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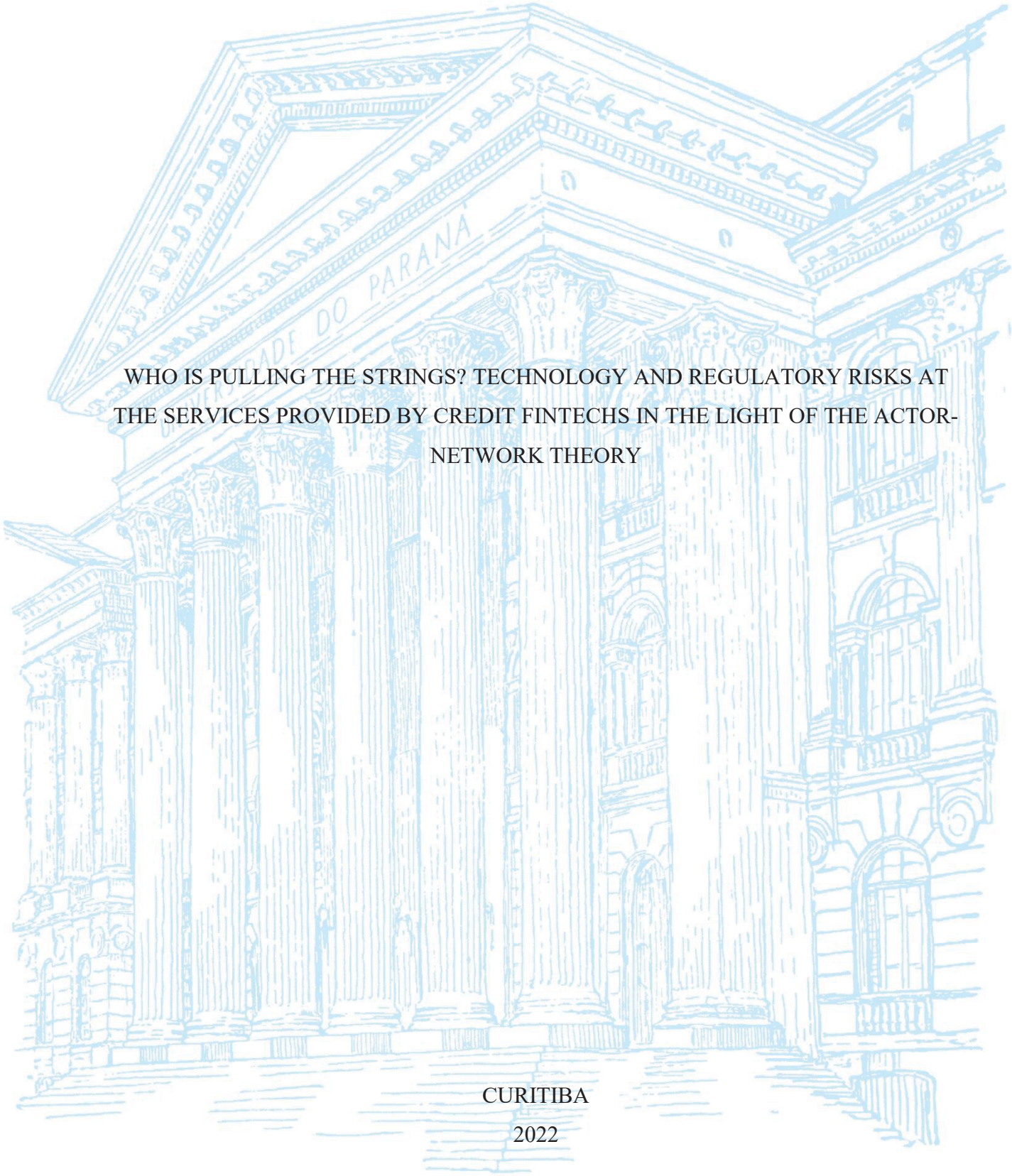

WHO IS PULLING THE STRINGS? TECHNOLOGY AND REGULATORY RISKS AT THE SERVICES PROVIDED BY CREDIT FINTECHS IN THE LIGHT OF THE ACTOR-NETWORK THEORY

CURITIBA

2022

GIOVANI CRUZARA

WHO IS PULLING THE STRINGS? TECHNOLOGY AND REGULATORY RISKS AT THE SERVICES PROVIDED BY CREDIT FINTECHS IN THE LIGHT OF THE ACTOR-NETWORK THEORY.

Tese de Doutorado apresentada ao curso de Pós-Graduação em Administração, do Setor de Ciências Sociais Aplicadas da Universidade Federal do Paraná, como requisito parcial à obtenção do título de Doutor em Administração.

Orientadora: Prof. Dra. Ana Paula Mussi Szabo Cherobim.

CURITIBA
2022

DADOS INTERNACIONAIS DE CATALOGAÇÃO NA PUBLICAÇÃO (CIP)
UNIVERSIDADE FEDERAL DO PARANÁ
SISTEMA DE BIBLIOTECAS – BIBLIOTECA DE CIÊNCIAS SOCIAIS APLICADAS

Cruzara, Giovani
Who is pulling the strings? Technology and regulatory risks at the services provided by credit fintechs in the light of the actor-network theory / Giovani Cruzara. – Curitiba, 2022.
1 recurso on-line : PDF.

Tese (Doutorado) – Universidade Federal do Paraná, Setor de Ciências Sociais Aplicadas, Programa de Pós-Graduação em Administração.
Orientadora: Profa. Dra. Ana Paula Mussi Szabo Cherobim.

1. Risco financeiro. 2. Teoria ator-rede. 3. Tecnologia disruptiva. 4. Banco Central do Brasil. I. Cherobim, Ana Paula Mussi Szabo. II. Universidade Federal do Paraná. Programa de Pós-Graduação em Administração. III. Título.

Bibliotecária: Maria Lidiane Herculano Graciosa CRB-9/2008

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ITAMIR CACIATORI JUNIOR
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Dedicada a Deus, a vida, as energias, ou àquilo que você optou por acreditar.

Dedicada ao amor da minha vida, pela ajuda em todos os momentos de dificuldades e por não me deixar desistir de meus sonhos.

Dedicada à minha família, que sempre esteve presente para me apoiar.

Dedicada a todos os meus amigos, por terem um papel fundamental para que essa tese se tornasse possível.

E é claro, dedicada a toda a estrutura, aos professores e aos servidores do PPGADM, por todo o auxílio e aprendizado compartilhado no decorrer dessa jornada.

AGRADECIMENTOS

A Deus, em primeiro lugar. Por colocar as coisas certas nos locais certos. Não teria como iniciar os agradecimentos se não deixando meu muito obrigado pela infinidade de coisas boas que foram colocadas em minha vida.

Gostaria de agradecer também a pessoa que ao longo dos últimos anos me aguentou, me ouviu, me amparou e me fez seguir em frente, mesmo nos momentos em que desistir parecia ser não apenas a melhor, mas a única opção possível. Kamila Maria Strapasson, agradeço a você, meu amor. Que há mais de 11 anos compartilha comigo não apenas os momentos felizes, mas também as dificuldades e os desafios. Eu jamais teria conseguido sem você e quero que saiba que se existe uma pessoa fundamental não apenas para a conclusão dessa tese, mas para toda a minha vida, essa pessoa é você.

A minha família, deixo também meu muito obrigado. À minha mãe Milene, meu pai Angelo e ao meu irmão Giorgio. Por todo o apoio que foi colocado em mim quando optei por iniciar essa vida acadêmica. Isso lá em 2016, quando entrei no mestrado. Quando em 2019 eu disse que iria seguir para o doutorado, vocês em nenhum momento deixaram de me apoiar e me incentivar para seguir em frente. Deixo também um agradecimento especial para minha querida Vó Olivia (Diva para os mais chegados), que infelizmente acabou por nos deixar nos momentos finais de meu doutorado.

Gostaria de agradecer também a todos os meus amigos, com quem compartilhei e continuo compartilhando tristezas, medos, e é claro, muitas alegrias e bons momentos. Em especial, gostaria de agradecer ao Emanuel Campigotto Sandri, que representa a outra metade da turma de IT 2019, do doutorado do PPGADM. Alguém com quem compartilhei os desafios de várias disciplinas ao longo de 2019 (afinal éramos apenas nós dois na turma, não é?!) E que ao longo desses anos de doutorado se tornou um grande amigo.

Paulo Morilha Lanzarini Gomes e Pedro Chapaval Pimentel, que desde 2019 também se mostraram pessoas fundamentais para superar os desafios que a vida acadêmica e um curso de doutorado exigem.

Luís Filippe Serpe, meu veterano do doutorado, com quem compartilhei (e muito) trilhas sonoras de games para tentar “esquecer um pouco da tese” ou para tentar encontrar “aquela inspiração que faltava para a concluir o trabalho”.

Geociomar Simão Justen (o famoso Simão) e Matheus Freitas, pessoas com quem desde 2016 compartilho bons momentos e alegrias.

E é claro, ao meu amigo de Matheus Jose da Silva Ruzyk, que conheço desde os 3 anos de idade quando começamos a estudar juntos, por nunca negar ajuda e por ser alguém que você sabe que pode contar mesmo nos momentos mais difíceis.

Agradeço também a minha orientadora Ana Paula Mussi Szabo Cherobim, que aceitou assumir minha orientação em meados de 2019. Deixo meu muito obrigado por todos os ensinamentos e pelo apoio prestado ao longo dessa jornada. Em especial por ter tornado esse processo de doutorado muito mais leve do que eu imaginei que seria.

Agradeço a todos os demais professores e servidores do PPGADM e da UFPR, que direta e indiretamente contribuíram para que esse trabalho se tornasse realidade.

E de forma alguma menos importante, gostaria de agradecer a filosofia que procuro seguir em minha vida. Ao Yoga, que há anos me acompanha, me ensina, me nutre e me acalma. Tudo isso foi mais fácil por ter isso em minha vida. Tanto para "aprender a respirar" em uma situação difícil, como para ter mais flexibilidade com situações inesperadas e até mesmo para aprender a aceitá-las e compreende-las.

Quero que todos vocês saibam que não seria possível terminar essa tese sem vocês, que em seus devidos momentos me ajudaram, me ampararam e me fizeram querer continuar seguindo em frente.

Por fim, agradeço também a CAPES pelo apoio financeiro fornecido para a realização deste estudo.

For after all what is man in nature? A nothing in relation to infinity, all in relation to nothing, a central point between nothing and all and infinitely far from understanding either. The ends of things and their beginnings are impregnably concealed from him in an impenetrable secret. He is equally incapable of seeing the nothingness out of which he was drawn and the infinite in which he is engulfed."

Blaise Pascal.

RESUMO

As FinTech de Credito têm sido objeto de atenção dos Reguladores Brasileiros pelo seu potencial disruptivo: viabilizam rápido acesso a crédito ou a serviços de financiamento. Nessa relação, entra em cena a dualidade entre tecnologia e regulação, respondendo por conexões que usualmente não estão previstas nas análises. Este estudo analisa como a relação entre o Banco Central do Brasil e as FinTechs de Credito atua nos aspectos de risco, considerando a relação entre tecnologia e regulação. O suporte teórico se baseia na Teoria Ator-Rede, que afirma que entidades não humanas (por exemplo, sistemas de informação e regulamentos) podem ser atores que criam agência. Portanto, eles devem ser levados em consideração para a análise. Essa abordagem permitiu estabelecer a cadeia de conexões entre os diferentes atores, levando assim a avanços tanto para a teoria quanto para a prática, uma vez que se destacou o que explica a o funcionamento (ou não) dessa relação.

Palavras-chave: FinTechs de Crédito; Teoria Ator-Rede. Risco; Tecnologia. Regulação; Banco Central do Brasil.

ABSTRACT

Credit FinTechs have been the object of attention from Brazilian Regulators for their disruptive potential: they enable quick access to credit or financing services. In this relationship, the duality between technology and regulation comes into play, accounting for connections that are usually not foreseen in the analyses. This study analyzes how the relationship between the Central Bank of Brazil and Credit FinTechs acts in the aspects of risk, considering the relationship between technology and regulation. The theoretical approach is based on the Actor-Network Theory, stating that non-human entities (eg. information systems and regulations) can be actors that create agency. Therefore, they must be taken into account for analysis. This approach allowed the chain of connections to be determined between different actors, thus leading to advances both in theory and in practice since what explains the functioning (or not) of this relationship was highlighted.

Key-words: Credit FinTechs; Actor-Network Theory; Risk; Technology; Regulation; Brazil Central Bank.

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LIST OF ABBREVIATIONS

ABCD	Brazilian Association of Digital Credit
ABFintechs	Brazilian Association of FinTechs
ANPD	National Data Protection Authority
ANT	Actor-network Theory
APIs	Application Programming Interfaces
BAAS	Bank as a Service
BCB	Brazilian Central Bank
BNDES	The Brazilian Development Bank
COAF	Financial Activities Control Board
CIP	Interbank Payments Chamber
CMN	National Monetary Council
CNSP	National Private Insurance Council
CVM	Securities and Exchange Commission of Brazil
GAFI	GAFI / FATF - Financial Action Task Force
GDP	Gross Domestic Product
GDPR	General Data Protection Regulation
ICT	Information and communication technologies
IOF	Tax over financial operations
IOT	Internet of Things
IT	Information Technology
P2P	Peer-to-peer
POS	Point of Sale
SCD	Direct Credit Company
SDK	Software Development Kit
SEP	Peer-to-Peer Lending Company
SFN	Nacional Finance System
SPB	Brazilian Payment System
SPI	Instant Payment System
SSL	Security Socket Layer
TEN	Techno-economic network
UIF	Financial Intelligence Unit
VPN	Virtual Private Network

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1. INTRODUCTION

Where to start? One might have asked. The answer is simple. This study starts with the connections. A rather different answer than ‘start with the actors’, ‘start with the entities’, or even ‘start with the context’, that we used to hear. This study starts with the connections, aiming to understand the information flow, and how mediators act, shape, and (re)assemble the network. This work starts with the connections, aiming to understand who is pulling the strings that make the financial services provided by Credit FinTechs work (or not), who are actors (mediators), and which technology and regulatory entities are acting and thus allowing this system to work (or not). As Bruno Latour stated in his book named “Reassembling the Social”, it is time to look at pieces that were before considered only aggregates of the network (LATOUR, 2007, p. 22). To this end, non-human actors come into play here.

Latour (1987) first presented that idea in the study “Science in Action: How to follow scientists and engineers through society”. He stated that the outcome of successful negotiations would be an actor-network of aligned interests. Later, in 1991, two studies discussed the idea of technology becoming an actor in the network. One was performed by Latour (1991), entitled ‘Technology is a society made durable’ and another one was performed by Callon (1991), entitled ‘Techno-economic networks are irreversible’.

Both studies consider science and technology as a product of interaction among several actors. However, the work of Callon (1991) emphasized the need for a network considering not just humans, but also non-human actors (which according to the author is what holds society together). Latour (1991) complimented it with the concept of a Techno-economic network (TEN), which encompasses the idea of intermediaries, actors, and the translation of information. These two works are considered the roots of the Actor-Network Theory (ANT), displaying a better description of power and domination in society (GIDDENS, 1985; BARNES, 1988).

To this end, ANT states that power is related to the social forces of Machiavelli’s concept. In other words, a person is kept in her place through the handling of other people, who are in turn kept in place by other people (LATOUR, 1988, p. 22). As pointed out by Giddens (1985), structural properties are what express forms of power and domination. As such, the author stated that power is something inherited from the social association, which can thus be defined as something “[…]generated in and through the reproduction of structures of domination.” (GIDDENS, 1985, p. 258). Thus, Latour (1991, p. 103) argument is that to be able to understand domination, we need to include non-human actants as those would better hold the society together as a durable whole.

Since the structure is perceived and understood as something unmovable in everyday life (STEEN; COOPMANS; WHYTE, 2006), agency arises out of the confrontation between actors (power and domination - (GIDDENS, 1985)). To this end, ANT assumes that you don't need to discard agency when addressing structure. With an approach where the structure is seen as something held in place, the agency is suggested to be addressed in terms of action (STEEN; COOPMANS; WHYTE, 2006). In other words, the agency is related to the connections that an actor established, which thus "affects other actors" (STEEN; COOPMANS; WHYTE, 2006, p. 307).

With this background, ANT studies were first developed to explain sociological events of transformation (ANONG; KUNOVSKAYA, 2013). Later, studies were adapted to information systems research, where technological aspects of information and communication technologies (ICT) started to be explored (TATNALL, 2014; CAMPBELL-VERDUYN; GOGUEN; PORTER, 2017; EZE; CHINEDU-EZE; BELLO, 2019; SAGE; VITRY; DAINTY, 2020).

Considering recent technological developments (KIEL; ARNOLD; VOIGT, 2017), and the rapid growth of Internet-based services, an impact on the traditional financial sector was created. That impact is being driven by technology-based organizations known as FinTechs (SHIM; SHIN, 2016; CACIATORI JUNIOR; CHEROBIM, 2020), which are organizations that display business models that aim to merge Information Technology (IT) with the provision of financial services (BANCO CENTRAL DO BRASIL, 2018a; CHEN; WU; YANG, 2019).

The high utilization of IT allows FinTechs to provide very specific financial services to their customers. Anagnostopoulos (2018), for example, states that FinTechs could bring a new paradigm to the provision of financial services, challenging incumbent organizations that do not display an innovative approach to keep the pace of technology change (FLIGSTEIN, 1996).

Nevertheless, the innovations provided by FinTechs and the challenges presented to incumbent organizations do not occur without risk. The literature demonstrates that issues start to appear even with FinTech's classifications. This occurs because this type of organization can provide more than a single financial service (CACIATORI JUNIOR; CHEROBIM, 2020), which when combined with the high IT usage, often results in cybersecurity and data risks (YUNIARTI; RASYID, 2020). Thus, several studies aimed to provide classification schemas for this type of organization.

Caciatori Junior and Cherobim (2021) is an example, where a categorization of FinTechs composed of nine categories is proposed. Their study uses a qualitative and

quantitative approach to have FinTechs classified, also comparing the provided services with incumbent bank institutions. To this end, the authors demonstrate a reliable result of FinTech categorization. One type of FinTech identified by the authors is the “Credit FinTech”, which is classified under a category named “lending”. That category includes other FinTechs such as Crowdfunding and Debt negotiation, but they all have in common the aim to provide access to credit and/or financing services.

The access to these services resulted in this type of FinTech being one of the most critical from the regulatory perspective, especially due to risks posed to the financial system by the Peer-to-Peer (P2P) lending operations (CONTRERAS PINOCHET *et al.*, 2019).

P2P is viewed as something that allowed the connection between creditors and debtors (USANTI; RORO, 2018), thus expanding credit access to individuals (LUTHER, 2020). However, it is at the same time viewed as a mechanism that increases the risk to the financial system (USANTI; RORO, 2018; LUTHER, 2020; YANDRA; SOPACUA, 2020; YUNIARTI; RASYID, 2020).

The literature demonstrates that services provided by Credit FinTechs are mainly related to three types of risk: credit risk, data risk, and operational risk. Credit risk occurs due to the increase in credit access and the mechanisms used by FinTechs to classify the credit rate of individuals (SERRANO-CINCA; GUTIÉRREZ-NIETO; LÓPEZ-PALACIOS, 2015; YANDRA; SOPACUA, 2020). Data risk occurs due to the high usage of IT to have the activities performed (LUTHER, 2020; USANTI; RORO, 2018). And operational risk occurs due to failures in the IT systems and internal processes that could result in instability in the financial system (USANTI; RORO, 2018; YUNIARTI; RASYID, 2020).

To address these risks, the Brazilian Central Bank (BCB) issued, in 2017, two public consultations to address Credit FinTechs and the providers of IT services for financial institutions (BANCO CENTRAL DO BRASIL, 2017a, 2017b). These two public consultations resulted in two resolutions: (I) Resolution No. 4.656 (BANCO CENTRAL DO BRASIL, 2018b), which specifically aimed to regulate organizations classified as Credit FinTechs; and (II), Resolution No. 4.658 (BANCO CENTRAL DO BRASIL, 2018c), which aimed to regulate the IT and cloud services provided to financial organizations authorized to work by the BCB.

These two resolutions were created aiming to mitigate risks related to Credit FinTechs, especially due to the growth of these organizations in the country over the last years (CONTRERAS PINOCHET *et al.*, 2019; FINTECHLAB, 2016, 2017).

Thus, before those regulations, Credit FinTechs were working at the margin of the financial system. Nowadays, they have the possibility of being a financial institution authorized

to work by the BCB, being categorized as an SCD (*Sociedade de Crédito Direto*), translated to English as "Direct Credit Company", or a SEP (*Sociedade de Empréstimo Entre Pessoas*), translated to English as "Peer-to-Peer Loan Company", (BANCO CENTRAL DO BRASIL, 2018d). Both of these institutions are under the regulation of Resolution No. 4.656.

From the practical justification, the choice of Credit FinTechs for the present research was twofold. First, this type of organization generates risks related to credit, data, and operational aspects (CONTRERAS PINOCHET *et al.*, 2019; LUTHER, 2020; YUNIARTI; RASYID, 2020), which if not properly managed could turn into systemic risks (BANK INDONESIA, 2016) and thus compromise the financial stability. Second, this type of organization displayed considerable growth over the past years (CACIATORI JUNIOR; CHEROBIM, 2021), especially in the Brazilian scenario (FINTECHLAB, 2016, 2017, 2020), which draws the attention of regulatory entities that aim to better comprehend the scenario related to Credit FinTechs to develop regulations that can provide mitigation of risks.

However, regulations should not create barriers to innovation and technology developed and used by these organizations, since this would hinder their development (BANCO CENTRAL DO BRASIL, 2019). This demonstrates the importance of a work that explores the financial services provided by Credit FinTechs. Especially at the SCD and SEP institutions, as those are novel institutions where the relationship between technology and regulation is not yet fully comprehended. To this end, this study can assist with an analysis that shifts the focus to the connections (LATOUR, 2007), allowing actors and their connections to be put in evidence and ultimately providing regulators a tool that can serve as a starting point to better understand where technology has more impact and where mitigation of risks should be focused.

From the theoretical perspective, this work states that ANT can provide valuable insights for the comprehension of this scenario since this theory aims to specifically explore the connections between the various actors that composes a network. Thus, the relationship between technology and regulation considering the aspects of risks turn into a valuable scenario to be analyzed under the lenses of ANT. Some authors, such as Anongand and Kunovskaya (2013), for example, point out that some studies use ANT to understand the technology usage in the financial sector, while other studies explore the relationship among the various actors of this sector, with emphasis on technological aspects (LENGLET; MOL, 2016; JEFFERIS, 2018; ISLAM; MÄNTYMÄKI; TURUNEN, 2019).

However, those studies assume that agency (a central aspect of ANT) is simply "out-there". The few studies that explore agency aspects of ANT in the financial sector (eg. RAUTIAINEN; SCAPENS, 2013; KACK, 2018; WARD, 2018), focus either on regulation or

on technological aspects, neglecting a central question that is precisely the relationship between technology and regulation.

Furthermore, this study proposes that to understand this actor-network, two main actors need to be explored. One is the Brazilian Central Bank, an actor that is driving the actions from the perspectives related to the mitigation of risks. And the other is the Credit FinTechs, which are driving the actions more related to increase of risks, due to credit access that is granted and also due to novel technologies that are used. Thus, the study proposes an approach that extends previous ANT studies stating that in that relationship between technology and regulation, the assembly of an actor-network using either only the BCB or only the Credit FinTechs as the focal actors would result in an incomplete view of the true relationships that the actors have among one another.

That relationship between technology and regulation is precisely what some recent financial studies have discussed, where it is stated that with increased technology utilization in the financial sector (KING, 2018; BANDARA; VIDANAGAMACHCHI; WICKRAMARACHCHI, 2019), a new understanding of the financial structure is needed to have risks identified and discussed, especially within FinTech organizations where technology is used at a fast pace (SHIM; SHIN, 2016).

Balasescu and Jain (2018), for example, demonstrate how different organizational actors (being human and non-humans) can shape the understanding of the financial crisis and change what is understood as a financial risk. In their study, aspects of the agency are directly related to the action performed by an actor when it comes to financial risk.

Campbell-Verduyn, Goguen and Porter (2019) on the other hand, demonstrate that a long chain of information tends to accumulate risk, which renders the financial system vulnerable. Another study performed by the same authors discusses how technology actors, such as Big data, may affect the governance of risk at financial institutions (CAMPBELL-VERDUYN; GOGUEN; PORTER, 2017).

These studies have in common that they demonstrate how regulators must act carefully to maintain the stability of the financial system, performing actions that aim to reduce systemic risks.

