she has worked in financial institutions such as Itaú Bank, Safra, and Santander. She brought passion for strategy and results to her management in investment advisory firms, serving as managing partner since 2019. Currently, she is a federal public servant.
ORCID: https://orcid.org/0009-0004-2677-6701
CRediT Statement: Writing – original draft

Elias P. Lopes Júnior. Professor at the Center for Applied Social Sciences at the Federal University of Cariri (UFCA). He is currently Coordinator of the Masters in Administration at UFCA. He has experience in the administrative and teaching areas, working mainly in the areas of Strategy, General Administration, Finance and Innovation.
ORCID: https://orcid.org/0000-0001-7288-9329
CRediT Statement: Conceptualization; Investigation; Project administration; Supervision; Writing – review & editing

Samuel F. Câmara. PhD in Economics from UFPe, Post Doc in Innovation Management from FGV, Chief Innovation Scientist of the State of Ceará, CNPq Productivity Fellow, Associate Professor at the State University of Ceará.
ORCID: https://orcid.org/0000-0002-8333-6997
CRediT Statement: Conceptualization; Formal analysis; Methodology; Supervison



Paulo T. Torres Júnior. Professor at the State University of Ceará Ph.D. candidate in Administration - PPGA/UECE Master's in Public Policy Evaluation - PPGAPP/UFC Lawyer specializing in Public Law and Administrator. Researcher at the Blue Economy (BLUELAB) and Management of Technology Innovation and Cities (GESTIC) laboratories at the State University of Ceará. Lattes: http://lattes.cnpq.br/2804676052231505
ORCID: https://orcid.org/0000-0002-8332-1955
CRediT Statement: Conceptualization; Data curation; Formal analysis; Methodology; Resources; Software; Validation; Writing – review & editing