Considering that financial risks are one of the most discussed topics of financial stability (SILVA; KIMURA; SOBREIRO, 2017), and also considering that ANT assumes the existence of non-human entities such as technology and regulation that can also become actors, this study sustains that ANT is a theoretical approach that provides valuable insight to understand the relationship between technology and regulation, which reflects on new

directions of how risk can be addressed and minimized at financial organizations, especially where technology is used at a fast pace, such as Credit FinTech organizations.

To this end, the following research problem was developed for this study:

“How does the relationship between the BCB and the Credit FinTechs act on the aspects of risk, considering the relationship between technology and regulation?”

To answer this question, the following general objective was created: Analyze how the relationship between the BCB and the Credit FinTechs act on the aspects of risk, considering the relationship between technology and regulation.

To achieve this main objective, the following specific objectives were developed:

a) Identify the services provided by Credit FinTech organizations;
b) Identify the entities present at the services provided by Credit FinTech organizations;
c) Analyze the creation of agency based on the aspects of risk that encompasses the Credit FinTechs;
d) Analyze which entities are “acting” on the structure;
e) Explain the actor-network on the relationship between the BCB and the Credit FinTechs;
f) Explain the impact of the relationship between the BCB and the Credit FinTechs on the aspects of risk, considering the relationship between technology and regulation.

Following this introduction, the next section of the study explores the theoretical background. After that, section three encompasses the methodological procedures, which is followed by section four where the Data analysis is performed to answer the proposed research questions. Lastly, the final section contains the study conclusions, limitations, and also future research directions.

2. THEORETICAL BACKGROUND

This section encompasses the theoretical background. It starts with the discussion of the ANT, exploring its foundations. Later, it addressed the aspects of the agency, where topics related to the theories of structuration and institutionalization are also discussed. After that, the literature related to credit FinTechs is discussed, where aspects of risk are also explored accounting for the relationship between technology and regulation.

2.1. ACTOR-NETWORK THEORY

Latour (1991, p. 103), starts his work with the following question: “Is it possible to devise a set of concepts that could replace the technology/society divide?” That is a tough question, since science and technology lie “at the heart of social asymmetry” (CALLON, 1991, p. 132). ANT is one theory that aims to deal with this situation, drawing from both Economics and Sociology literature.

While Economics speaks of intermediaries or “things” that draw the actors together, requesting interaction to take place (intermediaries must circulate, such as a consumer and a producer interacting via a product); Sociology speaks that actors can only be defined in terms of their relationships (CALLON, 1991, p. 134).

Thus, ANT moves away from the classic sociology of the social stream, where words such as power, society, structure, and context jump ahead and connect the arrays of life, history, and forces that allow one to see everything in the case at hand. That is the critique that Latour makes of the sociology of the social, where “By speaking very well of power, society, structure, and context, it left behind some dark powers ‘pulling the strings’ of social interaction” (LATOUR, 2007, p. 22). Who is indeed “pulling the strings” is what this work aims to identify when it comes to the relationship between technology and regulation.

To achieve this, ANT proposes two concepts named intermediaries and actors. Intermediaries can be considered a collection of human and non-human, individual and collective entities, which are defined by the relationships that they enter (CALLON, 1991, p. 139). These intermediaries are, however, bypasses (LATOUR, 1991), they are the ones that transport meaning without transformation, or, in Latour (2007, p. 39) words: an input is sufficient to define their output.

Actors, on the other hand, are entities able to associate with intermediaries. In this sense, they are the ones that take the intermediaries and combine, mix, and modify them

(CALLON, 1991, p. 140-141). To this end, actors are called mediators, the ones that "[…] transform, translate and modify the meaning of the elements they are supposed to carry" (LENGLET; MOL, 2016, p. 5). According to Latour (2007), this process of modification is called translation, where actors (mediators) make their presence known by modifying the meaning of information carried (LENGLET; MOL, 2016).

This difference is important because entities that can be seen as actors for ANT are usually seen as intermediaries in social sciences. A very simple example can explain this situation: consider a financial organization providing a financial service through cloud computing technology, where the cloud technology is provided by an IT organization. The way entities are addressed in the sociology of the social, results in the cloud computing technology being considered only an intermediary. And that is partially correct. For a user accessing the service, the cloud platform most likely remains unknown. He might know that there is an IT organization somewhere that provides cloud technology. But the technology itself remains as an intermediary (a by-pass between the user and the service he wants to use). However, what happens if this technology, considered an intermediary, stops working? If we consider the sociology of the social stream, it remains an intermediary. This occurs because the way non-human entities are seen and treated by the sociology of the social stream does not allow them to become an actor. However, for ANT, this technology has now become an actor. That occurs because this entity has now modified the flow of information, giving new meaning to the output that is given to the end-user of the financial service, which, in this example, will most likely be an error message.

Recent technological developments, such as the Internet of Things (IoT), Machine learning, Collaborative Robots, Big Data, and Data Analytics also contributed to the debate of having technology being considered actors. These technologies, from a technical point of view, create a scenario that merges human and non-human entities (NAMBISAN *et al.*, 2017; CRUZARA *et al.*, 2020). This is something aligned with the words of Arminen (2010, p. 181), who states: "In a profoundly technologized world, materiality and technology are assembling the choreography of social life everywhere."

To this end, the words of Latour (2007, p. 73) seem very suitable to describe some of the current challenges: "[…] How is it that, in spite of this massive and ubiquitous phenomenon, sociology remains 'without object'?". The critique made is that technology was only analyzed in parallel with sociological aspects, an approach that persists nowadays. Latour's statements are directly related to the fact that sociology of the social considers objects such as technology

to have a limited function in social sciences, being hard to define and even harder to understand their role to assemble the networks (LATOUR, 1991).

Upon that, ANT proposes that to accept something more real, we need to accept the connection between human and non-human objects, where non-human objects like technology are sociologically considered equal to human objects (LATOUR, 2007). With this approach, technical objects will no longer be seen simply as artifacts or remote and enigmatic objects, but as entities that can now be part of the networks (CALLON, 1991), and also become actors of such connections (LATOUR, 1991). An approach that according to Latour (2007), would effectively allow us to understand 'who is pulling the strings of social relationships.

To achieve this, ANT sustains its approach based on five major uncertainties: (I) the nature of groups; (II) the nature of actions; (III) the nature of objects; (IV) the nature of facts; and (V) the type of study under the concept of 'science' (LATOUR, 2007).

The nature of the groups is the first uncertainty, to which ANT states that there's no social component to act as the 'starting point'. We "start with the connections" because of this first uncertainty. Since there is no social object to be the starting point, the connection between the objects is the starting point.

The nature of actions, second uncertainty, states that action is made without full consciousness. Thus, it has multiple agencies that should be addressed and disentangled. In this sense, ANT considers that actors do not 'act' alone (an actor needs to be understood in terms of their connection), resulting in that actors fill the world with agency (LATOUR, 2007).

Agency is further explored in the 'nature of objects', the third source of uncertainty, which states that objects have agency too. By objects, we are here referring to non-human entities, including technology. This uncertainty is the base that allows ANT to extend and modify the relationship between human and non-human actors (LATOUR, 2007).

The nature of facts, the fourth source of uncertainty, addresses two topics named matters of fact, and matters of concern. Here is where the process of translation of information comes into place. What ANT looks for are the matters of concern, which characterizes the entities as being gatherers. Thus, agencies are added as matters of concern to the social. This differentiates translation (a connection that transports information and also induces two mediators to co-exist) and transportation (a connection that simply carries information from one place to another). Agency is created by the process of translation, which characterizes an entity as being an actor (LATOUR, 2007).

And lastly, the type of study under the concept of science, the fifth source of uncertainty, is related to the idea of "writing down risk accounts". In other words, when we are

writing down social connections, we are writing down on account (LATOUR, 2007). This last uncertainty provides the basis for the methodological approach of ANT and also encompasses the three movements of ANT: (localizing the global; redistributing the local; connecting sites), through which ANT is put into practice (LATOUR, 2007). These movements are related to the operationalization of ANT and are explored in more detail in the methodological section.

It's important to emphasize that these five uncertainties display a direct relationship with Agency (GIDDENS, 1985), which is discussed in ANT literature considering how ANT relates agency with structure (KACK, 2018; WARD, 2018).

The relationship between agency and structure is connected to the institutional environment, as demonstrated in the study of D'Arcy and Keogh (2002, p.23), where the authors state that the institutional environment may determine the social actions of an actor. While, at the same time, the actions of this actor may change the institutional environment. In this sense, the theory of structuration (GIDDENS, 1985) comes into play here, where agency occurs with action.

To this end, the next section explores in more detail the aspects of agency, along with the theory of structuration (GIDDENS, 1985) and also the institutional aspects that encompass the ANT.

2.2. STRUCTURE, AGENCY, AND INSTITUTIONAL ASPECTS

Structure, as the name suggests, is considered something rigid. Thus, it's very unlikely that structure will change due to the action of individual actants (WARD, 2018). As stated by Steen, Coopmans and Whyte (2006, p. 305) "Structures […] may change over time but the actions of one individual are unlikely to alter them". At ANT, however, things are not seen as structures, but as something that is 'held in place'.

To be held in place, a lot of effort is requested (LATOUR, 1991, 2007). This is what Latour (2007) meant when he stated that actors do not 'act' alone and that they fill the world with agency. To be held in place, a lot of action is requested and a lot of agency is created.

According to Doak and Karadimitriou (2007), this approach allows ANT to resolve the dichotomy between structure and agency, allowing one to understand in which ways actors seek to shape the structure, being recursively shaped by their actions (GUY; HENNEBERRY, 2000). To this end, ANT suggests that actors operate with things held in place while are, at the same time, part of their formation (WHIPP, 1996).

It's important to remember that actors that shape the structure include non-human objects (LATOUR, 2007), resulting in that those are considered to be part of the structure as well (WICKRAMASINGHE; TATNALL; BALI, 2012).

This argument is mainly developed by Latour (1988) in his work entitled "The Prince for Machines as well as for Machinations" which is a reference to Machiavelli's rendering of "The Prince". Latour (1988) points out that the word, and, more importantly, power, is composed of social forces in Machiavelli's concept. In this sense, a person is kept in her place through the handling of other people, who are in turn kept in place by other people (LATOUR, 1988, p. 22). The ANT argument shifts this approach with the premise that nowadays, to understand the world and how power is accumulated and maintained, technologies, materials, and other non-human entities need to be considered as well (STEEN; COOPMANS; WHYTE, 2006).

This argument, of course, is also explored in the literature considering the aspects of Power (FOX, 2000; SARKER; SARKER; SIDOROVA, 2006; SOARES *et al.*, 2021). These studies have explored the Foucauldian understandings of Power, usually either demonstrating where power was found in the scenario analyzed, or using a theoretical approach to demonstrate how ANT relates to power.

Power can thus be considered a moving substrate of force relations that is always local and unstable (FOUCAULT, 1984, p. 93). To this end, ANT understands that power is not something possessed, but an active force (FOX, 2000).

Latour itself has explored the aspects of Power, pointing to the existence of a "translation" model of power. This model would allow us to focus on the links in the chain (network), allowing the local agency to be identified (LATOUR, 1986). This approach is also aligned with the idea that power by itself, cannot be used to explain anything (FOX, 2000), requiring it to be understood by the action of others (LATOUR, 1986).

To understand this "action" Callon (1986) proposed a method where four stages are described. The first one is named *problematization*, where a set of actors define a problem that needs to be addressed. This set of actors thus states that they have a "solution" for the problem (DOOLIN; LOWE, 2002), or, in other words, this is where actants shape problems and solutions (CONTESSE *et al.*, 2021). In this first step, the focal actor also establishes an *obligatory passage point*, where it thus renders itself indispensable (SARKER; SARKER; SIDOROVA, 2006) and is later followed by the other actors (FOX, 2000). Since ANT considers that non-humans can also be actants, the obligatory passage point can be anything that allows the focal actors to be followed and thus become indispensable. Some examples are social media

(SOARES *et al.*, 2021); websites (RANERUP, 2008); an initiative of organizational change (SARKER; SARKER; SIDOROVA, 2006); mobile websites for banking (LEE *et al.*, 2015); and a hardware manufacturer (ISLAM; MÄNTYMÄKI; TURUNEN, 2019).

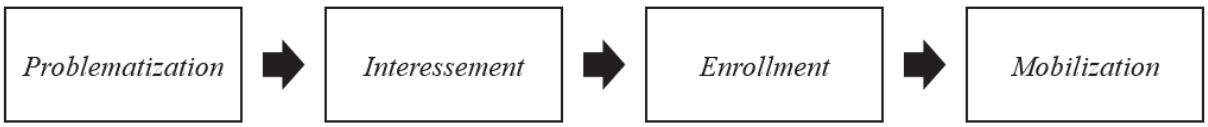
The second stage is named *interessement*, where negotiations with the actors to have the focal actor accepted are performed (SARKER; SARKER; SIDOROVA, 2006). Thus, the focal actors aim to get commitment from the other actors, aiming to enroll themselves in the network (FOX, 2000; CONTESSE *et al.*, 2021).

The third stage, named *enrollment*, is where "the proposed course of action is carried out, consolidating the roles and activities originally suggested" (FOX, 2000, p. 862). Thus, it is where the focal actor is indeed accepted by the other actors (SARKER; SARKER; SIDOROVA, 2006).

Last but not least, the fourth stage named *mobilization*, is where "actants" that represent the network are identified, enhancing the support and expanding the network (CONTESSE *et al.*, 2021). The idea is that those "actants" would properly represent the collectivities of the network, preventing a betrayal to occur (BAEK; LEE, 2021), which could lead to a dissolution of the network (FOX, 2000).

Figure 1 summarizes the flow through which action is understood, allowing power to be created and actors to emerge.

FIGURE 1 – THE FLOW THROUGH WHICH ACTION IS UNDERSTOOD



SOURCE: Adapted from Callon (1986).

This approach of four stages is explored in many scenarios at the academy. Contesse *et al.* (2021), for example, demonstrate how the non-human agency can shape sustainable transactions, identifying how non-human actants can be mobilized to assist with the catalyzation of sustainable transactions.

Ferratti, Sacomano Neto and Candido (2021) explore the controversies in the entrepreneurial processes of IT ventures, identifying five main issues in the processes (sociodemographic biases, reproduction of economic and cultural inequalities, conflicts among organizational elites, disputes between owners and workers, and overdependence of startups on larger technological firms). The authors also emphasize how ANT can assist criticism to be more sophisticated and well-built at the academy.

In another study, Baek and Lee (2021), explore the mobility technology case, to propose a framework to analyze the impact of innovative technologies on society. The authors use the ANT, Technological Determinism, and the Social Construction of Theory.

And Soares *et al.* (2021) demonstrate how WhatsApp allowed the truckers' uprising that take place in Brazil in 2018. With the usage of ANT, the authors mapped the various actors of the network, many of them non-human actors. In their study, the obligatory point of the passage is the social networks enabled by WhatsApp, which lead this tool to display a crucial role in the events. The authors conclude that the study that new forms of digital governance are needed to address new uprisings that might occur in the future, as those tend to be supported by novel technologies.

The pandemic of Covid-19 is also explored in recent studies, such as Hassan *et al.* (2021), where the authors explore the literature gap about the lack of business awareness in non-financial activities, which could assist with situations such as the one caused by Covid-19. With the usage of ANT, the study concludes with recommendations such as the adoption of a Circular economy, sustainable business models, and also more structured and mandatory reports about biodiversity and extinction, as being important points to prevent situations such as the Covid-19 to take place.

These studies have in common the fact that they identify many non-human objects as being actors. To allow that to take place, Callon (1984, p. 196) discusses three principles, named: Agnosticism (impartiality between actors engaged in controversy); Generalized symmetry (commitment to explain conflicting viewpoints in the same terms); and Free association (abandonment of all a priori distinctions between the natural and the social).

The first principle is related to the impartiality of the observer concerning both scientific and technological arguments, not emphasizing nor censoring any of them. The second principle is related to the idea of not changing registers when we move from technical to social aspects (human and non-human actors are considered equally) (LAW, 2004). And the third principle reflects the abandonment of a priori distinctions of social and natural events, allowing the observer to navigate between these realms (CALLON, 1984, p. 200-201).

Based on these principles, ANT sees the structure as something held in place by the relationship between human and non-human actors (STEEN; COOPMANS; WHYTE, 2006), with non-human actors being able to display agency (CALLON, 1991; LATOUR, 2007).

With these characteristics, the material agency is highlighted, which goes further than Giddens (1985) approach to structuration theory (WARD, 2018), encompassing legal,

economic, political, religious, and technological ties that result in a variety of entities that need to be mapped.

A question that might arise then is: “how is it possible to map all the actors?” And to answer that, ANT draws on something called punctualization. To explain punctualization, the previous example, where a user was accessing a financial service through a cloud computing technology, can also be used. Cloud computing technology was classified as an actor. A question that one might ask then is: why was cloud computing technology chosen as an actor instead of another technological component, like a server or a programming language? And the answer relies on the concept of punctualization.

Callon (1991) provided a very good example to demonstrate how punctualization works. He demonstrates that a computer will be seen by a user as being an actor. However, inside the computer, there are several smaller electronic components (other entities) that are hidden from the user. These components that the user does not see also have a network with their relationships. But those are invisible to the users in the given context. In this sense, punctualization can be considered a simplification (CALLON, 1991, p. 153) or an abstraction that is done considering the context of the study.

Thus, ANT assumes that every actor can be considered a network of smaller actors (LAW, 2004). However, to be able to apply the ANT analysis, the punctualization is used to aggregate actors inside one another. This approach allows the researcher to define what will be seen as the actor in the study (ISLAM; MÄNTYMÄKI; TURUNEN, 2019, p. 2), which is performed considering the actions identified in the network. By using punctualization, the researcher can consider aggregations of actors as being a single actor. Nevertheless, at the same time, it’s important to not oversimplify entities that should be disaggregated (LATOUR, 2007). Thus, the researcher should carefully follow the connections, giving special attention to the aspects of agency.

Furthermore, differences in the “type of study” are also identified in the literature. Sieklicki and Tanev (2021) have explored the ANT literature, identifying three literature streams: descriptive, managerial proactive, and participatory proactive. The authors conclude with a framework to differentiate between different ANT streams and their key characteristics

To this end, the first stream (descriptive) contains studies that focus on key concepts of ANT (symmetry between humans and non-humans, agency, and translation). The second one (managerial), focuses on the aspects of Callon's four stages, thus addressing in more detail aspects of the instrumentalization of these phases. And the third stream (participatory), focuses

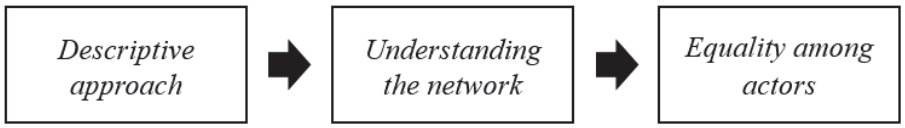
on the application of participatory design insights with ANT, mainly exploring innovation aspects (SIEKLICKI; TANEV, 2021, p. 4).

Thus, while a set of authors state that Callon's four stages are the steps of ANT implementation, others argue that ANT methodology cannot be fixed to some specific steps due to its transformative nature, resulting in most authors being somewhere in the middle of these two extremes (SIEKLICKI; TANEV, 2021, p. 6-7).

Considering that, the mapping of actors in the network is performed based on the focus that the researcher gives, including the amount of punctualization that is used (LATOUR, 2007), along with the stream that the researcher adheres to the most (SIEKLICKI; TANEV, 2021). In this research, since the risk is what the researcher wants to focus on, entities that affect risk (e.g. how it is increased or minimized) will be highlighted and identified as actors, while entities that do not affect risk will remain as intermediaries. Furthermore, this research is characterized by adopting elements of all three streams identified by Sieklicki and Tanev (2021), thus also being in the middle of the extremes. More specifically, this research does have a descriptive approach (a strong characteristic of the first stream), but it does not reject adherence to any particular theories. At the same time, it also uses Callon (1986) four stages as part of the understanding of the network formation (a characteristic of the second stream), while at the same time it assumes a focus on equality among actors, including the researcher (a characteristic of the third stream).

Figure 2 summarizes the evolution of the ANT research streams identified by Sieklicki and Tanev (2021) according to their order of identification.

FIGURE 2 – THE IDENTIFIED STREAMS OF ANT RESEARCH



SOURCE: Adapted from Sieklicki; Tanev (2021).

Nevertheless, despite the difference among these three streams, the challenge of applying ANT to empirical studies is faced by all of them, where the researcher needs to be able to apply the ANT approach while maintaining the ANT ontology of symmetry (SIEKLICKI; TANEV, 2021).

This symmetry is related to the generalized symmetry (CALLON, 1984), where are discussed aspects that humans and non-humans should be integrated into the same framework, with the agency being accounted for by both of them (BAEK; LEE, 2021). Thus, the concern

that one incurs is to have an anthropocentric analysis performed (FERRATTI; SACOMANO NETO; CANDIDO, 2021).

To avoid this, Latour (2007) demonstrates how the agency is intrinsic to the actors, thus accounting for their realities. However, at the same time, no individual actant is complete without the network that he is part of, which makes the focus shift to the network itself (who is connected to whom) (AHMADI; SOGA, 2022). With this approach, Kotusev and Kurnia (2021) demonstrate that ANT can assist with the formulation of guidelines where the uninterrupted translation is wanted.

Upon this theoretical background related to Actor-network theory, the next section explores the literature related to FinTechs, focusing more specifically on the Credit FinTechs and the aspects of risk that incurs in the provision of services by this type of organization.

2.3. FINTECHS AND THEIR CLASSIFICATION

FinTech is a recent concept that still lacks a clear definition of what it represents (CACIATORI JUNIOR; CHEROBIM, 2020). In a general sense, FinTechs can be considered startups related to the financial sector. More specifically, FinTechs are seen as organizations with a business model that merges high IT usage with the provision of financial services (ARNER; BARBERIS; BUCKLEY, 2015; CHEN; WU; YANG, 2019).

For the present study, startups are considered organizations that can lead to new modes of collaboration through the high usage of technology, thus resulting in a significant shift in power (BASOLE; PATEL, 2018). To this end these organizations usually pose threats to incumbent organizations (FLIGSTEIN, 1996), displaying a customer-centric approach (MACKENZIE, 2015), with a strategy that encompasses the creation of new market niches. These organizations usually address a group of customers that were not yet addressed by incumbent organizations (FLIGSTEIN; MCADAM, 2011), or provide innovative services to attract customers (CHRISTENSEN; RAYNOR; MCDONALD, 2015).

Alt, Beck and Smits (2018) point out that although many researchers consider FinTechs only from the financial sector perspective, the high utilization of IT also allows this organization to be analyzed with an IT approach. To this end, Caciatori Junior and Cherobim (2021) point out that a critical question is whether this type of organization should be positioned inside or outside the financial system, because while they do present elements from IT organizations, they also encompass the concept of financial innovation, providing several different financial services on the market.

Anagnostopoulos (2018), cited in his research that FinTechs may provide a specific type of financial service, which allows the customer to specifically select the FinTech that he wants, based on provided service. This approach differs from the 'all-in-one' approach provided by incumbent banks, where a packet of services is provided by the same institution.

Nevertheless, other literature emphasizes that FinTechs are usually specialized in more than one financial service, which compromises classification methods that are based solely on the services provided. Gromek (2018), and also Romanova and Kudinska (2016), for example, already described challenges to having a classification performed, such as FinTechs being present in two different categories of services.

According to Caciatori Junior and Cherobi (2021), studies such as Arner, Barberis and Buckley (2015), Haddad and Hornuf (2019), and Milian, Spinola and Carvalho (2019) are but a few that have tried to categorize FinTechs, using different methodologies and data sources to have it done. Caciatori Junior and Cherobim (2021) point that these studies have in common the tendency to adapt the identified categories according to the focus of the research being performed (e.g. technology, innovation, or consumer orientation).

Aiming to overcome this limitation and display a more grounded categorization of FinTechs, Caciatori Junior and Cherobim (2021) used a qualitative and quantitative approach composed of content analysis and modularity/cluster analysis to categorize FinTechs. They analyze 13 documents where FinTech's categorization was discussed, identifying 142 FinTech categories with the software Gephi (BASTIAN; HEYMANN; JACOMY, 2009). After that, the authors compare the identified categories with a table of services provided by incumbent banks. This approach resulted in nine categories of FinTechs, as described in Table 1.

TABLE 1 – FINTECH CATEGORIES WITH THEIR COMPONENTS

Category	**FinTech types identified**
Advice	Digital Financial Advice; e-Aggregators; Financial management; Financial planning; Investment management investor services; Lending marketplaces; Marketplace lending; Mobile and web-based financial services; Personal finance; Wealth and cash management; Wealth management
B2B	B2B; Big data applications; Blockchain; Capital markets; Clearing; Cloud computing applications; Credit scoring; Customer interface; Data security; Digital ID verification; DLT applications; Financial Efficiency; Financial market infrastructure; Infrastructure; Institutional Technology; Loan Technology; Manage Risks; Market support; Operations; Regtech; Regulatory technology; Risk management; Security Technology; Settlement; Smart contracts; Tokens; Value transfer networks
Digital banks	Account management; Deposits; Digital banks; Mobile banks
Exchange	Currency; Digital exchange platforms; Exchange services; Remittances

Insurance	Digital Insurance; Insurance; Insurtech
Investments	Asset management; Copy trading; Crowdinvesting; Digital investments; E-trading; High-frequency trading; Investments; Robo-advice; Save; Savings; Trading
Lending	Borrow; Brokerage; Capital debt and equity; Capital raising; Credit; Crowdfunding; Debt Negotiation; Digital Financing; Equity crowdfunding; Factoring; Financing; Lending; Mortgages; Peer-to-peer lending; Working Capital
Others	Cross-process; Finance; FX wholesale; Loyalty program; Monetization; Others; Real State; Retail; Wearables IoT
Payments and transfers	Billing; Billing technology; Cryptocurrencies; Digital currencies; Digital Money; Digital Payments; Means of payment; Mobile wallets; Money transfer; Payments; Peer-to-peer transfer; Transfers; Whosale payments

SOURCE: Caciatori Junior; Cherobim (2021).

The present study considers the approach used by Caciatori Junior and Cherobim (2021), which aimed to overcome the previous limitations of FinTech categorization. According to their study, Credit FinTech is located under the 'lending' category, which also includes Borrow; Brokerage; Capital debt and equity; Capital raising; Crowdfunding; Debt Negotiation; Digital Financing; Equity crowdfunding; Factoring; Financing; Lending; Mortgages; Peer-to-peer lending; and Working Capital FinTechs

To further comprehend and categorize the Credit FinTechs, Resolution No 4.656, of April 26th of 2018, issued by the Brazilian Central Bank (BANCO CENTRAL DO BRASIL, 2018b) is also used in the present research. This resolution discusses the general criteria used to categorize Credit FinTechs in the Brazilian country. More specifically, it describes two main categories of Credit FinTechs that are allowed to work as financial institutions in Brazil: The SCD (*Sociedade de crédito direto*), translated as Direct Credit Company; and the SEP (*Sociedade de empréstimo entre pessoas*), translated as Peer-to-Peer Loan Company.

These types of FinTechs along with the aspects of their categorization are explored in more detail in the next subsection, where aspects of peer-to-peer (P2P) lending are also discussed.

1.1.1. Credit FinTechs and P2P lending

Credit FinTechs, also encompassing other terms such as Lending FinTechs and also Peer-to-peer (P2P) lending FinTechs, is a type of organization that according to Contreras Pinochet *et al.*, (2019) provides a technology that can disrupt the traditional loan market. Its main focus is to provide loans and financial services to its customers, working with financing services that are usually provided only by traditional banks.

That type of FinTech starts to grow in Brazil around 2017 (CONTRERAS PINOCHET *et al.*, 2019). During the same year, the Brazilian Central Bank (BCB) launched a consultation process to define a regulation for peer-to-peer (P2P) lending operations (BANCO CENTRAL DO BRASIL, 2017a). This consultation aimed to better understand the characteristics that would allow Credit FinTechs to work as financial institutions in the country, aiming to provide a categorizing for them.

The goal was to generate growth opportunities for FinTechs, with a focus on the credit industry (CONTRERAS PINOCHET *et al.*, 2019). The public consulting received 85 suggestions from the public community (BANCO CENTRAL DO BRASIL, 2017c), which resulted in the creation of Resolution No. 4.656. This was the first specific regulation issued by the Brazilian Government to regulate the FinTech industry.

In 2017, another public consultation related to FinTechs was issued by the BCB, affecting especially the SCD and SEP institutions previously created by Resolution No. 4656, as those are now authorized to work as financial institutions by the BCB.

This second public consultation (BANCO CENTRAL DO BRASIL, 2017b), focused on the aspects of cybernetic security related to data storage, data process, and cloud computing services used by financial institutions authorized to work by the BCB, which is based on the inputs resulted in Resolution No. 4.658 (BANCO CENTRAL DO BRASIL, 2018c).

With these two resolutions, Credit FinTechs now have the possibility of being regulated directly by the BCB and no longer operating at the margin of the financial system. This is why the study of Contreras Pinochet *et al.*, (2019), developed before Resolution No. 4.656, characterized this type of FinTech as being a bank correspondent.

Nevertheless, although regulation is now present, Credit FinTechs can remain as bank correspondents in case they are not granted authorization to work by the BCB. To acquire this authorization, organizations should issue a request with the necessary documentation to be authorized to work as an SCD or SEP institution. To this end, their business model can still encompass P2P models without direct regulation by the BCB (BANCO CENTRAL DO BRASIL, 2019; CONTRERAS PINOCHET *et al.*, 2019)

SCD and especially SEP institutions are known to use P2P models, which is displayed in other studies as being a technology that became popular for small and medium enterprises, as these organizations usually require capital but are unable to get credit from incumbent banking institutions (USANTI; RORO, 2018; LUTHER, 2020; PALLADINO, 2020). These studies demonstrate that this lack of access to financial services is something that contributed to the growth in the number of Credit FinTech.

In essence, the P2P model can be considered a marketplace that offers loans rather than products (CONTRERAS PINOCHET *et al.*, 2019). To this end, it is stated that FinTechs that work with a P2P technology can be considered intermediaries that connect the loan giver (Creditor) to the loan receiver (Debtor) (USANTI; RORO, 2018).

That connection between Creditors and Debtors is also discussed in the literature as something usually combined with technologies like big data to have creditworthiness evaluated. (BUCHAK *et al.*, 2018; CLARKE, 2019). Thus, apart from assisting small and medium organizations to have access to credit, it is pointed out that Credit FinTechs has the potential to solve problems related to the formal loan market, such as borrowers not obtaining financing due to lack of supplies (SERRANO-CINCA; GUTIÉRREZ-NIETO; LÓPEZ-PALACIOS, 2015), and expansion of credit access to low-income individuals (LUTHER, 2020).

1.1.2. Risk aspects at the P2P lending

Despite the interesting positive outcomes created by Credit FinTechs, these types of organizations are also reported in the literature as institutions that increase risks for the financial system (USANTI; RORO, 2018; LUTHER, 2020; YANDRA; SOPACUA, 2020; YUNIARTI; RASYID, 2020).

According to Roeser *et al.*, (2012), 'risk' is a situation where undesirable events may or may not occur. Yandra and Sopacua (2020) state that applying for credit is a form of risk-taking behavior where an individual is put in a high uncertainty situation. In their study, the authors state that Credit FinTechs create a scenario where the type of business model used (focused on technology), results in a high lending rate for its customers, which generates a risk categorized as credit risk (SERRANO-CINCA; GUTIÉRREZ-NIETO; LÓPEZ-PALACIOS, 2015).

This type of risk can be defined as the possible financial impact of change in borrowers' creditworthiness, where creditworthiness is the borrowers' willingness and ability to repay (EMEKTER *et al.*, 2015).

Credit risk, according to (CONTRERAS PINOCHET *et al.*, 2019), is measured in three dimensions: corruption, risk of expropriation of private property, and risk of invalidation of contracts. Considering that Credit FinTechs are organizations that can increase risk-taking behavior, especially for people that would not be able to get formal loans in incumbent bank institutions, it is expected that these organizations will increase credit risk (YANDRA; SOPACUA, 2020).

The situation tends to be even more critical for countries where incumbent banks hold the biggest part of the total assets. In the Brazilian scenario, for example, the five largest banks (Banco do Brasil, Itau Unibanco, Bradesco, Caixa Ecômica Federal, and Santander) held in 2019, 81% of total assets in the banking sector (BANCO CENTRAL DO BRASIL, 2019). This concentration of assets combined with the fact that high-risk borrowers are more likely to apply for online lending (PALLADINO, 2020), can result in a systemic risk if not matched to an adequate level of resilience by the organizations and by the financial system (BANK INDONESIA, 2016).

The Brazilian scenario is even more critical considering the high-interest rate on credit, which is still over 300% per year in Brazil (IBGE, 2019). When this is combined with the banking concentration, it creates a scenario where young people are particularly affected and excluded from the credit market (FEBRABAN, 2019).

This opened up space for Credit FinTechs to flourish in the Brazilian scenario. The annual report of BCB (BANCO CENTRAL DO BRASIL, 2019) demonstrates an increase of 33% in the number of active FinTechs in the country, with Credit FinTechs being the second greatest group (with 95 active organizations), only behind the payment FinTechs (with 151 organizations).

Considering the type of service that is provided by Credit FinTechs, a key point also discussed in the literature is the consumer protection aspects (LUTHER, 2020; YUNIARTI; RASYID, 2020). As stated by Luther (2020), P2P lending operations have a regulatory background that remains focused on the investor, giving little emphasis on the risks that it poses to consumers of that technology.

Usanti and Roro (2018), and Yuniarti and Rasyid (2020), for example, demonstrate concerns about the privacy of data stored by Credit FinTechs, while Luther (2020), discusses the use of non-traditional data (consumer data) to approve the lending decision, which can also reflect on concerns regarding credit risk.

Studies also point to another type of risk that is generated by credit FinTechs and P2P operations, which is the operational risk (USANTI; RORO, 2018; YUNIARTI; RASYID, 2020). The studies demonstrate that Credit FinTechs can display risks related to inefficiency of internal processes, human error, system failure, or external events affecting the operation of the service (USANTI; RORO, 2018, p. 290). This type of risk is reported as being more common for FinTechs since these organizations are only authorized to work with an online platform (BANCO CENTRAL DO BRASIL, 2018b), which is an aspect that might increase the chance of operational risks due to system errors.

To this end, the three main types of risk related to Credit FinTechs that are discussed in the literature are credit risk (SERRANO-CINCA; GUTIÉRREZ-NIETO; LÓPEZ-PALACIOS, 2015; YANDRA; SOPACUA, 2020), data risk (USANTI; RORO, 2018; LUTHER, 2020; YUNIARTI; RASYID, 2020) and operational risks (USANTI; RORO, 2018; YUNIARTI; RASYID, 2020).

Apart from these three types of risk, Yuniarti and Rasyid (2020) also make a small mention of cybersecurity risks as something related to Credit FinTechs. That type of risk, however, is considered by the authors as something connected with Data Risks, since Cybersecurity risks are usually related to data being breached by cyber attacks. To this end, this study considers that "problems" that might appear on systems are contained within the risk situations that might occur.

These risks are in their turn, what regulations, such as Resolution No. 4.656 (BANCO CENTRAL DO BRASIL, 2018b), and Resolution No. 4.658 (BANCO CENTRAL DO BRASIL, 2018c) aims to mitigate.

The first Resolution (No. 4.656), aimed to categorize credit FinTechs under the concept of SCD or SEP, thus encompassing specific criteria that would allow these organizations to operate without being bank correspondents in Brasil. To this end, an SCD is a financial institution whose objective is to carry out transactions loans, financing, and acquisition of credit rights exclusively through an electronic platform, using financial resources that have as their sole origin equity capital (BANCO CENTRAL DO BRASIL, 2018b, p. 2). The SEP, on the other hand, is defined as a financial institution whose object is to carry out P2P lending operations exclusively through an electronic platform (BANCO CENTRAL DO BRASIL, 2018b, p. 3).

Since Credit FinTechs make intense use of IT technologies, a second Resolution (No 4.658), was created to deal with aspects of cybersecurity policies and requirements for contracting data processing, storage, and cloud computing services. This resolution contains aspects that should be observed by all financial institutions authorized to operate by the BCB (BANCO CENTRAL DO BRASIL, 2018c, p. 1), focusing on the information technology procedures that the organizations need to perform to secure the customer data, also encompassing aspects related to acknowledgment of customers regarding the security aspects that are currently in place at the organizations, including their action plan to respond to cyber incidents that might occur.

Cloud computing is addressed specifically in Chapter III of the resolution, which establishes the criteria that allow this type of service to be hired by organizations under the

regulation of BCB. To this end, the same concerns regarding access and processing of customer data are valid here. (BANCO CENTRAL DO BRASIL, 2018c, p. 6).

To this end, these two regulations aim to have risk mitigated, allowing the stability of the financial system to be held. In this sense, risk should be considered central when analyzing Credit FinTechs, especially since these organizations encompass technology, broader access to credit, the utilization of user data to perform credit analysis, and, in the case of SEP, the possibility to directly connect Debtors and Creditors, thus acting as an intermediary platform between these two.

To better understand that scenario, this study sustains that ANT is a theory that can provide a valuable insight to explore risk when it comes to SCD and SEP organizations since it can demonstrate how different organizational actors (being human and non-humans) can shape the understanding of society considering the aspects of agency.

Focusing on explaining how that can be achieved with ANT, Table 2 summarizes the central aspects used in this study, along with the processes used for the identification of each concept in the study framework. These aspects defined in Table 2 are used for the construction of the study framework, which is located in Figure 3.

TABLE 2 – DEFINITION OF CONCEPTS USED FOR THE STUDY

Concept	Definition	Identification	Authors
Entities	Entities are the objects that ANT classifies as being either actors or intermediaries. They could be human or non-human, including technology, policies, institutions, and other objects.	Entities are identified based on A) the ANT five uncertainties, which are the premises that ANT assumes to have the analysis performed: (I) the nature of groups; (II) the nature of actions; (III) the nature of objects; (IV) the nature of facts; and (V) the type of study under the concept of 'science'; and B) the three principles (Agnosticism; Generalized symmetry and Free association), that sustain how non-human entities, such as technology and regulatory entities, are allowed to create agency and thus become actors.	CALLON, 1984, 1991; STEEN; COOPMANS; WHYTE, 2006; LATOUR, 2007; (CHRISTIAENS, 2016; PAPADOPOULOS; KANELLIS, 2011; SHIM; SHIN, 2016; BALASESCU; JAIN, 2018.
Actors (Mediators)	The entities (human or non-human) can associate with intermediaries and modify the information flow, making their presence known through the process of translation.	Actors are identified based on the process of translation of information, considering how risk is generated in the financial sector (an entity that increases or minimizes risks will create agency and thus be categorized as an actor).	LATOUR, 2007; PAPADOPOULOS; KANELLIS, 2011; YANG; WANG, 2013; LENGLET; MOL, 2016;; SHIM; SHIN, 2016; VARGHA, 2018.
Intermediaries	The entities (human or non-humans) just carry information, without modifying its meaning. They could be pure intermediaries but are usually considered to be hybrid (a mixture of human and non-human entities) because their presence is hard to be identified since no modification to the information flow is performed. They are thus defined by the relationship they enter.	Intermediaries are "identified" by the process of transportation. This process results in the simple carrying of information from one entity to the other, without increasing or minimizing risk.	CALLON, 1991; LATOUR, 2007.
Agency	Agency is the action or intervention to produce a particular action, created through the translation process between the relationship of actors (mediators).	Agency is identified based on the relationship between actors. The operationalization is performed with the process of translation. Actions performed by actors either minimize or increase risk, creating agency that affects the aspects of risk and modifies the meaning of information.	GIDDENS, 1985; STEEN; COOPMANS; WHYTE, 2006; LATOUR, 2007; MILYAEVA, 2014; CHRISTIAENS, 2016; LENGLET; MOL, 2016; BALASESCU; JAIN, 2018; WARD, 2018.

Translation	The process through which information is carried and transformed by actors. In other words, is a process where the meaning of information is changed.	The translation is identified according to the modification performed at the aspects of risks. To this end, the three movements of ANT (methodological procedures that ANT uses to have the network described and mapped down) are used. The methodological approach consists of a description of the network formation. This is done considering the movements that result in the translation process and the creation of agency. Due to that, the identification of translation is performed considering the focus that the researcher is giving. In this research, translation processes will be considered the ones that minimize or increase risk aspects.	CALLON, 1991; LATOUR, 2007; ANONG; KUNOVSKAYA, 2013; LEE *et al.*, 2015; LENGLET; MOL, 2016; SHIM; SHIN, 2016; ISLAM; MÄNTYMÄKI; TURUNEN, 2019; WANIAK-MICHALAK; MICHALAK, 2019.
Transportation	The process where information is simply carried by intermediaries. In other words, is a process where the meaning of information is not changed.	Transportation is "identified" according to the non-modification in the aspects of risks. To this end, the same procedure used to identify the translation is used. Due to that, the three movements of ANT (methodological procedures that ANT uses to have the network described and mapped down) are used as well. Thus, the identification is also performed considering the focus that the researcher is giving. In this research, transportation will be considered the process where risk aspects are not affected.	CALLON, 1991; LATOUR, 2007; ANONG; KUNOVSKAYA, 2013; LEE *et al.*, 2015; LENGLET; MOL, 2016; SHIM; SHIN, 2016; ISLAM; MÄNTYMÄKI; TURUNEN, 2019; WANIAK-MICHALAK; MICHALAK, 2019.
Punctualization	Agreement of entities that together display an actor. It's an abstraction, which allows actors to be identified depending on the context that the researcher is exploring.	Punctualization is identified considering the methodological approach and the context where the research is developed. This occurs based on the focus of the research, which is directly related to the three movements of ANT (methodological procedures that ANT uses to have the network described and mapped). They encompass the description of network formation, considering the movements that result in the translation and creation of agency.	CALLON, 1991; LAW, 2004; LATOUR, 2007; ANONG; KUNOVSKAYA, 2013; YANG; WANG, 2013; LEE *et al.*, 2015; SHIM; SHIN, 2016;ISLAM; MÄNTYMÄKI; TURUNEN, 2019.

Risk	Risk is a situation where events may or may not occur without the certainty of it.	In this study, the risk is identified in the category: Credit risk, which is the possible financial impact of real or perceived change in borrowers' creditworthiness. Where creditworthiness is the borrowers' willingness and ability to repay; Data risk, which is the possible impact on the storage and processing of data by FinTech organizations or their service providers. Cybersecurity risk, which is the possible invasion or non-standards situations that could result in issues related to the cybernetic systems owned by the FinTech or its service providers; And Operational risk, which is the possible inefficiency of internal processes, human error, system failure, or external events affecting the operation of the service. Operation risks are stated as being more common in FinTech as these organizations use a lot of IT to have activities performed.	ROESER *et al.*, 2012; EMEKTER *et al.*, 2015; SERRANO-CINCA; GUTIÉRREZ-NIETO; LÓPEZ-PALACIOS, 2015; USANTI; RORO, 2018; LUTHER, 2020; YUNIARTI; RASYID, 2020.
FinTechs	FinTechs can be considered organizations with a business model that merges high IT usage with the provision of financial services.	In this study, FinTechs are identified based on the categorization provided by the study of Caciatori Junior and Cherobim (2021), along with Resolution No. 4656, issued by the BCB to which the identification of Credit FinTechs is made possible.	ARNER; BARBERIS; BUCKLEY, 2015; CHEN; WU; YANG, 2019. CACIATORI JUNIOR; CHEROBIM, 2021.
Credit FinTechs	Credit FinTechs are organizations that aim to provide loans and financial services to customers, using information technology (electronic platforms) to have it performed.	Credit FinTechs are identified following the same approach used to have FinTechs identified. Thus, the study of Caciatori Junior and Cherobim (2021), along with regulations issued by the BCB are used to have this type of FinTech identified.	BANCO CENTRAL DO BRASIL, 2018b; CACIATORI JUNIOR; CHEROBIM, 2021.

SOURCE: The Author (2022).

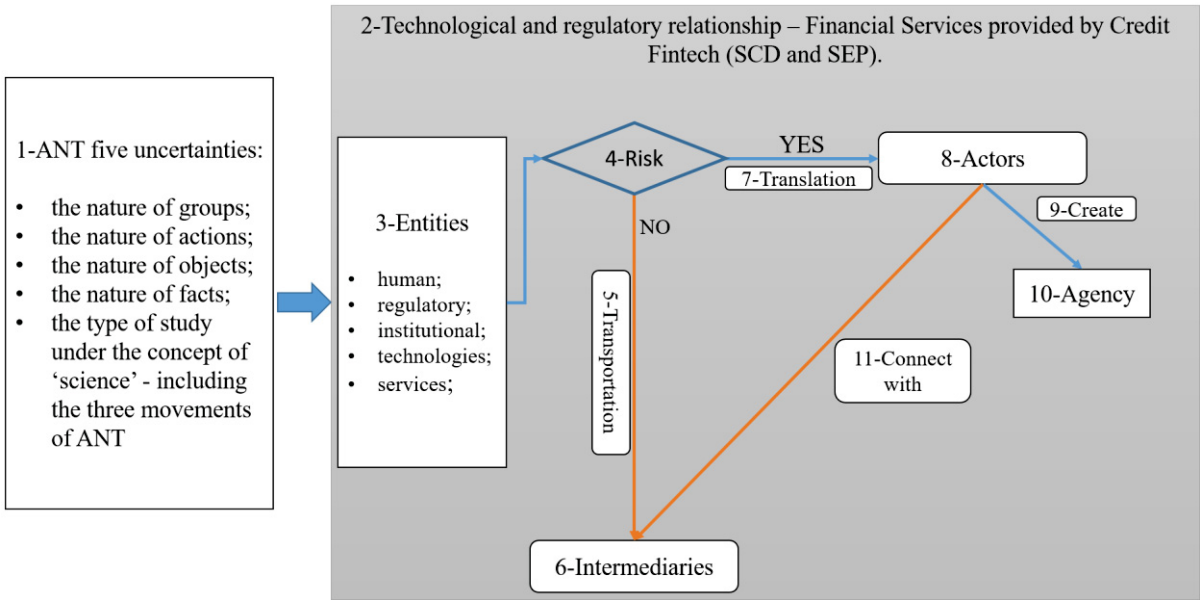
Considering this theoretical background, Figure 3 summarizes the framework that demonstrates how the analysis is performed based on ANT principles, allowing entities and actors to be identified. The following bullets explain the framework interpretation.

- Box 1-ANT five uncertainties, encompasses the premises used to perform the analysis. These are the uncertainties that ANT assumes to have entities identified, which allow it to consider non-human objects as something that displays agency. For the analysis of Credit FinTechs, it means that these premises are what allow regulatory and technological actors to emerge, providing new meaning to the connections identified between the entities.
- Box 2-Technological and regulatory relationship – Financial Services provided by Credit Fintech (SCD and SEP), represent the scenario that is analyzed. This is the relationship described in the theoretical background when aspects of risk are addressed. It demonstrates that while technologies tend to increase the risk, the regulation aims to reduce it. However, regulations may pose a hindrance to the technological development of organizations, creating a barrier or even blocking innovation development. At Credit FinTechs, it also includes increased access to credit, apart from the intense IT usage.
- Box 3-Entities, represents the entities that are identified based on the ANT five uncertainties (box 1) in the context of the study (box 2). These entities include non-human objects, such as technology, institutional and regulatory objects. According to ANT, entities can further be classified as intermediaries or actors.
- Box 4-Risk, represents the aspect used to categorize entities and actors. Thus, entities not affecting risk will simply transport information (intermediaries), while entities affecting risk will perform the translation of information, thus modifying the meaning of information that is carried (actors).
- Box 5 – Transportation, represents the process where information is simply carried from one place to another.
- Box 6 – Intermediaries, represents the entities that are only carrying information, not modifying their meaning.
- Box 7 – Translation, represents the process where information is carried to another place with modification of its meaning.
- Box 8 – Actors, represents the entities that translate information, thus modifying their meaning.

- Box 9 – Create, represents the creation of agency by the actors.
- Box 10 – Agency, represents the agency created by actors, which occurs because actors change the meaning of information through the process of translation. Thus, risk is identified because agency will be created, due to the modification of the information meaning.
- Box 11 – Connect with, represents the connections that actors can also establish with intermediaries.

This framework summarizes the analysis with the ANT approach. Following this analysis, actors are the ones translating information, creating agency, and thus modifying the meaning related to aspects of risk in the scenario being explored.

FIGURE 3 – STUDY THEORETICAL FRAMEWORK



SOURCE: The Author (2022).

Considering this theoretical background and the proposed framework, the next section will discuss the methodological procedures of the study.

3. METHODOLOGICAL PROCEDURES

This section contains the methodological procedures. It encompasses the research questions and procedures used for data collection and data analysis, also encompassing the justifications of the method.

3.1. RESEARCH QUESTIONS

The research questions were elaborate aiming to address the study objectives, allowing a better operationalization process for their achievement (BOAVENTURA, 2004). The research questions are summarized as follows.

a) Which services are provided by Credit FinTech organizations?
b) Which entities are present in the services provided by Credit FinTech organizations?
c) How the creation of agency occurs based on the aspects of risk that encompasses the Credit FinTechs?
d) Which entities are "acting" on the structure?
e) How is the actor-network on the relationship between the BCB and the Credit FinTechs characterized?
f) What is the impact of the relationship between the BCB and the Credit FinTechs on the aspects of risk, considering the relationship between technology and regulation?

3.2. RESEARCH DESIGN

ANT has some premises defined by Latour (2007) for its methodological procedures. These premises are defined based on the last uncertainty that ANT assumes (writing down risk accounts). Thus, the way the researcher writes down social connections will affect the outcome of the network formation (LATOUR, 2007). This last uncertainty is the basis for the three movements that ANT uses to have the analysis performed (LATOUR, 2007).

The first movement, called 'localizing the global', aims to answer questions such as "Where are the structural effects being produced?". In this step, agency (GIDDENS, 1985) comes into play, being accounted for the connections, which are the focal point of this move. This allows the mediators (actors) to be highlighted because the paths connecting them will be put in evidence due to agency aspects.

The second movement, called ‘redistributing the local’ aims to answer questions such as “How is the local itself being generated?”. This is where non-human actors will also generate new sets of connections and is where action encounters interaction (LATOUR, 2007).

Lastly, the third movement, called ‘connecting sites’, aims to answer questions such as “Which types of conduits allow agency to be transported for long distances, and why are they so efficient in the formation of the social?”; “Which are the nature of agencies transported and what would be a better definition for “mediators?”; and “What lies between the connections?” (LATOUR, 2007).

Figure 4 summarizes the information flow through the three movements of ANT, according to Latour (2007).

FIGURE 4 – THE THREE MOVEMENTS OF ANT

SOURCE: Adapted from Latour (2007).

Although these movements are considered the foundation of the ANT methodological approach, they are very abstract. To this end, Table 3 summarizes the interconnection between the research questions of this study and the questions proposed at each movement of the ANT methodological approach.

TABLE 3 – RESEARCH QUESTIONS CONCERNING ANT QUESTIONS

Research Questions	**ANT Questions**	**ANT Movement**
a) Which services are provided by Credit FinTech organizations? b) Which entities are present in the services provided by Credit FinTech organizations?	Where are the structural effects being produced?	First movement - localizing the global.
c) How the creation of agency occurs based on the aspects of risk that encompasses the Credit FinTechs? d) Which entities are “acting” on the structure?	Where are the structural effects actually being produced?; How is the local itself being generated?	Second movement - redistributing the global.
e) How is the actor-network on the relationship between the BCB and the Credit FinTechs characterized?	Which types of conduits allow agency to be transported for long distances and why are they so efficient in the formation of the social?; Which are the nature of agencies transported and what would be a best definition for “mediators?	Third movement - connecting sites.

f) What is the impact of the relationship between the BCB and the Credit FinTechs on the aspects of risk, considering the relationship between technology and regulation?	Which are the nature of agencies transported and what would be a best definition for “mediators?; What lies between the connections?”

SOURCE: The author (2022).

Considering Table 3, this research assumes an exploratory approach (BABBIE, 2012), aiming to explore something that was still not fully comprehended (BENBASAT; GOLDSTEIN; MEAD, 1987). As stated by Latour (2007, p. 22), ANT aims to reassemble the social, providing a new comprehension by looking to pieces that were before considered only aggregates of the network, where it is assumed that events are connected, exerting influence on one another.

Considering the description of the three movements provided by Latour (2007), and also the content of Table 3, the first and second movements focus more on the description of the collected data. These two movements allow the formation of the actor-network to take place. After that, the third movement takes place, focusing on the last two questions of the study, and thus being the part where more in-depth analyses are performed.

Furthermore, movements one and two have two very similar questions, “Where are the structural effects being produced?” (first movement). And “Where are the structural effects *actually* being produced?” (second movement). That slight but important difference allows us to understand that while the first movement aims to identify the entities in the network, the second movement goes further by allowing the identification of the network actors.

In this sense, movements one and two serve as the base for the construction of the actor-network, which is analyzed in more detail in the third movement. This research project uses the first and second movements as a methodological path to the third movement.

Based on these movements, it’s important to point out that ANT does not state that the world is socially constructed or preexistent (WARD, 2018). Thus, ANT does not consider the world from the view of social constructionism or realism (MIETTINEN, 1999). For ANT, the world is considered a network of human and non-human actors that is continually constructed and deconstructed (WHITTLE; SPICER, 2008).

Considering the temporality, this research is classified with a cross-sectional approach, merged with a longitudinal approximation. This results in a phenomenon being studied over some time, starting with an initial cut-off represented by an event (HAIR JR. *et al.*, 2005). The initial events considered for the research are the release of Resolution No. 4.656 and Resolution No. 4.658, both released on April 26, 2018.

Resolution No. 4.656 was selected because it displays the mechanisms to have SCD and SEP institutions created and authorized to work as financial institutions. To this end, it addresses the subject of P2P lending operations through electronic platforms. Resolution No. 4.658 was selected because it discusses the mechanisms through which cybernetic services of data storage, processing, and cloud computing can be contracted by financial institutions and other organizations authorized to work by the BCB, thus being directly related to the services provided by SCD and SEP institutions.

After the review of these two initial documents, which allowed the identification of the key actors, the recommendations provided by Latour (2007) were followed, where data related to these actors was followed to have the rest of the network characterized and analyzed.

In the next sections, aiming to provide a better comprehension of the research steps, the qualitative procedures are discussed in more detail.

3.3. QUALITATIVE PROCEDURES

The main information sources for this study are: Brazil Central Bank Resolutions No. 4656 and No. 4658 and other documents related to the key actors such as laws, reports, resolutions, newspaper reports, website media, and other documents related to Credit FinTechs.

The analysis in this study was performed using the content analysis technique considering three phases: (BARDIN, 2000) (I) the pre-analysis, where the “floating reading” is performed (initial reading and the development of organization techniques to classify the material); (II) The material exploration, where the material coding effectively takes place. This coding is based on the rules created during the previous phase, allowing the data to be split and regrouped in different ways (FLICK, 2009), which allows the research to perceive a better interpretation of it; And (III) the material treatment, which encompasses the analysis of results, aiming to provide meaning to the findings, allowing them to be valid ones and the interpretation and inference of data to take place.

This approach requires codes to be created to have the data categorized and analyzed (BARDIN, 2000). In social sciences, these codes are very often pre-selected from the literature (MILES; HUBERMAN; SALDANA, 2019). However, since ANT requests the researcher to “follow the actors”, in this research the codes were not pre-selected. Thus, both descriptive and analytical codes were allowed to emerge from the collected data (WARD, 2018).

Following the coding procedure to have entities and actors identified, a thematic analysis was performed, thus following the same approach used by Ward (2018). The data and

the connections established from initial codes were then re-contextualized into five main themes: Documents, Humans, Institutions, Information Systems, Regulatory, and Services which were then analyzed with ANT lenses. The codes were then re-structured into these main themes.

After that, the context charts technique was used to create a better visualization of data. As pointed out by Miles, Huberman and Saldana (2019) this technique is useful to map the relationship between actors, allowing the researcher to identify the context of their actions. Furthermore, Ayres, Kavanaugh and Knafl (2003), state that context charts are useful to answer research questions that aim to comprehend how something happens, thus being aligned with the study research question.

Lastly, it's important to mention that the context charts were created highlighting the connections between the actors, which thus allowed the development process to be analyzed following the ANT perspective (WARD, 2018).

3.4. DATA COLLECTION AND DATA ANALYSIS PROCEDURES

Following the three movements of ANT (localizing the global, redistributing the local, and connecting sites) (LATOUR, 2007), the software Atlas.ti version 8.4 was used for the coding procedures. The codes created by the software, which represent the entities and actor elements of ANT (codes with prefix ENT and ACT), were then used to highlight the existing entities and actors directly on the data. This allowed the ANT elements to be highlighted in the data, allowing an easier comprehension of elements by the researcher, and thus for the reader of this study. Thus, the code itself is used to highlight and identify the entities directly in the documents.

Following the three-phase analysis proposed by Bardin (2000), entities were first identified in the two initial documents (Resolutions No. 4656 and No. 4658). This approach was necessary since ANT requests the researcher to follow the strings of connection between actors, which leads to the formation of the Actor-network (LATOUR, 2007). To this end, once the key-actor(s) is/are identified, the researcher then follows the strings of data (re)assembling the connections among the actors considering the aspects of the agency.

After that, the context chart creation took place (MILES; HUBERMAN; SALDANA, 2019). This approach aimed to map the relationship between actors, allowing the researcher to identify the context of their actions (AYRES; KAVANAUGH; KNAFL, 2003). This highlights

the connections between the actors and allows visualization of the Actor-Network (WARD, 2018).

To map the connections and have sketches of the Actor-Network created, the software Draw.io (ALDER; BENSON, 2005) was used. It is an open-source diagramming software, which has an online and a desktop version, providing the user the option to work offline (DIAGRAMS.NET, 2020).

Although this software is not well known in the academic area of business and management, it has been used by researchers in a variety of fields, such as information and communication technologies (PUJA; POSCIC; JAKSIC, 2019), medicine (HOLZSCHECK *et al.*, 2020), environmental sciences (RAK *et al.*, 2019), and astrophysics (POURRAHMANI; NAYYERI; COORAY, 2018).

Furthermore, the study of Brodkorb *et al.*, (2017), states that draw.io is a graphic editor based on an interactive approach, which allows the user to steer the creation process. The study of Dlab, Candrlic and Sabranovic (2017), tested nine diagramming software to check the availability and features provided by them. According to the authors, the big turndown of draw.io is that it does not support real-time collaboration or chat integration.

Nevertheless, as the researcher is working alone to create the networks, this does not characterize an issue to be considered. Thus, draw.io, although not yet used often on business and administration streams, demonstrated to be valid software to be used in the research, with examples of its application in various academic areas.

After the initial identification of entities, the thematic analysis was used, having the data and the connections established from initial codes re-contextualized into the themes. For each theme, a code was created to have entities categorized, according to the data provided in Table 4.

TABLE 4 – CATEGORIZATION USED FOR THE CLASSIFICATION OF ENTITIES

CODE GROUP	CODE	DESCRIPTION	EXAMPLES IDENTIFIED IN THE DOCUMENTS
ENT	ENT-DOC	Entities related to documents	Entities related to documents and other files (eg. Authorization requests; Advertising and publicity material; Certifications and other technical requests).
	ENT-HU	Human entities	Entities that represent a human being (eg. Director responsible for the cybernetic police of the organizations; shareholders; Employees of the service provider organizations).

ENT-INS	Institutional entities	Entities that represent institutional beings (eg. Brazilian Central Bank; National Financial System; Service provider organizations).
ENT-IS	Information system entities	Entities related to information system aspects, including technology, operating systems, platforms, and other cybernetic components (eg. Electronic Platform; Internet; Cloud Computing; Data and information).
ENT-REG	Regulation entities	Regulation entities like resolutions, laws, and other formal regulations that are issued by the government and other institutions (eg. Resolution No. 4658, of April 26, 2018; Resolution No. 4656, of April 26, 2018; Resolution No. 3921, of November 25, 2010).
ENT-SERV	Service Entities	Entities related to services that are provided either by the SCD, SEP or by the service provider's organizations (eg. Data Storage; Loan and financing operations between people; Electronic currency issuance).

SOURCE: The Author (2022).

The types of entities identified in Table 4 are related to Box 3 of Figure 3, thus representing the various types of entities that were identified. The thematic analysis followed the aspects of the agency. Since this study uses aspects of risk to understand agency, the codification and the thematic analysis were performed at two different moments. First, with the identification of the focal actor through two initial documents. Second, with the re-creation of connections from data collected from the key actors.

The first research question of the study: Which services are provided by credit fintech organizations?, was also answered using the content analysis technique (BARDIN, 2000) based on the analysis of the initial documents (Resolutions No. 4656 and No. 4658). Since this research question addresses the development of Credit FinTechs in Brazil, it also aims to serve as the background scenario for the introduction of ANT analysis, which is further explored in the remaining research questions.

3.5. THEORETICAL MATRIX

To correlate the theoretical background with the methodological approach of the study, Panel 1 contains the first part of the theoretical matrix, allowing the reader to visualize the relationship between the research problem and research objectives with the theoretical background used in the research.

PANEL 1 – THEORETICAL MATRIX - PART 1 – THEORETICAL BACKGROUND

RESEARCH PROBLEM	GENERAL OBJECTIVE	SPECIFIC OBJECTIVES	RESEARCH QUESTIONS	THEORETICAL BACKGROUND
How does the relationship between the BCB and the Credit FinTechs act on the aspects of risk, considering the relationship between technology and regulation?	Analyze how the relationship between the BCB and the Credit FinTechs act on the aspects of risk, considering the relationship between technology and regulation.	a) Identify the services provided by Credit FinTech organizations;	a) Which services are provided by Credit FinTech organizations?	**ACTOR-NETWORK THEORY, AGENCY, STRUCTURE, AND INSTITUTIONALISM**: (AHMADI; SOGA, 2022); (ANAGNOSTOPOULOS, 2018); (ANONG; KUNOVSKAYA, 2013); (ARMINEN, 2010); (AU; ZAFAR, 2008); (BAEK; LEE, 2021); (BALASESCU; JAIN, 2018); (BARNES, 1988); (BICUDO DE CASTRO; MIHRET, 2020); (BILAN *et al.*, 2019); (BRODKORB *et al.*, 2017); (CALLON, 1984, 1991); (CALLON; LATOUR, 1981); (CAMPBELL-VERDUYN; GOGUEN; PORTER, 2017); (CAMPBELL-VERDUYN; GOGUEN; PORTER, 2019); (CHEN; WU; YANG, 2019); (CHRISTIAENS, 2016); (CLARKE, 2019); (CONTESSE *et al.*, 2021); (DOOLIN; LOWE, 2002); (D'ARCY; KEOGH, 2002); (DANKERT, 2011); (DOAK; KARADIMITRIOU, 2007); (EZE; CHINEDU-EZE; BELLO, 2019); (FERRATTI; SACOMANO NETO; CANDIDO, 2021); (FLIGSTEIN, 1996); (FLIGSTEIN; MCADAM, 2011); (FOUCAULT, 1984); (FOX, 2000); (GIDDENS, 1985); (GONZÁLEZ, 2013); (HOLMSTRÖM; STALDER, 2001); (HOLZSCHECK *et al.*, 2020); (ISLAM; MÄNTYMÄKI; TURUNEN, 2019); (KACK, 2018); (LATOUR, 1987, 1988, 1991, 2007); (LAW, 1991, 2004); (LEE *et al.*, 2015); (LENGLET; MOL, 2016); (MIETTINEN, 1999); (MILYAEVA, 2014); (NAMBISAN *et al.*, 2017); (PAPADOPOULOS; KANELLIS, 2011); (RANERUP, 2008); (RAUTIAINEN; SCAPENS, 2013); (SAGE; VITRY; DAINTY, 2020); (SARKER; SARKER; SIDOROVA, 2006); (SELA; GONZALEZ; CHRISTOPOULOS, 2020); (SHIM; SHIN, 2016); (SIEKLICKI; TANEV, 2021); (SOARES *et al.*, 2021); (STEEN; COOPMANS; WHYTE, 2006); (TATNALL, 2014); (WARD, 2018); (WHIPP, 1996); (WHITTLE; SPICER, 2008); (WICKRAMASINGHE; TATNALL; BALI, 2012); **CREDIT FINTECH, RISK, AND P2P LENDING**: (ABCD, 2020); (ALLEN; SANTOMERO, 1998); (ALT; BECK; SMITS, 2018); (ANAGNOSTOPOULOS, 2018); (ARNER; BARBERIS; BUCKLEY, 2015); (BALASESCU; JAIN, 2018); (BANCO CENTRAL DO BRASIL, 2011); (BANCO CENTRAL DO BRASIL, 2017a) (BANCO CENTRAL DO BRASIL, 2017c); (BANCO CENTRAL DO BRASIL, 2017b);(BANCO CENTRAL DO
		b) Identify the entities present at the services provided by Credit FinTech organizations;	b) Which entities are present in the services provided by Credit FinTech organizations?	
		c) Analyze the creation of agency based on the aspects of risk that encompasses the Credit FinTechs;	c) How the creation of agency occurs based on the aspects of risk that encompasses the Credit FinTechs?	
		d) Analyze which entities are "acting" on the structure;	d) Which entities are "acting" on the structure?	

		e) Comprehend the actor-network on the relationship between the BCB and the Credit FinTechs;	e) How is the actor-network on the relationship between the BCB and the Credit FinTechs characterized?	BRASIL, 2017d); (BANCO CENTRAL DO BRASIL, 2017e); (BANCO CENTRAL DO BRASIL, 2018a); (BANCO CENTRAL DO BRASIL, 2018b); (BANCO CENTRAL DO BRASIL, 2018c); (BANCO CENTRAL DO BRASIL, 2019); (BANK INDONESIA, 2016); (BARONE; SADER, 2008); (BARROS; COELHO; PALOMARES, 2019); (BASOLE; PATEL, 2018); (BICUDO DE CASTRO; MIHRET, 2020); (BILAN *et al.*, 2019); (BUCHAK *et al.*, 2018); (CACIATORI JUNIOR; CHEROBIM, 2020, 2021); (CHEN; WU; YANG, 2019); (CHRISTIAENS, 2016); (CLARKE, 2019); (CONTRERAS PINOCHET *et al.*, 2019); (DE ROSSO; LOPES, 2019); (DIEESE, 2014); (DIEESE, 2018); (EMEKTER *et al.*, 2015); (FARIA, 2018); (FEBRABAN, 2019); (FINTECHLAB, 2016, 2017, 2020); (GROMEK, 2018); (HADDAD; HORNUF, 2019); (IBGE, 2019); (JEFFERIS, 2018); (KING, 2018); (LEE *et al.*, 2015); (LENGLET; MOL, 2016); (LUTHER, 2020); (MACKENZIE, 2015); (MILIAN; SPINOLA; CARVALHO, 2019); (MILYAEVA, 2014); (MORA, 2010); (PALLADINO, 2020); (PRATES; BIANCARELI, 2009); (PRESIDÊNCIA DA REPÚBLICA, 1995, 2003a, 2003b, 2008); (PWC; ASSOCIAÇÃO BRASILEIRA DE CRÉDITO DIGITAL, 2019); (RAK *et al.*, 2019); (ROESER *et al.*, 2012); (ROMĀNOVA; KUDINSKA, 2016); (SANT'ANNA; BORÇA JUNIOR; DE ARAUJO, 2009); (SELA; GONZALEZ; CHRISTOPOULOS, 2020); (SERRANO-CINCA; GUTIÉRREZ-NIETO; LÓPEZ-PALACIOS, 2015); (SHIM; SHIN, 2016); (SILVA; KIMURA; SOBREIRO, 2017); (USANTI; RORO, 2018); (VARGHA, 2018); (WANIAK-MICHALAK; MICHALAK, 2019); (YANDRA; SOPACUA, 2020); (YANG; WANG, 2013); (YIP; BOCKEN, 2018); (YUNIARTI; RASYID, 2020)
		f) Comprehend the impact of the relationship between the BCB and the Credit FinTechs on the aspects of risk, considering the relationship between technology and regulation	f) What is the impact of the relationship between the BCB and the Credit FinTechs on the aspects of risk, considering the relationship between technology and regulation?	

SOURCE: The Author (2022).

Panel 1 summarizes the specific objectives and also their specific research questions. In the last column, the studies used in the research for the construction and also for the provision of the answer to the research questions are located. The referred literature is composed only of studies contained in the theoretical background of the study.

Panel 2 summarizes the second part of the theoretical matrix, thus exploring in more detail the methodological aspects of the study.

PANEL 2 – THEORETICAL MATRIX - PART 2 – DATA COLLECTION / ANALYSIS TECHNIQUES

RESEARCH PROBLEM	GENERAL OBJECTIVE	SPECIFIC OBJECTIVES	DATA COLLECTION TECHNIQUES	DATA ANALYSIS TECHNIQUES
How does the relationship between the BCB and the Credit FinTechs act on the aspects of risk, considering the relationship between technology and regulation?	Analyze how the relationship between the BCB and the Credit FinTechs act on the aspects of risk, considering the relationship between technology and regulation.	a) Identify the services provided by Credit FinTech organizations;	Analysis from initial documents used to have key actors identified (Resolutions No. 4656 and No. 4658).	Content analysis following the three phases based of Bardin (2000) methodology, with the usage of the software Atlas.ti version 8.4.
		b) Identify the entities present at the services provided by Credit FinTech organizations;	For the identification of key actors: Analysis from initial documents used to have key actors identified (Resolutions No. 4656 and No. 4658). For the (re)assemble of the network following the string of connections from the key actors: a) Analysis of the 183 documents collected from the BCB website (94 from the search engine, 89 from the Texts, documents, and presentations area of the website) b) Analysis of the 339 documents collected from SCD and SEP institutions identified (269 from SCD websites, and 70 from SEP websites).	
		c) Analyze the creation of agency based on the aspects of risk that encompasses the Credit FinTechs;	For the identification of key actors: Analysis from initial documents used to have key actors identified (Resolutions No. 4656 and No. 4658). For the (re)assemble of the network following the string of connections from the key actors: a) Analysis of the 183 documents collected from the BCB website (94 from the search engine, 89 from the Texts, documents, and presentations area of the website) b) Analysis of the 339 documents collected from SCD and SEP institutions identified (269 from SCD websites, and 70 from SEP websites).	Content analysis (BARDIN, 2000) combined with thematic analysis (WARD, 2018), with the usage of the software Atlas.ti version 8.4.
		d) Analyze which entities are “acting” on the structure;		

		e) Comprehend the actor-network on the relationship between the BCB and the Credit FinTechs; f) Comprehend the impact of the relationship between the BCB and the Credit FinTechs on the aspects of risk, considering the relationship between technology and regulation	For the identification of key actors: Analysis from initial documents used to have key actors identified (Resolutions No. 4656 and No. 4658). For the (re)assemble of the network following the string of connections from the key actors: a) Analysis of the 183 documents collected from the BCB website (94 from the search engine, 89 from the Texts, documents, and presentations area of the website) b) Analysis of the 339 documents collected from SCD and SEP institutions identified (269 from SCD websites, and 70 from SEP websites).	Context charts based on data analyzed at the previous methodological procedures (AYRES; KAVANAUGH; KNAFL, 2003; WARD, 2018; MILES; HUBERMAN; SALDANA, 2019).

SOURCE: The Author (2022).

Panel 2 also contains the research problem along with the general and specific objectives. It then summarizes the information related to data collection and data analysis techniques that were used, based on the methodological steps described in this section 3 of the study.

Considering that methodological background, the research turns now to the analysis of data.

4. DATA ANALYSIS

This section encompasses the data analysis of the study. It follows the three methodological movements of ANT, which are based on its five premises. The goal of this approach is to follow the connections between actors and understand their relationship, as this process allows the researcher to map the Actor-Network that answers the proposed research questions.

The analysis starts by demonstrating how the credit context in Brazil is characterized and how it contributed to the growth of Credit FinTechs.

4.1. PROBLEMATIZATION - THE CREDIT CONTEXT IN BRAZIL: THE EMERGENCE OF CREDIT FINTECHS

To understand the development of Credit FinTechs in Brazil, the study starts by explaining the credit context in the country, which passed through a lot of changes since the inflation stabilization with the "Plano Real", in 1994 (PRESIDÊNCIA DA REPÚBLICA, 1995).

Before this economic plan, the access to credit in Brazil was constrained (at least compared to the actual parameters of credit access) (PWC; ASSOCIAÇÃO BRASILEIRA DE CRÉDITO DIGITAL, 2019). After a recede in credit during the years of 1990, several economic programs developed by the government aimed to restructure the economic scenario, increasing credit access (MORA, 2010).

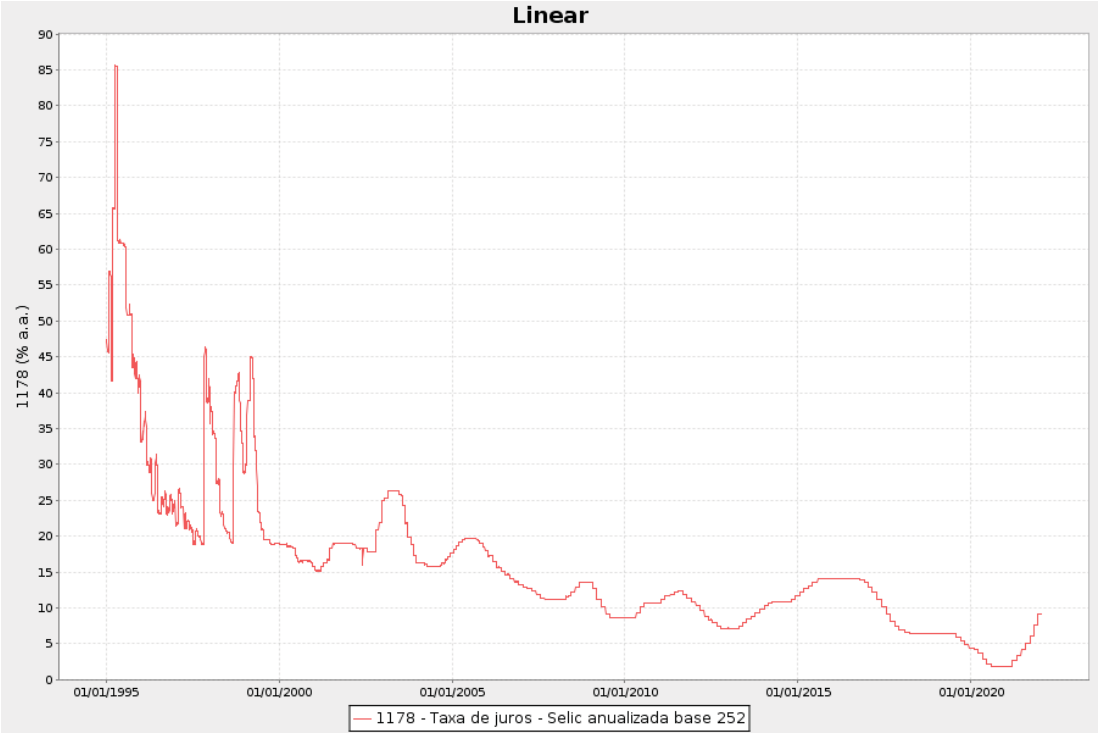
Figure 5 and Figure 6, demonstrate the relationship between the basic interest rate of Brazil (SELIC) and the percentual of credit operations in the country for the previous years ((BANCO CENTRAL DO BRASIL, 2022).

It can be noted that although Brazil displayed in recent years very high-interest rates (BANCO CENTRAL DO BRASIL, 2020a), between 2008-2014 the credit indicators continued to increase, reaching 55,4% of the GDP in February of 2014 (DIEESE, 2014).

In the following years, a political crisis resulted in a reduction of the country's GDP in 2014, with an increase in unemployment and even a recession in 2015 (DIEESE, 2018). This resulted in a reduction of 11,8% in the credit rate in 2016 as can be seen in Figure 6. This period matches the time when organizations categorized as FinTechs started to emerge in Brazil (2014-2018). A report published by the institution FintechLab in 2016, demonstrates that while the development of FinTechs was already present in other countries for the past five years, it was

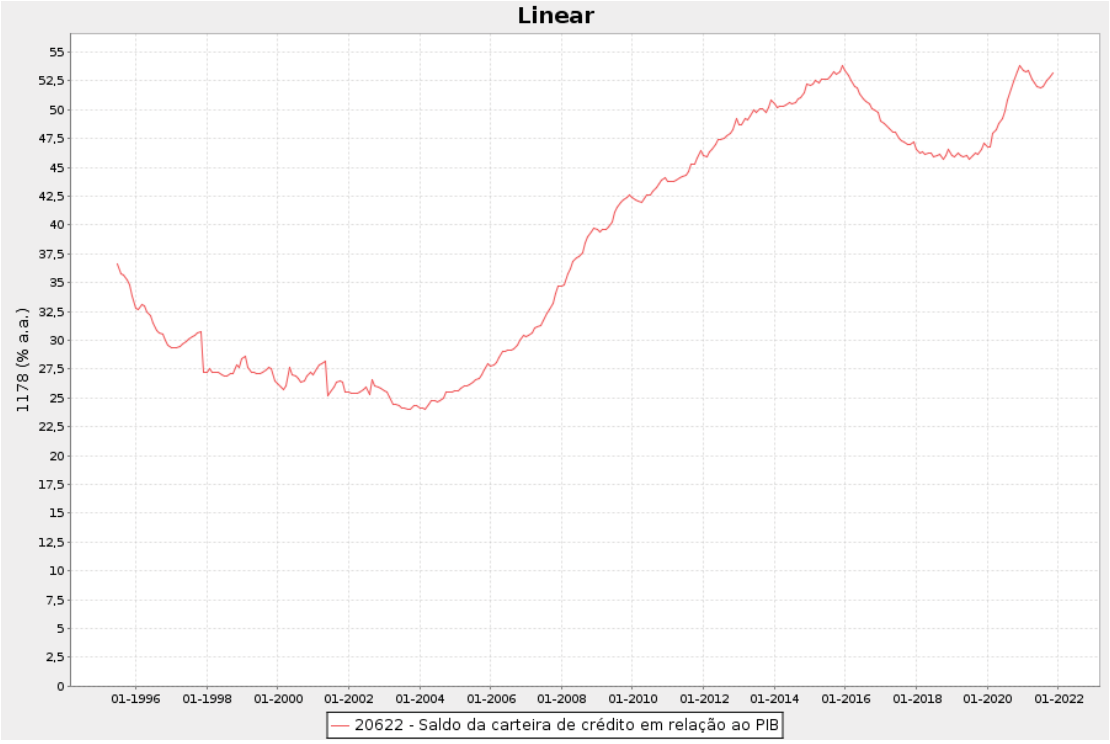
only in 2014 that the movement started in Brazil (FINTECHLAB, 2016), with more strength gained in 2015 (BARROS; COELHO; PALOMARES, 2019).

FIGURE 5 –THE EVOLUTION OF BRAZIL BASIC INTEREST RATE (SELIC)



SOURCE: Central Bank of Brasil (2022).

FIGURE 6 –THE EVOLUTION OF CREDIT OPERATIONS IN % OF GDP

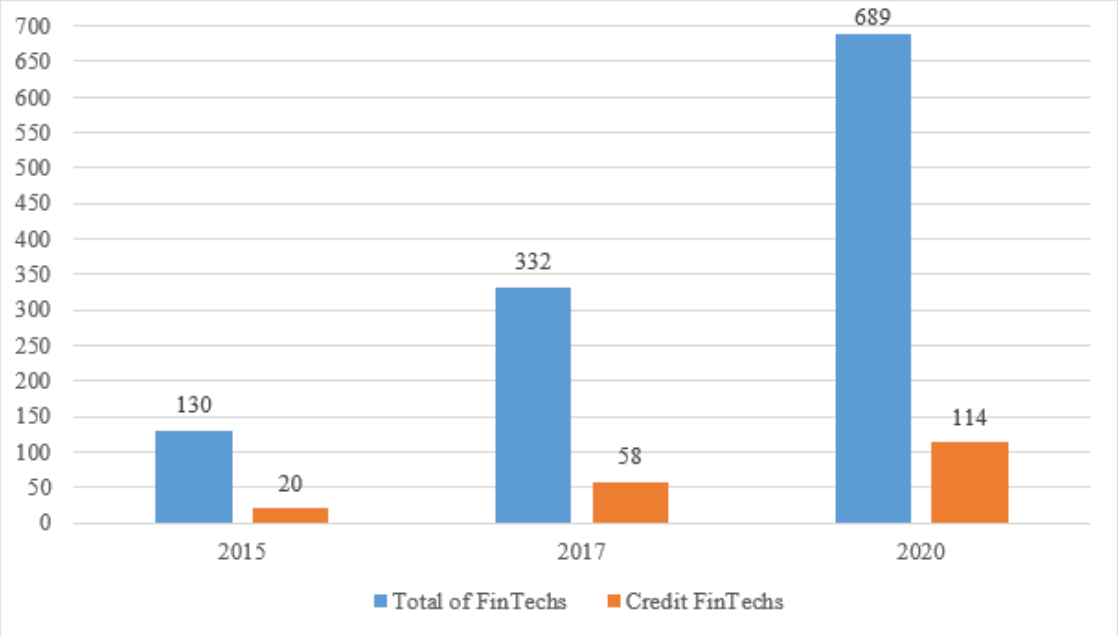


SOURCE: Central Bank of Brasil (2022).

This growth of FinTechs occurred mainly due to the conservative approach of the Brazilian financial system (FINTECHLAB, 2016), which when combined with the difficulties that incumbent institutions present to maintain the technology pace (FLIGSTEIN, 1996; SHIM; SHIN, 2016), resulted in the emergence of challenging companies that offer new and innovative services, such as FinTechs.

Figure 7 demonstrates the evolution in the number of FinTechs and Credit FinTechs in Brazil, based on the data provided by Fintechlab (2016, 2017, 2019, 2020).

FIGURE 7 –THE EVOLUTION OF FINTECHS IN THE BRAZIL



SOURCE: Adapted from FINTECHBLAB (2016-2020).

Foreseeing the matter's relevance the ABCD Brazilian Association of Digital Credit was created in 2016 to represent the credit fintech segment.

According to Contreras Pinochet *et al.*, (2019), Credit FinTechs demonstrated considerable growth from 2017 onwards as a reflex to difficulties related to credit access to small and medium enterprises. The increase in FinTech numbers was also assisted by the reductions in the Brazil basic interest rate, SELIC, which was reduced from 13% in January 2017, to 2% in October 2020 (BANCO CENTRAL DO BRASIL, 2017e).

In 2020, the loan segment that represents the Credit FinTechs became the third greater group of FinTechs, being only behind the FinTechs related to payment and financial management) (FINTECHLAB, 2020).

However, in 2017, as no specific regulation was designed for Credit FinTechs, these organizations were classified as being bank correspondents (CONTRERAS PINOCHET *et al.*,

2019; DE ROSSO; LOPES, 2019). Thus, these organizations had established a formal partnership with a bank institution to do business in the financial market.

It is important to mention that bank correspondents, do have a specific regulation that dates from before FinTech's development in the country. Institutions acting as bank correspondents were regulated under Resolution No. 3.954 (BANCO CENTRAL DO BRASIL, 2011), which classifies them as intermediaries authorized to operate by the BCB, providing services to the customers of banking institutions.

The continuous increase in Credit FinTechs resulted in Resolution No. 4656, which specifically regulates the Credit FinTechs under the categories of SCD and SEP. This allowed Credit FinTechs to work as financial institutions, without requiring them to be banking correspondents. However, to receive this classification a formal request should be issued to BCB, and several pre-requisites should be met for this authorization to be granted.

It is important to state that resolution No. 4656 does not prohibit Credit FinTechs that do not have the authorization to work. As stated in the financial report of 2019, issued by the BCB:

> "It is important to note that, although a specific form of authorization for Credit FinTechs has been issued, some organizations remain under the previous business model, formally acting as banking correspondents in the country, but maintaining the addition of differentiated and innovative services in the relationship with the partner institution. The partner institution assumes compliance costs and responsibility to the regulator for the control and risk management of the operations carried out in this structure" (BANCO CENTRAL DO BRASIL, 2019, p. 135, translated by the author).

According to Faria (2018), this resolution aimed to continue the bureaucracy reduction that FinTechs aim to provide, characterizing Credit FinTechs as SCD or SEP (financial institutions), and thus giving them more freedom to provide financial services without the need for a bank institution to have it done.

Based on Resolution No. 4656, SCD is a financial institution that carries out lending and financing transactions and acquires credit rights, but can operate exclusively through an electronic platform, using its equity capital to carry out these operations (BANCO CENTRAL DO BRASIL, 2018b).

SEP, on the other hand, it's the financial institution that carries out P2P lending and financial operations, also operating solely through an online platform (BANCO CENTRAL DO BRASIL, 2018b).

Apart from these services, both SCD and SEP are authorized by the BCB to provide the following services: (I) credit analysis for customers and third parties; (II) collection of credit

from customers and third parties; (III) act as an insurance representative in the distribution of insurance related to the operations previously described, under the terms of the CNSP (National Council for Private Insurance) negotiation; and (IV) issuance of electronic money, under the terms of the current freedom.

However, according to Art. 31. §1, III, the organizations should specify at the request which types of service it wants to provide, resulting in that not all services are necessary to be provided by the Credit FinTechs (BANCO CENTRAL DO BRASIL, 2018b).

Furthermore, in 2020 an update in the regulation authorized SCD organizations to provide credit cards for their customers, also allowing found transfers from The Brazilian Development Bank (BNDES). That update aimed to allow Credit FinTechs to act more directly in the government initiatives related to the fight against the pandemic caused by the Corona Virus (COVID-19) (BANCO CENTRAL DO BRASIL, 2020b).

To this end, and also considering the complexity that an ANT analysis displays, this work focuses on the analysis of the fundamental services provided by SCD and SEP organizations, which are described respectively in Articles 3º and 7º of Resolution No. 4656. These services are the ones related to the aspects of risk that were discussed in the theoretical background, representing the major point of regulation.

To grant more validity to the identification of which services are provided by SCD and SEP organizations, the coding procedure described in the methodological section was applied to Resolutions No. 4656 and No 4658, providing the identification of which services are provided by these institutions. Along with the services related to SCD and SEP organizations, this analysis also aimed to map the services provided by IT cloud providers, thus allowing a better comprehension of their role in this scenario.

Table 5 summarizes the financial services that are provided by the SCD, SEP, and also the IT services provided by technology organizations, based on Resolutions No. 4656 and No. 4658. The services contained in Table 5 represent Box 2 of Figure 3, thus accounting for the "context" of the study (the relationship between technology and regulation).

TABLE 5 – SERVICES PROVIDED BY SCD, SEP, AND ALSO BY IT SERVICE PROVIDERS

CODE GROUP	CODE	CODE ORIGINAL LANGUAGE	TRANSLATED
SERV	SERV-SCD	Análise de crédito para terceiros	Credit analysis for third parties
		Operações de empréstimo e de financiamento	Loan and financing operations
		Cobrança de crédito de terceiros	Third-party credit collection

	Aquisição de direitos creditórios	Acquisition of credit rights
	Emissão de moeda eletrônica	Electronic currency issuance
	Atuação como representante de seguros na distribuição de seguros	Acting as an insurance representative in insurance distribution
	Análise de crédito para clientes e terceiros	Credit analysis for customers and third parties
	Operações de empréstimo e de financiamento entre pessoas	Loan and financing operations between persons
SERV-SEP	Cobrança de crédito de clientes e terceiros	Credit collection from customers and third parties
	Emissão de moeda eletrônica	Electronic currency issuance
	Atuação como representante de seguros na distribuição de seguros	Acting as an insurance representative in insurance distribution
	Intermediação financeira	Financial intermediation
	Processamento de dados	Data processing
	Armazenamento de dados	Data storage
SERV-CLOUD	Implantação ou execução de aplicativos desenvolvidos pela instituição	Deployment or execution of applications developed by the institution
	Infraestrutura de redes	Network infrastructure
	Execução, por meio da internet, dos aplicativos implantados ou desenvolvidos	Execution, through the internet, of applications deployed or developed

SOURCE: The author (2022).

Considering that, the next section will encompass the application of the three movements of ANT.

4.2. ANT METHODOLOGICAL MOVEMENTS: THE FIRST AND SECOND MOVES TO SUSTAIN THE THIRD MOVE

This section will encompass the first and second movements of ANT, thus addressing the identification of entities, risk aspects, and also the actors' identification based on their relationship with risk. It will also encompass the creation of actor-network maps. These analyses are later used in the third movement.

1.1.1. The First Move: Localizing the Global

Following the approach used by other ANT studies (ANONG; KUNOVSKAYA, 2013; SHIM; SHIN, 2016; WARD, 2018), the first important aspect of ANT is to have a focal actor identified. However, actors are only able to be identified based on the identification of entities (LATOUR, 1991, 2007).

To this end, and following the methodological procedures described in the previous section, two initial documents were used to have the key-actor identified (Resolutions No. 4656 and No. 4658). The coding of these documents was performed aiming to identify entities that were related to the proposed research questions of the study. To this end, the five uncertainties of ANT: (I) the nature of groups; (II) the nature of actions; (III) the nature of objects; (IV) the nature of facts; and (V) the type of study under the concept of 'science', along with the three principles related to the agency in non-human agents (Agnosticism; Generalized symmetry and Free association) (LATOUR, 2007), were used to have entities identified, following what was described in Figure 3.

After the entity identification, which was performed with the software Atlas.ti, a classification of the entities based on a thematic analysis was performed. To this end, the entities were categorized according to the themes previously described in Table 4.

To facilitate the data visualization, Table 6 contains the identified entities of the two initial documents, along with their classification in the respective themes.

TABLE 6 – IDENTIFIED ENTITIES FROM THE INITIAL TWO DOCUMENTS

ENTITY CODE	ENTITY NAME (CODE ORIGINAL LANGUAGE	ENTITY NAME (TRANSLATED)
ENT-INS (Institutional entities)	Banco Central do Brasil	Brazilian Central Bank
	Conselho Monetário Nacional	National Monetary Council
	Instituições financeiras	Financial Institutions
	Fundos de investimento	Investment funds
	Conselho Nacional e Seguros Privados (CNSP)	National Private Insurance Council
	Sistema Financeiro Nacional	National Financial System
	Fundo Garantidor de Crédito	Credit Guarantee Found
	Comissão de Valores Mobiliários	Securities and Exchange Commission
	Sociedade de Crédito Direto (SCD)	Direct Credit Company
	Sociedade de Empréstimo entre Pessoas (SEP)	Peer-to-Peer Loan Company
	Secretaria da Receita Federal do Brasil	Secretariat of the Federal Revenue of Brazil
	Prestadores de serviço para compensação e liquidação	Clearing and settlement service providers

	Instituições financeiras autorizadas a funcionar pelo Banco Central do Brazil	Financial institutions authorized to operate by the Central Bank of Brazil
	Empresa de auditoria especializada independente	Independent expert auditing firm
	Autoridade supervisoras dos países onde os serviços poderão ser prestados	Supervisory authorities of countries where services may be provided
	Comite de risco	Risk Committee
	Entidades que exerçam atividades de registro ou de depósito centralizado	Entities carrying out registration or centralized deposit activities
	Empresas prestadoras de serviço	Service providers
	Clientes e usuário do provedor de serviço	Service provider customer and user
	Fundos de investimento em direitos creditórios	Credit rights investment funds
	Companhias securitizadoras	Insurance companies
	Pessoas jurídicas não financeiras	Non-financial legal entities
	Pessoas Jurídicas	Legal entities
ENT-IS (Information system entities)	Sistemas operador por câmaras	Clearing house system
	Sistemas públicos ou privados de cadastro de informações	Public or private information registration systems
	Outros canais de acesso a plataforma eletrônica	Other channels to access the electronic platform
	Operações de empréstimo e de financiamento	Loan and financing operations
	Computação em nuvem	Cloud Computing
	Dados e informações	Data and information
	Sítio da instituição na internet	Institution website
	Serviços de processamento e armazenamento de dados	Data processing and storage services
	Internet	Internet
	Sistemas operacionais e aplicativos	Operating systems and applications
	Novas tecnologias empregadas nas atividades da instituição	New technologies used in the institution's activities
	Aplicativos por meio da internet	Applications over the internet
	Plataforma Eletrônica	Electronic Platform
	Sistemas de informação	Information systems
	Sistemas e recursos tecnológicos	Technological systems and resources
ENT-REG (Regulatory entities)	Resolução Nº 4658, de 26 de Abril de 2018	Resolution No. 4658, of April 26, 2018
	Resolução Nº 4656, de 26 de Abril de 2018	Resolution No. 4656, of April 26, 2018
	Art. 1º, inciso II, da Lei Nº 10.194, de 14 de fevereiro de 2001	Article 1, item II, of Law No. 10.194, of February 14, 2001
	Resolução Nº 4122, de 2012	Resolution No. 4122, of 2012
	Resolução Nº 4538, de 24 de Novembro de 2016	Resolution No. 4538, of November 24, 2016
	Resolução Nº 4571, de 26 de Maio de 2017	Resolution No. 4571, of May 26, 2017
	Art. 7º e 23º, alínea 'a', da Lei Nº 6099, de 12 de Setembro de 1974	Art. 7 and 23, item 'a', of Law No. 6099, of September 12, 1974
	Art 9º da Lei Nº 4595, de 31 de Dezembro de 1964	Article 9 of Law No. 4595, of December 31, 1964

	Resolução Nº 3921, de 25 de Novembro de 2010	Resolution No. 3921, of November 25, 2010
	1º, § 1º, da lei Complementar nº 130, de 17 de Abril de 2009.	Article 1, § 1, of Complementary Law No. 130, of April 17, 2009.
	Art 9º da Lei Nº 4728, de 14 de Julho de 1965	Article 9 of Law No. 4728, of July 14, 1965
	Resolução nº 4.588, de 29 de junho de 2017	Resolution No. 4,588, of June 29, 2017
ENT-DOC (Documental entities)	Contrato ou título de crédito	Credit agreement or title
	Demonstrativos exigidos pela regulação em vigor	Statements required by the regulation in force
	Certificações e outros requisitos técnicos	Certifications and other technical requirements
	Contratos	Contracts
	Justificativa fundamentada	Reasoned justification
	Plano de ação e de resposta a incidentes	Action and response plan for incidents
	Modelos de análise de crédito	Credit analysis models
	Pedido de autorização	Authorization request
	Politica de segurança cibernética	Cybersecurity policy
	Autorização para funcionamento	Operating authorization
	Certificações exigídas	Required certifications
	Materiais de propaganda e publicidade	Advertising and publicity materials
ENT-HU (Human entities)	Diretor responsável pela política de segurança cibernética	Director responsible for cybersecurity policy
	Funcionários da instituição prestadora de serviços	Employees of the service provider institution
	Controladores e Administradores	Controllers and Administrators
	Clientes e usuários do provedor de serviço	Service provider customers and users
	Grupo de controle da instituição	Institution control group
	Grupo econômico que seja integrante à instituição	Economic group that is part of the institution
	Acionistas	Shareholders
	Pessoas naturais credoras	Creditor non-legal persons
	Pessoas naturais devedoras	Debtor non-legal persons
ENT-INST / ENT-HU (Institutional and human entities) *these entities can assume both functions	Clientes e usuário da SCD e da SEP	SCD and SEP customers and users
	Devedores	Debtors
	Credores	Creditors
	Potenciais clientes	Prospected customers
ENT-SERV (Service entities)	Armazenamento de dados	Data storage
	Infraestrutura de redes	Netwotk Infraestructure
	Processamento de dados	Data Processing
	Operações de empréstimo e financiamento entre pessoas	Loan and financing operations between people
	Execução, por meio da internet, dos aplicativos implantados ou desenvolvidos	Execution, through the internet, of applications deployed or developed
	Emissão de moeda eletrônica	Electronic currency issuance
	Implantação ou execução dos aplicativos desenvolvidos pela instituição	Deployment or execution of applications developed by the institution

Operações de empréstimo e de financiamento	Loan and financing operations
Atuação como representante de seguro na distribuição de seguro	Acting as insurance representative in the distribution of insurance
Análise de crédito para terceiros	Credit analysis for third parties
Cobrança de Crédito para terceiros	Credit collection for third parties
Intermediação financeira	Financial intermediation
Aquisição de direitos creditórios	Acquisition of credit rights

SOURCE: The Author (2022).

Table 6 shows a total of 86 entities identified on the two initial documents. The entities represent practical examples of the information contained in Box 3 of Figure 3, which are the objects that could become actors or remain as intermediaries.

Appendix A summarizes the identification of these entities directly at the citations of documents, which was performed using the usage of the software Atlas.ti version 8.4.

It can be noted that several entities could be related to the "same thing", such as the entity named "information systems" and the entity named "systems and technological resources", both of them from the ENT-IS category. This is one of the reasons why entities were identified at the first moment. This procedure was performed before the identification of the focal actor since by identifying these entities first, the researcher was able to "make sense" of the collected data.

To identify the key actors, aspects of risk were also taken into consideration for the establishment of relationships between the entities. To this end, codes were created specifically to identify the aspects of risks in each document. Table 7 summarizes the codes created for the aspects of risk, which emerged from the literature and also from the collected data.

The reviewed literature demonstrates that Cybersecurity risks were only briefly mentioned in the study of Yuniarti and Rasyid (2020), being something related to Data Risks. Nevertheless, Table 7 demonstrates that Data and Cybersecurity risks are the two types of risks with more emphasis on resolutions No. 4656 and No. 4658.

TABLE 7 – CODES RELATED TO THE ASPECTS OF RISK

CODE GROUP	CODE	CODE MENTION IN ORIGINAL LANGUAGE	TRANSLATED
RISK	RISK-CR	Risco de Crédito[1]	Credit Risk[1]
		Risco de Crédito[2]	Credit Risk[2]
		Risco de Crédito[3]	Credit Risk[3]
	RISK-CYBER	Segurança Cibernetica	Cybersecurity
		Indicentes relacionados com o ambiente cibernético	Incidents related to the cyber environment

	Vulnerabilidade na liberação de novas versões do aplicativo	Vulnerability in the release of new versions of the application
	Autenticação	Authentication
	Proteção contra softwares maliciosos	Protection against malicious software
	Mecanismos de rastreabilidade	Traceability mechanisms
	Prevenção e detecção de intrusão	Intrusion prevention and detection
	Detecção de vulnerabilidades	Vulnerability detection
	Controles de acesso e de segmentação de rede de computadores	Computer network segmentation and access controls
RISK-DATA	Disponibilidade dos dados e dos sistemas de informação utilizados	Availability of the data and information systems used
	Confidencialidade	Confidentiality
	Proteção dos dados e das informações dos clientes da instituição	Protection of the institution's customers' data and information
	Acesso das instituições contratantes e do Banco Central do Brasil aos dados e informações	Access by contracting institutions and the Brazilian Central Bank to data and information
	Manutenção de cópias de segurança dos dados e das informações	Maintenance of backup copies of data and information
	Integridade	Integrity
	Informações processadas ou armazenadas pelo prestador de serviço	Information processed or stored by the service provider
RISK-OPE	Eventuais limitações que possam afetar a prestação dos serviços ou o cumprimento da legislação e da regulamentação em vigor	Any limitations that may affect the provision of services or compliance with current legislation and regulations
	Impossibilidade de manutenção ou extinção do contrato de prestação de serviços	Impossibility of maintaining or terminating the service contract
	Cenários de indisponibilidade ocasionada por incidentes	Scenarios of unavailability caused by incidents
	Prejuízos ao seu regular funcionamento	Damage to its regular functioning

NOTES: [1] Refers to the Credit Risk related to the selection of customers by the SCD.
[2] Refers to the Credit Risk related to the P2P operations provided by SEP.
[3] Refers to the Credit Risk related to the selection of customers by the SEP.
SOURCE: The Author (2022).

Table 7 summarizes Box 4 of Figure 3, thus accounting for the types of risks that were identified over the data. These risk aspects are the “proxy” that allows entities to be further classified into intermediaries or actors.

1.1.1.1. Identifying the key-actor

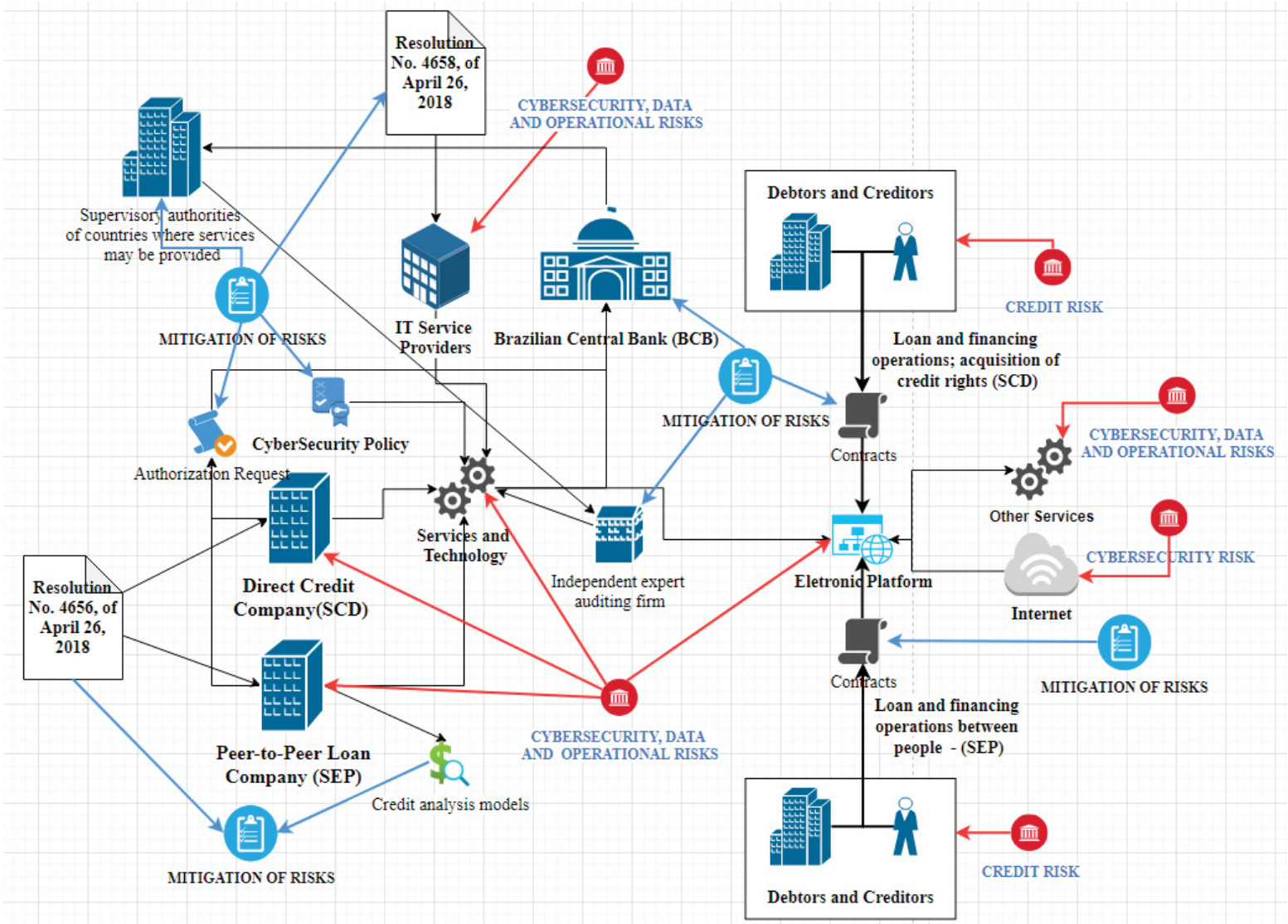
Following the identification of entities, the aspects of risk were addressed, directing the research for the identification of the key actor(s). This was performed considering the ANT question of “Where are the structural effects actually being produced?”. Thus, the focus is now shifted to the connections between entities, which allows actors to be put in evidence.

Considering that, resolutions No. 4656 and No. 4658 were read again. This time, however, the focus was on the establishment of the connections, considering the identified entities and the aspects of risk, which allows one to visualize the structural effects of the analyzed scenario. To perform this task, the software Draw.io (ALDER; BENSON, 2005) was used for the creation of the diagrams, demonstrating the relationships between the actors.

Here, it is important to note that some entities were merged (punctualization) during the process. This was performed according to the context and the level of analysis used, which would transform some entities into “the same actor being observed”. Special attention was given to this process of punctualization to not oversimply the results. Thus, other studies where this technique was used, along with the seminal literature on ANT were also taken into consideration for the process (CALLON, 1991; ISLAM; MÄNTYMÄKI; TURUNEN, 2019; LATOUR, 2007; LAW, 2004).

Risk is added to the diagram also considering how the analyzed data (Resolutions No. 4656 and No. 4658) demonstrate that it can be increased or minimized, thus encompassing Credit Risk (SERRANO-CINCA; GUTIÉRREZ-NIETO; LÓPEZ-PALACIOS, 2015; YUNIARTI; RASYID, 2020); Operational Risks (LUTHER, 2020; USANTI; RORO, 2018; YUNIARTI; RASYID, 2020); Data Risks (LUTHER, 2020; USANTI; RORO, 2018; YUNIARTI; RASYID, 2020); and also Cybersecurity Risks (YUNIARTI; RASYID, 2020). Figure 8 summarizes which entities identified in the documents are creating or minimizing risks, thus being classified as actors.

FIGURE 8 – ACTORS IDENTIFICATION AND RELATED RISKS



SOURCE: The Author (2022).

According to Figure 8, actors increasing risk (added in red) and actors mitigating risk (added in blue) are connected. SCD and SEP are in the diagram providing services to debtors and creditors using the electronic platform. These and other services provided by these organizations are supported by services and technology that are provided by IT Service Providers, which are in the central part of the diagram. The BCB is also located in the center of the diagram, issuing regulations and also authorizing SCD and SEP to work as financial institutions. To ease the visualization of actors and their relationships, Figure 9 summarizes the same diagram, with the aspects of risk removed from the view.

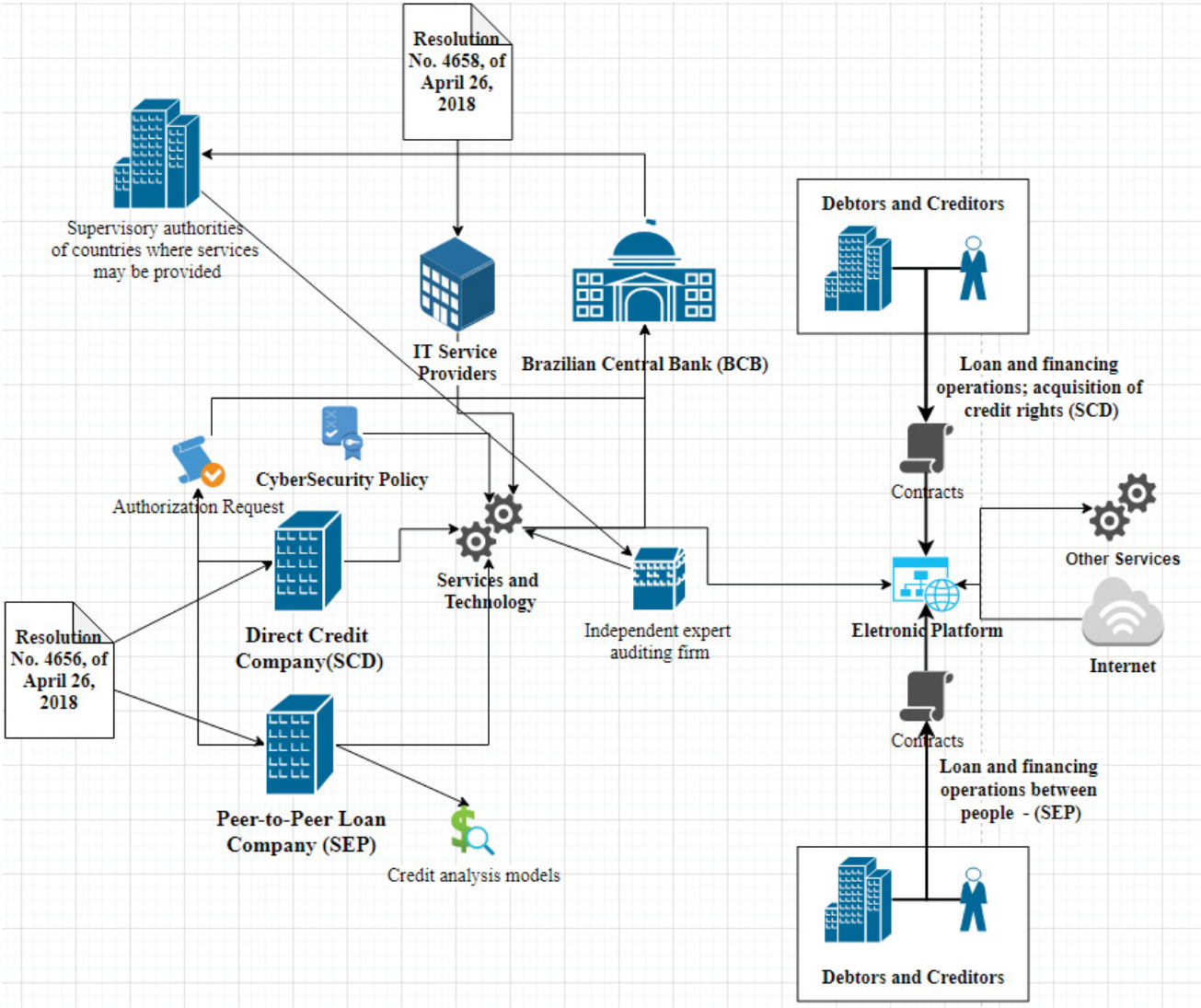
To further complement the understanding of the relationship and especially the punctualization that was used for the study, Appendix B summarizes the punctualization performed by the actors contained in Figure 8. At each figure, one or more actors located in Figure 8 are highlighted with their names in bold. Punctualizations arise from these actor(s), which demonstrates that they encompass more entities inside themselves. To this end, "punctualized" actors were not highlighted in Figure 8 because when risk was used as the proxy for the analysis, they were not highlighted in the analyzed data.

With the actors mapped, the research shifted to the identification of the key actor(s), which was performed following the ANT principles (CALLON, 1991; LATOUR, 1991, 2007), based on practical examples of ANT utilization in the financial market (LENGLET; MOL, 2016; SHIM; SHIN, 2016; CAMPBELL-VERDUYN; GOGUEN; PORTER, 2017; WARD, 2018; CAMPBELL-VERDUYN; GOGUEN; PORTER, 2019; BICUDO DE CASTRO; MIHRET, 2020). Following the approach used in these studies, key-actors were identified based on the context of the research (SHIM; SHIN, 2016; WARD, 2018), taking into consideration the relationships identified by the author in the analysis.

For the identification of the key-actor(s), it was considered not just the information from Figure 8 and Figure 9, but also the information identified during the whole process of entity identification and later actor identification. To this end, it was identified that two actors should be considered the key actants of this network: I. The Credit FinTechs (SCD and SEP); and II. The Brazilian Central Bank (BCB).

As expected, a closer look at Figure 8, shows that connections established by the SCD and SEP organizations are the ones most related to the increase in risk. While the connections established from BCB are the ones most related to risk mitigation.

FIGURE 9 – DIAGRAM RELATED TO IDENTIFICATION OF ACTORS (WITHOUT RISK ASPECTS)



SOURCE: The Author (2022).

It can also be noted that the electronic platform and the services provided by IT service providers are most related to CyberSecurity, Data, and Operational risks. The usage of these actors is conditioned by the actions and connections established by the SCD and SEP organizations. In other words, it's the connections established by the SCD and SEP with these actors that result in the creation of CyberSecurity, Data, and Operational risks for the financial sector.

The same approach is valid for the actor BCB when it comes to the mitigation of risks. This mitigation is conditioned by the actions promoted by the BCB to regulate the legal environment, which thus occurs based on the connections established by the BCB in the network.

Thus, it can be stated that agency (GIDDENS, 1985; STEEN; COOPMANS; WHYTE, 2006; LATOUR, 2007), is mainly generated from connections established by the BCB and by the SCD and SEP organizations, which characterizes them as being key actants in the network.

Furthermore, these two key actors demonstrate that risk is being considered in the study from the mitigation perspective as well as from the increased perspective. This is an approach aligned with the study objectives and also with the regulatory aspects, where the increase and the mitigation of risks need to be considered for the interpretation.

The data from this first movement is what sustains the analysis of the next phase, thus allowing the research continuity to the second and third movements.

1.1.2. The Second Move: Redistributing the local

The analysis of ANT turns now to the second move, named redistributing the local. This movement is related to the question of "How is the local itself being generated?" (LATOUR, 2007). This movement encompasses the relationship between action and interaction (LATOUR, 2007), thus accounting for the new connections that are generated by human and also non-human actors (LATOUR, 1987; CALLON, 1991; LATOUR, 2007; SHIM; SHIN, 2016; WARD, 2018).

Considering the identified key actors, the ANT now aims to follow the strings of connection from the key actors. To this end, data related to the key actants was gathered and analyzed with a similar approach used to create the diagrams. The difference, however, remains in the fact that connections are here established emerging from the key actors.

1.1.1.1. Reassembling connections from the Key-Actor(s) – Brazil Central Bank

To explore the question “How is the local itself being generated?”, we first explored the key actor BCB. The search for data related to this key actor was conducted on the organization's website (https://www.bcb.gov.br/) (BANCO CENTRAL DO BRASIL, 2021). Since ANT requires the researcher to follow the strings of connection between actors (CALLON, 1991; LATOUR, 1987, 2007; WARD, 2018), the website of this key actor was identified as a repository that could provide valuable information to allow the strings of connection to be identified due to Law No. 12.597 (Access to information low) (PRESIDÊNCIA DA REPÚBLICA, 2011), which states that public administration organizations (including the BCB) are supposed to provide information related to several aspects of the organization's actions.

Furthermore, since SCD and SEP are institutions that operate under specific regulations of the BCB, it is expected that BCB would keep logs and other information related to SCD and SEP organizations that are operating in the Brazilian Financial System. This would allow the research to more easily find information about these actors and thus follow the strings of connection leading to them.

BCB website includes data related to various aspects of the Brazilian economy and the financial institutions that are authorized to work in the National Financial System (SFN). Apart from that, the website also provides a search engine where terms can be included for specific research, along with a specific area named “Access to Information”.

Considering that Resolution No. 4656, which specifically regulates Credit FinTechs, was issued by the BCB on April 26th of 2018, this date was selected as the cutoff point to start information and document collection.

The search on the institutional website of the BCB was conducted between March and April of 2021, and it started with the tab “Access to Information”, where information related to SCD and SEP was searched in the section Texts, Discussions, and Presentations, which contained the material used by representatives of the institution on formal events that have occurred.

This source was selected due to the importance of these people in the organizational scenario, expressing the organization's opinion and goals. Furthermore, their position is directly related to the relationship with other potential actors in this scenario, as they are usually present in events that several potential actors of the financial sector also attend.

A total number of 301 documents were collected from the section “Texts, Discussions, and Presentations”. These documents were read considering three aspects: (I) The mention of technological aspects; (II) The mention of FinTech aspects; and (III) The mention of Credit FinTech (SCD and SEP) aspects. The table containing the details of these documents, including if these aspects were mentioned or not is located in Appendix C of the study.

Due to the high number of documents, and to prevent data loss, a database was created to store each downloaded document. The database was maintained in two different locations, one on the researcher's computer, and a second on the cloud platform named Google One.

Following Bardin (2000) technique, the 301 documents were, in the first moment, read using the “floating reading” technique, to search for information related to technology, FinTechs, and more specifically to Credit FinTechs.

Information related to these aspects was identified in 89 documents, with emphasis on the year 2019, since Credit FinTechs and the regulation of SCD and SEP organizations were in the BCB Agenda.

These 89 documents were added to the software Atlas.ti and coded in the specific sentences where these topics were addressed. To identify the relationship of the coded sentences with the key actors being analyzed in the study, the same approach used to analyze the entities and actors from resolutions No. 4656 and No. 4658 was used.

To further enhance the collected data from the actor BCB, the search engine of the website was used to search for specific information related to the SCD and SEP institutions. The search was conducted based on keywords identified from the float reading in the 301 documents collected in the last phase. Based on the options available on the website, the search could be restricted to News, publications, or Regulations. However, as the goal of ANT is to follow the strings of connection between actors, the search was conducted with the filter ‘everything’, encompassing all types of publications on the website. Table 8 summarizes the used keywords and the number of results encountered.

The resources from these searches were collected and added to the database to undergo the float reading process (BARDIN, 2000). Again, the goal of this process was to validate if the content of the documents was related to the Credit FinTechs and more specifically to the SCD and SEP organizations. If the resource was a webpage itself, the page was saved in .pdf format using the Microsoft Print to PDF option, thus allowing it to be loaded and analyzed in the Atlas.ti software.

TABLE 8 – RESULTS ENCOUNTERED ON THE BCB WEBSITE

STRING	FIELD	RESULTS
"Fintech de crédito"	all	2 resources
"Fintechs de crédito"	all	30 resources
"sociedade de crédito direto"	all	116 resources
"sociedades de crédito direto"	all	23 resources
"sociedade de empréstimo entre pessoas"	all	25 resources
"sociedades de empréstimo entre pessoas"	all	16 resources
"SEP"	all	36 resources*
"SCD"	all	34 resources

NOTE: * The number of results with this keyword was 179. However, this high number occurred because 'SEP' is also used as the prefix for the month of September. To this end, only resources dated after April 26th of 2018, and only resources specifically referring to SEP as "Peer-to-Peer Loan Company were added to the list".
SOURCE: The Author (2022).

The total number of resources collected from the searchers described in Table 8 was 282. However, duplicated results were also expected since each string had to be used individually in the search engine. To this end, the data was loaded into an excel file, allowing duplicates to be removed. The Table containing the details of the 282 documents is located in Appendix D of the study.

From the 282 resources, it was identified that 97 of them were unique documents. Since all these documents were addressing aspects related to Credit FinTechs, all of them were added to the Atlas.ti software, being coded in specific sentences related to SCD and SEP organizations.

The next step was the coding of these documents to identify the actors in the network. To do that, the same approach used for the coding of the initial documents (Resolutions No. 4656 and No. 4658) was followed. This time, however, and aligned with other ANT studies (SHIM; SHIN, 2016; BALASESCU; JAIN, 2018; WARD, 2018), actors are mapped directly out of their relationship with the key actors. Aspects related to risk and agency are still present and the network is now re-established from the key-actor connections.

To this end, another set of codes was created to identify the relationship with the key actors in the analysis. Table 9 summarizes the codes created.

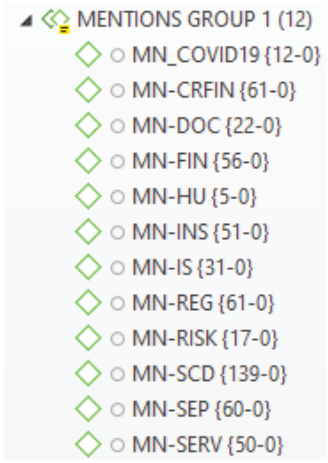
TABLE 9 – DESCRIPTION OF THE CODES USED TO MAP THE MENTIONS

CODE GROUP	CODE	DESCRIPTION	EXAMPLES
MENTIONS (MN)	MN-COVID19	Mention to Coronavirus Pandemic (COVID-19)	Strings that in their sentence contains references to the COVID-19 pandemic issue.
	MN-CRFIN	Mention to Credit FinTechs	Strings that in their sentence contain references to Credit FinTech institutions.
	MN-DOC	Mention to Documents	Strings that in their sentence contains references to Documents.
	MN-FIN	Mention to FinTechs	Strings that in their sentence contain references to FinTech institutions.
	MN-HU	Mention to Humans beings	Strings that in their sentence contains references to Human beings.
	MN-INS	Mention to Institutions	Strings that in their sentence contain references to institutions related to the key actors.
	MN-IS	Mention to Information Systems	Strings that in their sentence contain references to information system entities.
	MN-REG	Mention to Regulation aspects	Strings that in their sentence contain references to regulation aspects.
	MN-RISK	Mention Risk aspects	Strings that in their sentence contain references to risk aspects.
	MN-SCD	Mention so Direct Credit Society	Strings that in their sentence contains references specifically to SCD institutions.
	MN-SEP	Mention to Loan Society between People	Strings that in their sentence contain references specifically to SEP institutions.
	MN-SERV	Mention to Services provided	Strings that in their sentence contain references to the services provided by the Credit FinTechs and also by Information Technology institutions

SOURCE: The Author (2022).

The number of highlighted citations of each code is summarized in Figure 10.

FIGURE 10 – NUMBER OF HIGHLIGHTED CITATIONS IN THE BCB DOCUMENTS

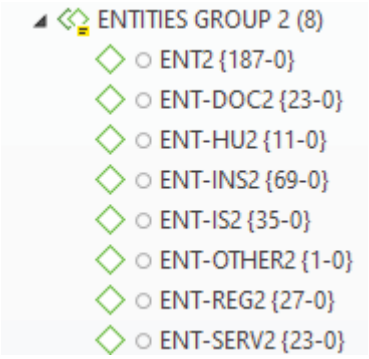


SOURCE: The Author (2022).

Each mention contained in the codes of Figure 10 was then analyzed for the recreation of the network. Thus, new codes for entities were also created for this part of the analysis. The created codes are replicas of the ones contained in Table 5 with the addition of the number 2 at the end of each code. By using the new codes it was ensured that the analysis performed in the previous two documents did not affect the re-assemble of the network based on the documents collected from the BCB key actor.

Figure 11 summarizes the codes created for entities, which resulted in 187 entities identified from the document mentions.

FIGURE 11 – CODES USED TO MAP THE ENTITIES IN THE BCB DOCUMENTS



SOURCE: The Author (2022).

Following the identification of entities according to the codes located in Figure 11, a network for each code was also created with the software Atlas.ti. This allowed better visualization of the entities at this phase of the study. Furthermore, all entities were mapped in an excel table, also having their names translated to English to facilitate the construction of the networks. The table containing the identified entities, along with their translation to the English language is located in Appendix E of the study.

Another group of codes was also created to assess risks in the Atlas.ti software. These codes are also replicas of the previous codes created to assess risk in the previous phase (Table 7), with the number 2 added at the end of each code. Figure 12 summarizes the new codes used to assess risk in the collected documents from BCB. With that approach, the software Draw.io was used again to establish the relationships between the actors, with the connections emerging from the key actor (LATOUR, 2007).

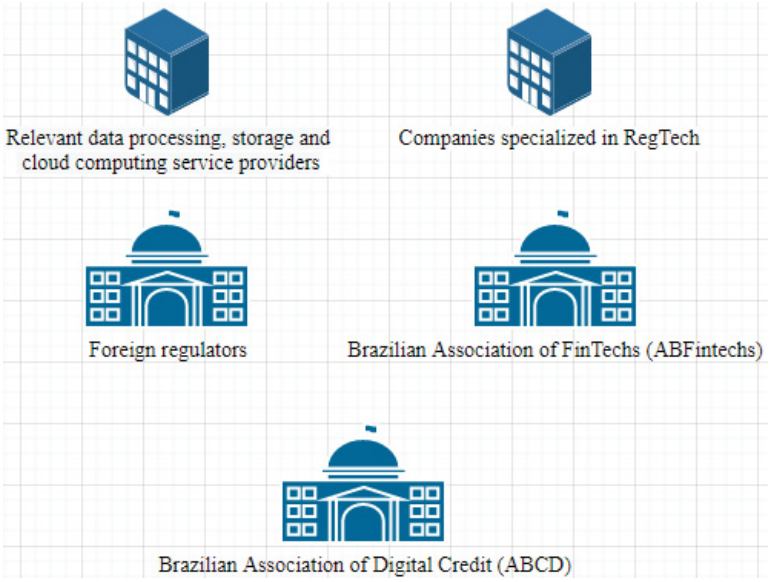
For a better understanding, the actors identified in this scenario will be first introduced and a brief description of their role (the rationales used for their selection) will be provided, allowing the reader to better visualize the network that is presented afterward.

FIGURE 12 – CODES USED TO MAP THE RISK IN THE BCB DOCUMENTS

SOURCE: The Author (2022).

Based on the application of ANT in the collected documents, Figure 13 summarizes the institutional actors identified.

FIGURE 13 – INSTITUTIONAL ACTORS IDENTIFIED IN THE BCB DATA



SOURCE: The Author (2022).

Table 10 summarizes the associated risks and the rationales of each institutional actor contained in Figure 13. These rationales represent a summary of their relationship with the aspects of risk encompassed in the analysis. To this end, this table represents the entities that were translating information (CALLON, 1991; LATOUR, 2007) and thus generating agency (GIDDENS, 1985; LATOUR, 2007).

As can be seen from Table 10, most actors have an approach aligned with the mitigation of risks. Some actors such as the Brazilian Association of FinTechs (ABFintechs) and the Brazilian Association of Digital Credit (ABCD) act as a proxy in the network, thus accounting for both the interests of FinTechs (including SCD and SEP) and also for the interests of the regulators. This occurred due to the goal of having proper regulation in place to mitigate risks.

TABLE 10 – DETAILS OF THE INSTITUTIONAL ACTORS FROM BCB DATA

ACTOR NAME	TYPE OF RISK ASSOCIATED	RATIONALITIES
Relevant Data processing, storage, and cloud service providers (IT service providers*)	**Increase:** Operational risks; Data risks; Cybersecurity risks;	This actor, which was previously identified with the name "IT service providers" in the analysis of Resolutions No. 4656 and No. 4658, represents IT organizations that provide services for SCD and SEP organizations. The service provided by these organizations does not come without risk as various concerns are raised about the service provided by third-party IT organizations to financial institutions. The data demonstrate that Operational risks appear due to interruptions of services or issues with the contracts that might occur, thus generating outages or lack of support from the IT service provider. Data risks are also present since organizational and customer data stored in the service providers are susceptible to cyber-attacks and data leaks. IT providers might be very well protected against cyber-attacks, but the extent of how the systems are indeed maintained, designed, or supported might not be very clear, thus resulting in cybersecurity risks that might be omitted from the financial institutions that hire this type of service.
Companies specialized in RegTech	**Mitigation:** Data risks; Cybersecurity risks;	This actor represents organizations that aim to assist with the regulatory aspects of SCD, SEP, and other financial institutions that make intense use of IT. To this end, this actor is focused on the mitigation of Data and Cybersecurity risks. Data demonstrates that this type of organization is expected to better understand the requirements of technology and thus align it with the demands of regulators to create an environment where financial innovation could flourish under proper regulatory circumstances.
Foreign regulators	**Mitigation:** Cybersecurity risks; Operational risks; Data Risks; Credit Risk;	This actor represents institutions that the Brazilian financial system that has an open dialog. This actor is related to a better understanding of how novel business models that encompasses IT are designed and regulated in other countries. To this end, data demonstrate that this actor can assist with risk mitigation, providing solutions and approaches already in place in other countries. Data also demonstrate more emphasis on Credit and Data risks.

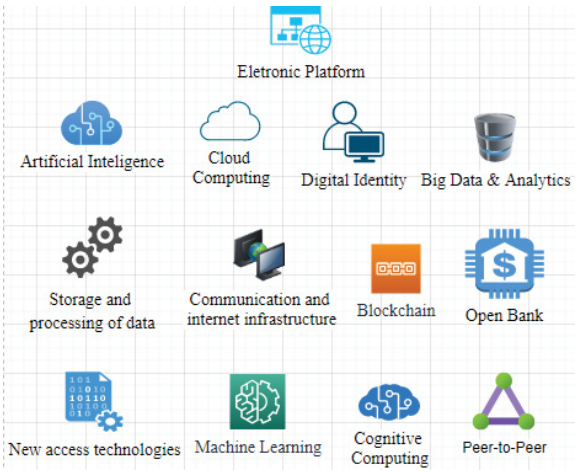
Brazilian Association of Fintechs (ABFintechs)	**Mitigation:** Credit Risks; Cybersecurity risks; Operational risks; Data Risks;	This actor represents institutions that aim to assist FinTechs. Data demonstrates that this actor needs to take into consideration the specific needs that FinTechs demand, while at the same time, it also needs to take into consideration his role in the financial system, which encompasses a direct relationship with regulators such as the BCB. Thus, data demonstrate that the outcome of this actor is to create a balance between the needs of FinTechs and the expectations of the regulators, assisting to build a scenario where risks can be mitigated. This actor can also be seen as a 'proxy' that filters the interests of FinTechs and tries to align them with the needs of the regulators, aiming to achieve a solution that would meet everyone's needs.
Brazilian Association of Digital Credit (ABCD)	**Mitigation:** Credit Risks; Cybersecurity risks; Operational risks; Data Risks;	This actor also has a similar role to the previous one described, thus representing the interests of organizations from the Digital Credit Segment, and also a close relationship with regulators. To this end, data demonstrate that this actor is also can be considered a 'proxy', thus filtering the Credit FinTechs' needs and the demands of regulatory agencies, aiming to achieve better solutions that encompass innovations with proper regulation.

SOURCE: The Author (2022).

As can be seen, the essence of the relationship relies on the technological aspects that encompass the interests of both FinTechs and Regulators. Two examples are the Cybersecurity and Data risks, to which all institutional actors identified are related.

Following the identification of actors, Figure 14 summarizes the information system actors identified from the data collected at the BCB.

FIGURE 14 – INFORMATION SYSTEM ACTORS IDENTIFIED IN THE BCB DATA



SOURCE: The Author (2022).

Table 11 summarizes the rationales for these actors containing the details identified in the data.

TABLE 11 – DETAILS OF THE INFORMATION SYSTEM ACTORS FROM BCB DATA

ACTOR NAME	TYPE OF RISK ASSOCIATED	RATIONALITIES
Electronic Platform*	**Increase:** Operational risks; Cybersecurity risks;	This actor, which was already identified in the analysis of Resolutions No. 4656 and No. 4658, has a direct relationship with the increase in Cybersecurity risks. Although electronic platforms used by financial institutions (including SCD and SEP) tend to be highly secure, this actor opens a vulnerability path for issues since it also relies on end-user activities that might affect the efficiency of the platform protection. To this end, cybersecurity risks increase due to concerns related to platform vulnerabilities that might have not been yet addressed. Furthermore, the collected data also demonstrates that electronic platforms might also display operational risks since this is the main access method to services provided by SCD and SEP organizations, which thus leads to operational risks related to IT services.
Peer-to-Peer Lending*	**Mitigation / Increase:** Credit risk; Cybersecurity risks;	Peer-to-Peer lending, was also identified in the analysis of Resolution No. 4656. The type of technology (P2P) used by this actor is not new. It has already been used for a long time in the file transfer processes, for example. Torrent downloads are a classic example of this technology. Nevertheless, the use of this technology in the financial system, allowing a creditor to directly connect with a debtor is what brings concerns to regulators. The main factor being considered is, of course, Credit risks. The direct connection between creditors and debtors can lead to an increase in credit risks that can be ultimately transformed into a systemic risk if not properly managed. To this end, most of the analyzed data correlate P2P lending with an increase in credit risk. Nevertheless, another portion of the data also states that P2P could resolve the issue related to the lack of resources available for debtors, which would thus mitigate the credit risks. Cybersecurity risks are also taken into consideration, which occurs because this is a novel technology in the financial sector. As a result, there is a lack of proper regulation that addresses cybersecurity aspects regarding that technology, which could lead to a decrease in the usage of security protocols by financial institutions which ultimately increases this type of risk.

Machine Learning	**Mitigation / Increase:** Credit risks;	This actor is perceived in the data with a twofold and ambiguous definition, with is related to both increases as well as mitigation of risks. A portion of the analyzed data states that Machine learning can assist with the creation of credit models that are more aligned with the customer reality, allowing the financial institutions to better perceive their credit rates. This view states that this actor can assist with the mitigation of credit risks. At the same time, another portion of data states that this actor can create a serious problem related to credit analysis. The criteria used by the technology might not be clear and precise, or it could not be very objective in terms of measurement from the regulatory point of view. This would result in the opposite effect of what the technology was supposed to achieve, thus increasing the credit risk.
Digital Identity	**Mitigation:** Cybersecurity risks; Operational risks;	This actor represents a concept directly related to the realm of digitalization. It consists of the use of digital documents for the identification of someone's identity. To this end, this actor can allow Credit FinTechs to work faster, reducing operational risks related to the slowness of internal and validation processes. At the same time, it also allows digital validation of documents provided by Credit FinTech customers, which can also lead to the mitigation of cybersecurity risks. According to the data, a digital and integrated identity would prevent fraud and create a greater barrier for hackers and other cybersecurity breaches.
Open banking	**Mitigation:** Credit risks; Operational risks;	This is an actor that a large portion of data emphasized. Although it does not specifically address the SCD and SEP organizations, this actor is related to the integration of systems and information among financial institutions. The objective is to improve the reliability and consistency of information that is stored by these institutions, allowing customer data to be shared among them. To this end, this actor is perceived as something that mitigates credit and operational risks, by allowing information to be shared and technologies to be integrated.
Big Data & Analytics	**Mitigation / Increase:** Credit risk;	This actor also has a twofold and ambiguous definition according to the collected data. Some portion of the data states that this actor can assist organizations to create credit models that are more accurate to the customer profiles. This would result in a mitigation of credit risks since more precision would be achieved by the financial institutions when evaluating the credit rate. Nevertheless, the same concern related to Machine Learning is also present in another portion of the data, where it is stated that the model or the 'logic' used in the model might not be clear for regulators which would, in turn, increase the credit risk.

Artificial Inteligence	**Mitigation / Increase:** Credit risks;	Artificial intelligence is another actor that displays the same ambiguity in terms of mitigation or increase of risks. The same two aspects displayed by Big Data & Analytics and Machine learning are identified in the data, with result in an unclear role related to mitigation or increase of Credit Risk.
Cognitive computing	**Mitigation / Increase:** Credit risks;	Cognitive computing is also an actor perceived with an ambiguous role in terms of risk. Since this actor represents a technology that aims to 'learn patterns based on provided data', regulators suggest that it could either increase or mitigate credit risks, with the same reasons displayed for Artificial intelligence, Machine Learning, and Big Data & Analytics.
Blockchain	**Mitigation / Increase:** Credit risks; Data risk; Cybersecurity risk;	Blockchain is one of the main technology that allowed Peer-to-Peer Lending to be used in financial services. Due to its disruptive potential, this technology displays a very unclear position in terms of risk according to the data analyzed. From one side, blockchain is expected to solve issues related to cybersecurity and data risks, since data will be stored in 'blocks' interconnected to one another, in a system that was still unable to be hacked to the present date. On the other side, the data demonstrates that regulators display concerns regarding how such technology could be regulated from the perspective of cybersecurity and data risks. Furthermore, the concerns related to the extent how which this service can increase or mitigate credit risks present at Peer-to-Peer Lending.
Cloud computing	**Increase:** Cybersecurity risks; Data risks;	Cloud Computing is a technology that a few years ago was at the center of discussion regarding the IT strategy of organizations. Although its discussions date back to 2011, it is a technology that still figures in scientific studies due to its disruptive potential (Cruzara et al., 2019). Nevertheless, this actor represents a technology that has already been used by various industries, including financial institutions. To this end, this actor is perceived in the analyzed data as being related to an increase in cybersecurity and data risks. This is why Resolution No. 4658 focuses, among other services, on cloud computing technologies. Most concerns are related to how and where the data is being stored. According to regulators, data being stored in other countries are susceptible to the regulation of that country, which could not meet the requirements of the country where the provision of financial service is taking place.

New access technologies	**Mitigation:** Cybersecurity risks; Data risks;	This actor represents novel technologies that are already in place or that will be developed to create a more secure environment for financial transactions. To this end, this actor is perceived in the data as being related to the mitigation of cybersecurity and data risks. The data demonstrates that this actor is expected to assist by preventing data breaches and unauthorized access to cyber systems, with more reliable technology and protocols.
Storage and processing of data	**Increase:** Cybersecurity risks; Data risks;	This actor represents the concept of data storage and data manipulation by financial institutions. To this end, the collected data demonstrate that regulators have concerns due to the FinTechs' usage of third-party IT providers to store and process their customer data. To this end, the same concerns related to actor Cloud Computing are present here, resulting in Cybersecurity and Data risks emerging.
Communication and internet infrastructure	**Increase:** Cybersecurity risks; Data risks; Operational risks;	This actor represents the foundation of IT services, being an actor that allows connections between various IT devices to be established. To this end, internet and communication infrastructure are usually considered threats to cybersecurity and data aspects, since a large part of the cyberattacks use breaches in these technologies to take advantage of the users. The collected data also demonstrates that this actor is related to the increase in cybersecurity and data risks. Furthermore, the collected data also demonstrate that this actor could contribute to operational failures due to instability and outages, which also increases operational risks.

NOTE: * denotes actors already identified in Resolutions No. 4656 and No. 4658.
SOURCE: The Author (2022).

Based on Table 11, a clear difference between more traditional technologies (Electronic Platform, Cloud Computing, Storage and Processing of Data, and Communication and Internet Infrastructure) and novel technologies (Machine Learning, Big Data & Analytics, Artificial Intelligence, Cognitive Computing, and Blockchain) is identified. While the first ones have a clear definition regarding the aspects of risk in the analyzed data, novel technologies still have an unclear definition in terms of mitigation or increase of risks. The same is valid for the actors Peer-to-Peer Lending, which is not a novel technology from the IT perspective but has only recently been applied to the financial market.

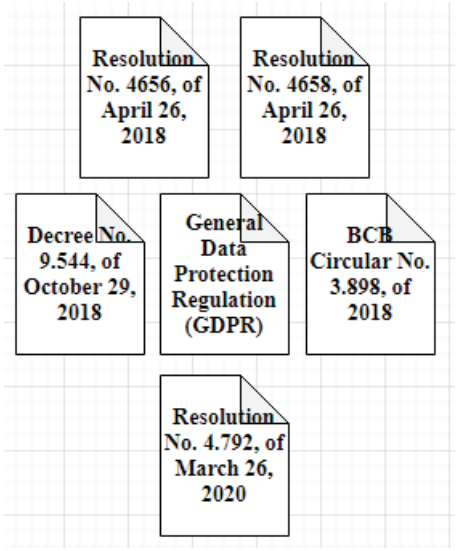
Nevertheless, some novel technologies such as Digital Identity, Open Banking, and New access technologies do display a very clear definition in terms of their relationship with risk, all of them being related to mitigation of risks.

According to the data, technologies that do not yet display a clear definition of their risk aspects are often related to the concept of ‘Artificial intelligence’. Apart from Peer-to-Peer

Lending and Blockchain, which are more related to uncertainty regarding Credit risks, the other information system actors identified (Machine Learning, Big Data & Analytics, Artificial Intelligence, Cognitive Computing) are all related to uncertainty in terms of Cybersecurity and Data risks. At the bottom line, these are all technologies that aim to sustain the Artificial intelligence of cybernetic systems. Big data & Analytics are tools that can allow the creation of trends and identification of patterns that can be used by cognitive computing and machine learning to have artificial intelligence created.

To mitigate risks that are created by information technology actors, Regulatory actors are identified in the data. To this end, Figure 15 summarizes the Regulatory actors that were identified.

FIGURE 15 – REGULATORY ACTORS IDENTIFIED IN THE BCB DATA



SOURCE: The Author (2022).

Table 12 summarizes the rationales of the actors identified in Figure 15. It can be noted that all regulatory actors identified aim to have risks mitigated. However, it is important to mention that only Resolution No. 4.658 aims to mitigate cybersecurity and data risks, while all the other actors focus on the mitigation of Credit and Operational risks. Furthermore, although Resolution No. 4.658 does focus on cybersecurity and data risks, it does not specifically address information about system actors that do not yet have a clear relationship with risks. In other words, its content does not specifically deal with Machine Learning, Cognitive Computing, and Artificial Intelligence, only encompassing older technologies such as Cloud computing and more general services such as storage and processing of data. Based on the collected data, more specific regulation is needed for these novel technologies, especially when it comes to their application in credit rate models and consumer behavior.

TABLE 12 – DETAILS OF THE REGULATORY ACTORS FROM BCB DATA

ACTOR NAME	TYPE OF RISK ASSOCIATED	RATIONALITIES
Resolution No. 4.656 / 2018*	**Mitigation:** Operational risks; Credit risk;	This actor, which was previously identified in the analysis, emerged once again in the data collected from the BCB institutions. Being the main regulation for SCD and SEP organizations, it focuses on the mitigation of Credit and Operational risks, containing the procedures that regulate SCD and SEP organizations and the guidelines of how their service is allowed to be provided.
General Data Protection Regulation (GDPR)	**Mitigation:** Cybersecurity risks; Dara risks;	This actor is a general regulation that aims to provide more grounded rules for the mitigation of Cybersecurity and Data risks. The objective is to create a more valuable scenario for the customers of digital services, requiring service providers and other organizations that work with customer data to standardize their procedures and create a more transparent relationship with their customers, explaining which types of data are collected, how they are processed and also providing the customer the option to remove its data from the databases of the referred institution.
Resolution No. 4.792, March 26, 2020	**Mitigation:** Operational risks; Credit risk;	This actor is a complementary resolution that provides changes to Resolution No. 4656. It includes more services such as the issuance of credit cards by the SCD institutions. Based on the data, that resolution was developed to assist the economic recovery from the Covid-19 pandemic, thus providing more freedom and advantages for SCD and SEP institutions. To this end, this actor is also directly related to the mitigation of operational and credit risks.
Decree No. 9.544, October 29, 2018	**Mitigation:** Operational risks; Credit risk;	This actor is a regulation issued by the Brazilian Government to allow foreign capital to be used in the social capital of SCD and SEP organizations. The goal was to reduce operational and credit risks that could emerge due to the type of service provided by these institutions.
CMN Resolution No. 4.658, 2018*	**Mitigation:** Cybersecurity risks; Dara risks;	This actor, which was also previously identified in the analysis, emerged again from the data collected at the BCB. It displays a supplementary regulation for the SCD and SEP organizations, being the main regulation that addressed the cybersecurity policy and the requirements for contracting services related to data processing, data storage, and cloud computing by financial institutions and other institutions authorized to work by the Central Bank of Brazil. To this end, it has a major aspect related to the mitigation of cybersecurity and data risks.

BCB Circular No. 3.898, 2018	**Mitigation:** Operational risks; Credit risk;	This actor also aims to provide mitigation of operational and credit risks by specifically addressing the necessary documents that SCD and SEP institutions should present based on what is established in Resolution No. 4656.
Resolution No. 4.812	**Mitigation:** Operational risks; Credit risk;	This actor is related to another change in the regulation, which allowed credit institutions to issue Bank Deposits Certificates. According to the data, this is also another response of the Brazilian Government to the crisis caused by the pandemic of Covid-19. To this end, this actor is also related to the mitigation of Operational and Credit risks, providing more support for SCD and SEP institutions.

NOTE: * denotes actors already identified in Resolutions No. 4656 and No. 4658.
SOURCE: The Author (2022).

These regulations usually establish some documents that need to be taken into consideration for the SCD and SEP organizations, aiming to better assist with the mitigation of risks. To this end, Figure 16 contains the documental actors that were identified.

FIGURE 16 – DOCUMENTAL ACTORS IDENTIFIED IN THE BCB DATA

SOURCE: The author (2022).

Table 13 summarizes the rationales of the identified documental actors. It can be noted that all documental actors identified in the data collected from the BCB are also already identified in the analysis of Resolutions No. 4656 and No. 4658.

TABLE 13 – DETAILS OF THE DOCUMENTAL ACTORS FROM BCB DATA

ACTOR NAME	TYPE OF RISK ASSOCIATED	RATIONALITIES
Cybersecurity policy*	**Mitigation:** Data risks; Cybersecurity risks;	This actor, which was also previously identified in the analysis, is related to the mitigation of data and cybersecurity risks. Its objective is to have a policy that could meet the regulator's needs for the provision of financial services. To this end, financial institutions authorized to work by the BCB need to have a cybersecurity policy in place to perform their activities, being this regulated under Resolution No. 4658.

Authorization to work issued by the BCB*	**Mitigation:** Credit risks;	This actor, which was also previously identified in the data, is related to the control performed by the BCB to mitigate the credit risks created by the SCD and SEP institutions. To be able to act as a financial institution under the name of SCD or SEP, the institutions must be first authorized to work by the BCB. To this end, this actor is a gatekeeper for new entrants, demanding specific criteria to be met for the authorization to be issued.
Contracts*	**Mitigation:** Credit risks;	Contracts are another actor that was already identified in the analysis. It displays and establishes the relationship between the SCD and SEP institutions and their customers. In the case of the SEP, it also establishes the relationship between debtors and creditors. To this end, it is an actor related to the mitigation of credit risks, with the creation of a legal relationship between other actors.
Credit analysis model*	**Mitigation:** Credit risks;	The credit analysis model is also an actor that was also already present in the analysis. It is related to the legal request that SCD and SEP organizations have to use credit models to evaluate their customer's ability to pay or the risk appetite that creditors have. To this end, it is a very critical mechanism to mitigate credit risks, which encompasses a lot of discussion in the data, especially due to the usage of novel technologies such as artificial intelligence and cognitive computing to create these analysis models.

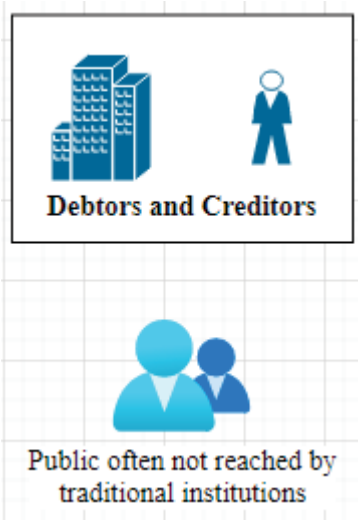
NOTE: * denotes actors already identified in Resolutions No. 4656 and No. 4658.
SOURCE: The Author (2022).

All of these actors were already found in Resolutions No. 4656 and No. 4658 because these two resolutions are the main regulatory mechanisms to have SCD and SEP regulated. To this end, it was expected that most of the documents related to the scenario of these institutions would be present in the analysis of these two documents.

Furthermore, all actors from the documental category also aimed to have risks mitigated, with most of them addressing Credit Risks. The only exception was the Cybersecurity policy, which focuses specifically on cybernetic and data risks, something already identified in Resolution No. 4658.

The documental actors ‘Credit Analysis model’, and ‘Contracts’ are two examples of actors directly related to the customers of SCD and SEP institutions. Based on the data, these customers could be both humans as well as institutional actors. These actors are explored in more detail in Figure 17, which summarizes the human and institutional actors identified in the data collected from the key-actor BCB.

FIGURE 17 – HUMAN AND INSTITUTIONAL ACTORS IDENTIFIED IN THE BCB DATA



SOURCE: The Author (2022).

Table 14 summarizes the rationales for these actors, showing that all human and institutional actors identified are related to the increase in credit risk.

TABLE 14 – DETAILS OF THE HUMAN AND INSTITUTIONAL ACTORS FROM BCB DATA

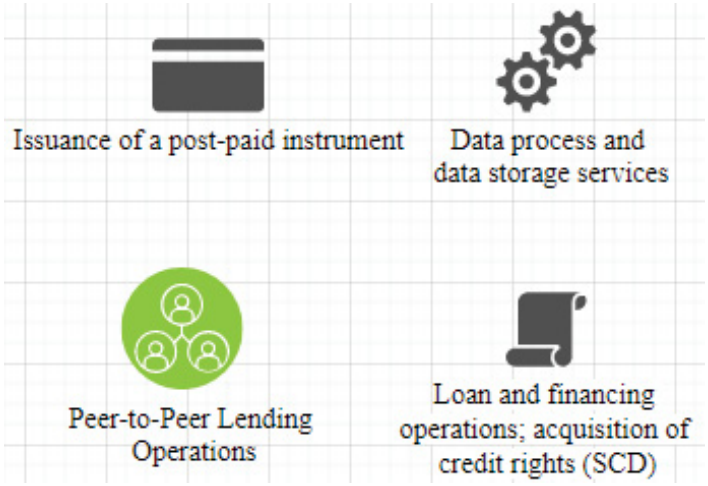
ACTOR NAME	TYPE OF RISK ASSOCIATED	RATIONALITIES
Public often not reached by traditional institutions	**Increase:** Credit risks;	This actor represents the types of customers addressed by FinTechs, Credit FinTechs, and SCD/SEP institutions. To this end, this actor is perceived in the analyzed data as being related to an increase in Credit risk. This occurs because this type of customer might not be aware of the true risks related to the type of service provided by SCD and SEP institutions. According to the data, that situation combined with smaller access to financial resources could result in the inability to repay the debt, which increases the credit risk.
Debtors*	**Increase:** Credit risks;	Debitors, which is an actor that was also already identified in the analysis of Resolutions No. 4656 and No. 4658, represent an actor directly related to the increase of credit risks. This occurs because this actor is often represented by customers that have less access to financial services, including customers that have less monetary income. To this end, they ended up increasing the credit risks since FinTech institutions might lack proper credit analysis models at the same time that the customer might lack the ability to repay its debts.

Creditors*	**Increase:** Credit risks;	Creditors, an actor that was also previously identified, also display a similar situation to its counterpart, debitors. To this end, they are also related to an increase in the credit risk, which occurs due to the nature of services provided by Credit FinTechs. Creditors that are addressed by these organizations might have more appetite for risk or could not be aware of the true risks that lending money has. This is especially true for the SEP business model, where creditors and debtors are directly connected with the P2P model.

NOTE: * denotes actors already identified in Resolutions No. 4656 and No. 4658.
SOURCE: The Author (2022).

Based on the collected data, the risks present on Human and institutional actors occur mainly due to the type of customer that SCD and SEP organizations aim to address, which tends to display either lower-income or more challenging and uncertain scenarios to repay their debts, such as startup organizations. The services identified in the BCB data are summarized in Figure 18 and Table 15.

FIGURE 18 – SERVICE ACTORS IDENTIFIED IN THE BCB DATA



SOURCE: The Author (2022).

The data contained in Table 15 demonstrate that the service actors are all related to an increase in risks. This is also an expected behavior since SCD and SEP, although being regulated by the BCB, are still novel institutions in the financial system.

Furthermore, the actor Data Process and data storage services also display an increase in cybersecurity and data risks. This actor is directly related to the information system actors, thus having a direct connection with risks generated by these technologies in the financial system.

TABLE 15 – DETAILS OF THE SERVICE ACTORS IDENTIFIED FROM BCB DATA

ACTOR NAME	TYPE OF RISK ASSOCIATED	RATIONALITIES
Issuance of a post-paid instrument, in the case of the SCD	**Increase:** Credit risks;	This actor represents a new type of service that can be provided by SCD organizations. This service emerged from a change made to regulation, which also encompasses the actions taken by the Brazilian Government to fight the crisis generated by Covid-19. To this end, the goal was to facilitate access to credit for the customers of the SCD organizations. Although this has the potential to increase the amount of money circulation, it also has a downturn related to the increase of Credit risk, since the customer might be unable to repay their debts, especially the customers of FinTech institutions.
Loans, financing, and acquisition of credit rights*	**Increase:** Credit risks;	This actor, which was already identified in the analysis of Resolution No. 4656, represents the fundamental service provided by SCD organizations. To this end, this is a type of service that increases the Credit risk in the system.
Direct loan operations between people (Peer-to-Peer Lending Operations)*	**Increase:** Credit risks;	This actor, which was also identified in the analysis of Resolution No. 4656, represents the fundamental service provided by SEP organizations. To this end, this is an actor directly related to the increase in Credit risks. It represents a new service that was not regulated before Resolution No. 4656, creating a direct connection between Debtors and Creditors, which thus poses threats that are not fully mapped yet. This could lead to the discovery of novel aspects of credit risks that are not yet known by regulators.
Data process and data storage services	**Increase:** Data risks; Cybersecurity risks; Operational risks;	This actor represents the services provided by IT organizations to SCD and SEP institutions. To this end, the collected data consider this actor as being critical for the provision of IT services to financial institutions. Failures in this service could lead to operational issues and thus increase operational risks. At the same time, concerns with Data and cybersecurity risks are also identified, since the location of data and also the operational aspects of the service provided might compromise the cybersecurity and thus increase these two types of risk.

NOTE: * denotes actors already identified in Resolutions No. 4656 and No. 4658.
SOURCE: The Author (2022).

The collected data also displayed an actor that did not fit any of the prior categorizations. This actor emerged from the collected data in the document entitled “Medidas De Combate Aos Efeitos Da Covid-19”, which was a presentation performed by the former President of the BCB Roberto de Oliveira Campos Neto, on March 23rd of 2020. That document

is the first account for the term Covid-19 in the collected data, thus referring to the pandemic created by the new coronavirus.

Following this document, several mentions to the Covid-19 are identified, encompassing actions taken by the BCB to assist financial institutions, potential issues to financial services that were caused by the pandemic, updates related to the pandemic scenario in the country, and concerns displayed by the BCB about the situation. Appendix C of the study also contains a column with additional information about which documents have mentioned Covid-19. Considering that, Figure 19 summarizes this new actor that was identified.

FIGURE 19 – DETAILS OF THE OTHER ACTOR IDENTIFIED IN THE BCB DATA

SOURCE: The Author (2022).

Table 16 contains the rationales of this actor according to the collected data.

TABLE 16 – DETAILS OF THE OTHER ACTORS IDENTIFIED FROM BCB DATA

ACTOR NAME	TYPE OF RISK ASSOCIATED	RATIONALITIES
Covid-19 Pandemic	**Increase:** Operational risks; Credit risks	This is an actor that represents the pandemic caused by Covid-19. To this end, the collected data demonstrate two main concerns. The first one is the increase of Operational risks, which may occur due to an overload of the IT system that organizations have. This occurs because several institutions adopted home office job design as a measure to slow down the pandemic situation. The second one is the increase in Credit risks, which was not the major concern in the first moment when the actor emerged, but soon took the spotlight due to the proportions of the pandemic. To this end, the collected data consider this actor as a serious threat to financial stability, which occurs because this actor can very easily reduce the number of formal jobs, and personal income, and also increase the price of basic products due to breakdowns that it causes in the supply chain of industries. Based on the data, this can very easily turn into a systemic risk if not properly managed.

SOURCE: The Author (2022).

Considering the identified actors, the rationales described in the previous tables, and also taking into consideration the aspects of risks that were mapped based on the collected data, the software draw.io was used once more to update our findings to ANT. To this end, Figure

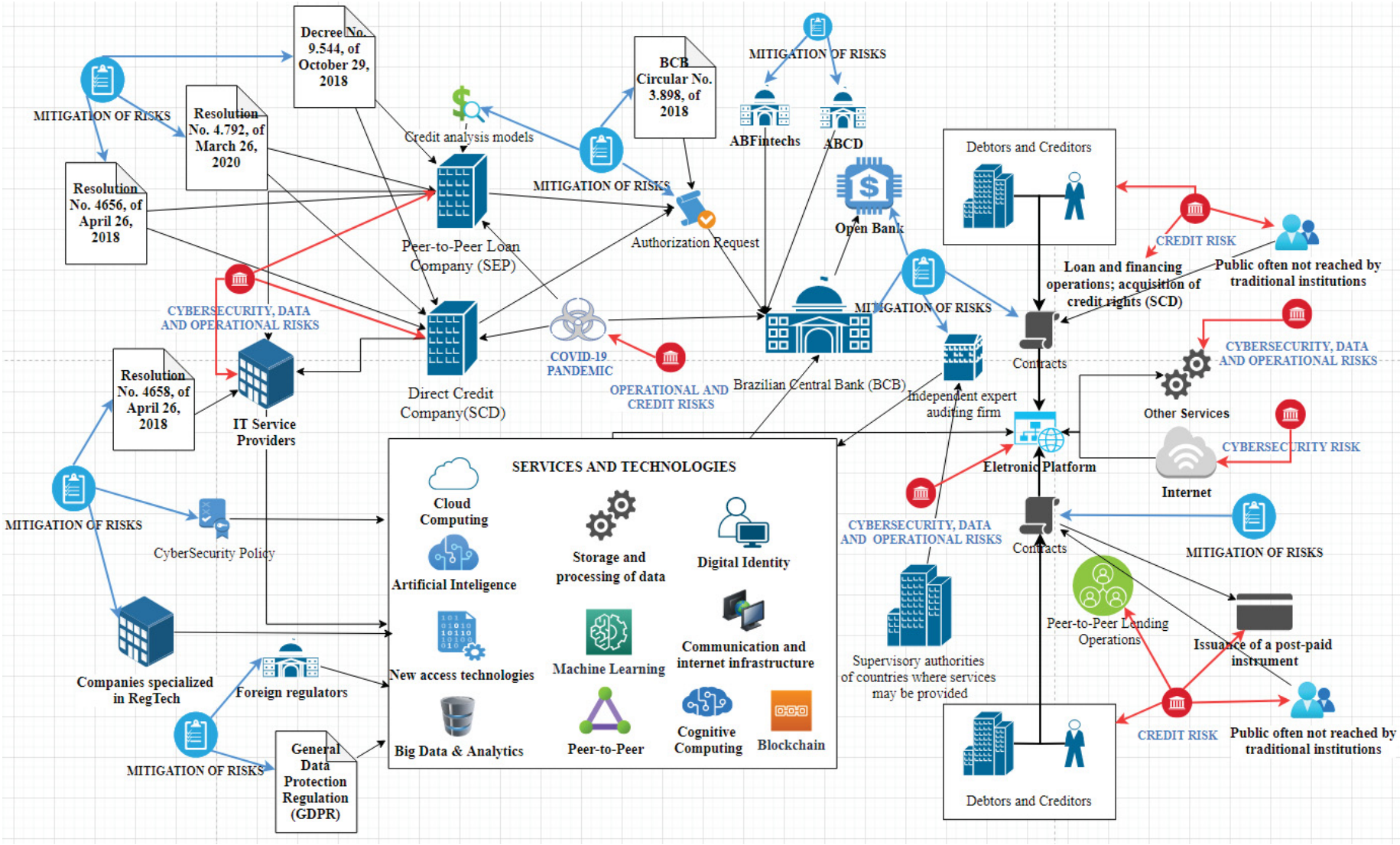
20 summarizes the updated actor network, encompassing the actors identified from the BCB data that was collected.

To facilitate the understanding, abbreviations were added to some actors, such as the Brazilian Central Bank (BCB), Brazilian Association of Digital Credit (ABCD), and the Brazilian Association of FinTechs (ABFintechs). The name of the actor representing the main service provided by SEP institutions was also changed to Peer-to-Peer Lending Operations, thus better explaining its role in the network.

The biggest change, however, is related to the actor Services and Technologies, which is located in the middle of the figure and is now expanded into a group of actors. This block represents all technology actors provided by IT Services Providers.

This demonstrates the importance of information system actors for the network, with them being central actors in the network to allow the connection between the two focal actors that were identified (BCB and the Credit FinTech). This also results in the IT service providers being central actors for the network, along with the other actors that are directly connected to the Information System actors in the center of the network.

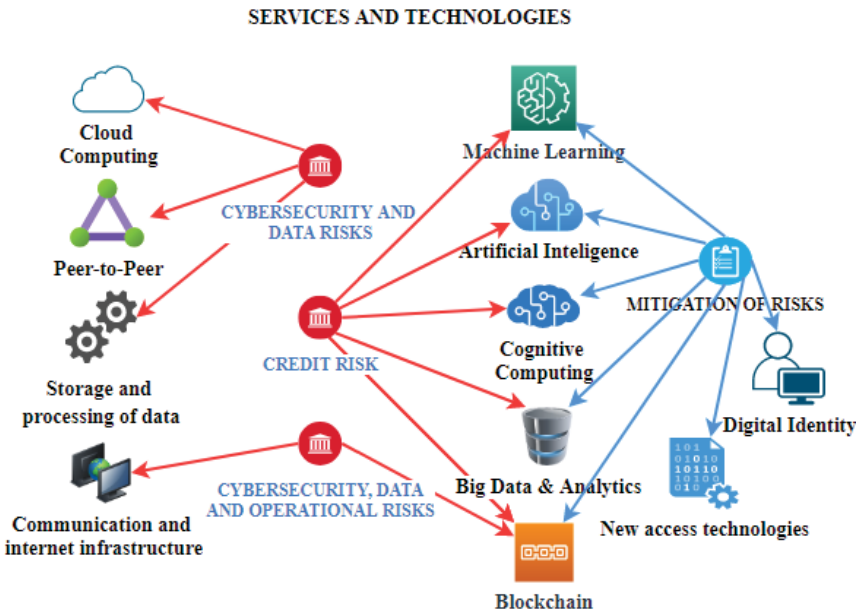
FIGURE 20 – DIAGRAM DEMONSTRATING THE UPDATED ACTOR-NETWORK



SOURCE: The Author (2022).

Based on the changes performed, the direct relationship between the service and technology actors was omitted from the network to facilitate the visualization. To provide more details about their relationship with the risk aspects, Figure 21 summarizes the relationship of these actors with the aspects of risk.

FIGURE 21 – RISKS OF THE INFORMATION SYSTEM ACTORS FROM BCB



SOURCE: The Author (2022).

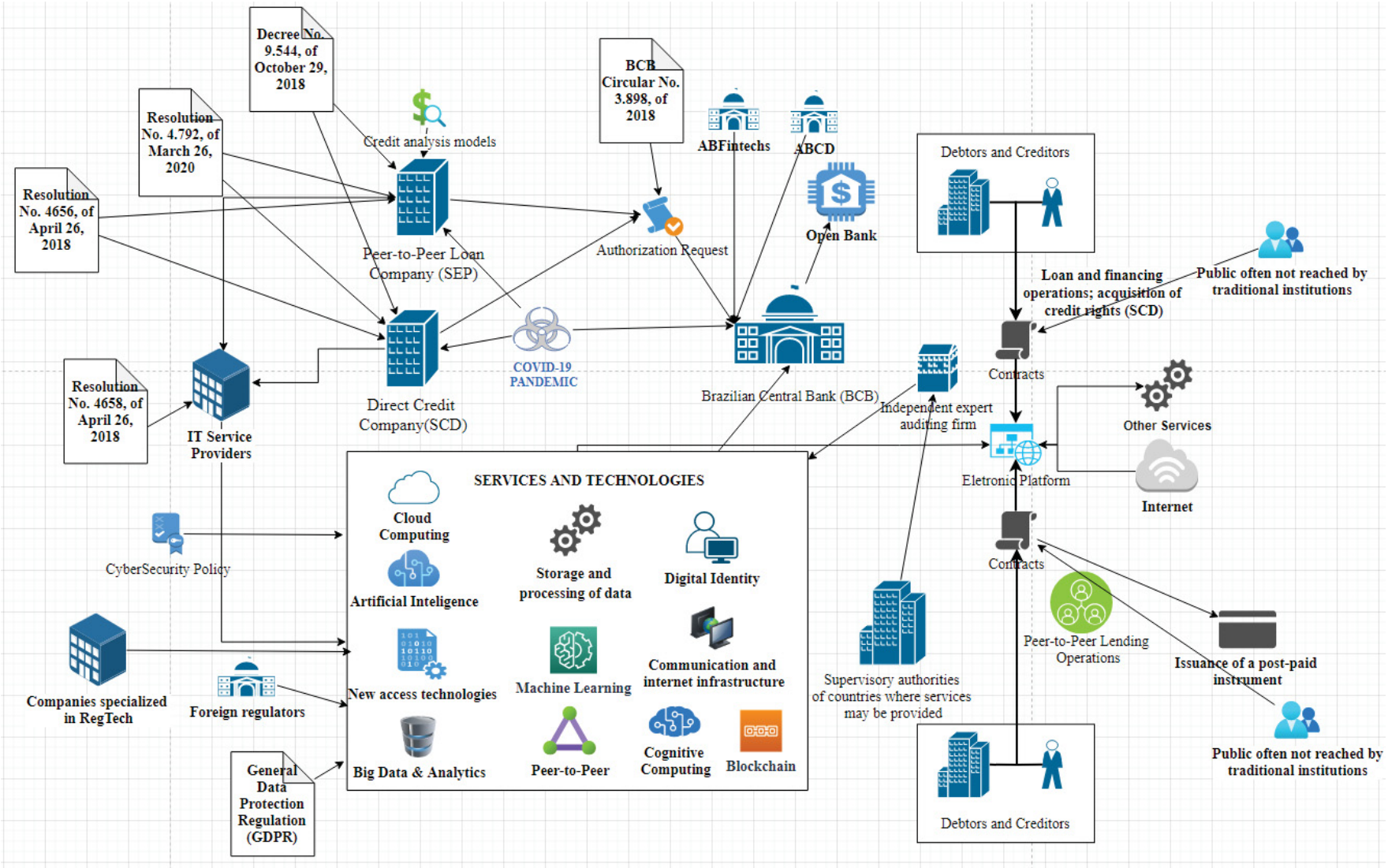
As can be seen from Figure 21, there are several actors with a dual relationship when it comes to the aspects of risk, thus encompassing mitigation as well as the increase of risks.

Apart from that, it is important to mention that the emergence of the actor named COVID-19 Pandemic resulted in several changes to the financial scenario. The emergence of other actors such as the issuance of a post-paid instrument, (a new service provided by SCD institutions) is an example of that.

Other actors representing institutions connecting the key-actor BCB with the SCD and SEP were also identified, thus accounting for proxy institutions that can assist the SCD, SEP, and also other FinTechs to have more regulatory representativeness. At the same time, these actors can assist the regulators to negotiate with FinTechs to achieve a regulation that meets everyone's needs.

To provide better visualization of the actors, Figure 22 encompasses the same actors present in Figure 20 but with the risk aspects removed from the view.

FIGURE 22 – DIAGRAM DEMONSTRATING THE UPDATED ACTOR-NETWORK WITHOUT RISK



SOURCE: The Author (2022).

Considering these diagrams, the next subsection will encompass the re-creation of the network based on data collected from SCD and SEP institutions.

1.1.1.2. Reassembling connections from the Key-Actor(s) – SCD and SEP institutions

To the present point, the analysis has focused on the data collected from the BCB key actor. Nevertheless, in the initial analysis, SCD and SEP institutions were also identified as being focal actors that should be taken into account. To this end, the research now turns to the data provided by these institutions, which will complement the data collected from the BCB, allowing the full visualization of the actor-network to be created.

As stated in the previous section, it was expected that the BCB would have data that could lead to potential SCD and SEP institutions under its regulation, allowing the researcher to more easily find information about these actors and thus follow their strings of connection.

This was indeed identified in the collected data, with some documents collected from the BCB specific accounting for information related to SCD and SEP institutions. Table 17 summarizes the names and the institutional websites of the identified SCD institutions identified from BCB data.

TABLE 17 – SCD INSTITUTIONS IDENTIFIED AT BCB COLLECTED DATA

SCD INSTITUTION NAME	SCD INSTITUTIONS WEBSITE
BMS SCD S.A.	https://bancobms.com.br/
QI SCD S.A.	https://qitech.com.br/
CREDITAS SCD	https://www.creditas.com/
LISTO SCD S.A.	https://www.soulisto.com.br/
ÓTIMO SCD S.A.	https://www.otimoscd.com.br/
BÔNUSCRED SCD S.A.	https://www.bonuscred.com.br/
COBUCCIO SCD S.A.	http://grupoadrianocobuccio.com.br/empresas-do-grupo/cobuccio-sociedade-de-credito-direto.html
SUMUP SCD S.A.	https://sumup.com.br/
CORA SCD S.A.	https://www.cora.com.br/blog/cora-scd/
CARTOS SCD S.A.	https://www.cartos.com.br/
FINERGY SOCIEDADE DE CRÉDITO DIRETO S.A.	Not provided in BCB data and also not identified over research on the internet
STONE SOCIEDADE DE CRÉDITO DIRETO S.A.	https://www.stone.com.br/
Trinus Sociedade de Crédito Direto S.A.	http://trinusco.com.br/
Zipdin Soluções Digitais Sociedade de Crédito Direto S.A.	https://zipdin.com.br/
Gerencianet Sociedade de Crédito Direto S.A.	https://gerencianet.com.br/

Solução Finanças Sociedade de Crédito Direto S.A.	https://solucaodigitalonline.com/
Marú Sociedade de Crédito Direto S.A.	Not provided in BCB data and also not identified over research on the internet
Multicred Sociedade de Crédito Direto S.A.	Not provided in BCB data and also not identified over research on the internet
NBRS Sociedade de Crédito Direto S.A.	https://www.numbrs.com.br/
Cred-System Sociedade de Crédito Direto S.A	https://www.credsystem.com.br/
Credifit Sociedade de Crédito Direto S.A.	https://www.credifit.com.br/
Platacred Sociedade de Crédito Direto S.A.	http://www.platacred.com/
FFCRED Sociedade de Crédito Direto S.A	https://www.ffcred.com.br/
Giro Socieadade de Crédito Direto S.A.	https://giro.tech/
Stark Sociedade de Crédito Direto S.A.	https://starkbank.com/br
TANGER SOCIEDADE DE CRÉDITO DIRETO S.A.	http://www.tanger.com.br/
BRCard Sociedade de Crédito Direto S.A.	https://brcardcrediario.com/
DMCARD Sociedade de Crédito Direto S.A.	https://www.dmcard.com.br/portal/
Work Sociedade de Crédito Direto S.A	https://www.work.com.br/
Geru Sociedade de Crédito Direto S.A.	https://www.geru.com.br/emprestimos/sobre-nos/
Delcred Sociedade de Crédito Direto S.A.	https://www.delcred.com.br/
Fincapital Sociedade de Crédito Direto S.A	Not provided in BCB data and also not identified over research on the internet
J17 Sociedade de Crédito Direto S.A.	Not provided in BCB data and also not identified over research on the internet
N26 Sociedade de Crédito Direto S.A.	https://n26.com/pt-br
HB Capital SCD S.A	https://www.fontecred.com.br/para-sua-empresa/#fontecred
BMP Money Plus SCD S.A	https://www.moneyp.com.br/
Starcred SCD S.A.	https://www.starcred.com/scd/
Bigcash SCD S.A.	https://bigcash.com.br/
Lamara SCD S.A.	http://klcred.com.br/
Valor SCD S.A.	https://valorfinanciamentos.com.br

SOURCE: The Author (2022).

Table 18 summarizes the names and institutional websites of the identified SEP institutions identified from BCB data.

TABLE 18 – SEP INSTITUTIONS IDENTIFIED AT BCB COLLECTED DATA

SEP INSTITUTIONS NAME	SCD INSTITUTIONS WEBSITE
UP.P SEP S.A.	https://www.upp.com.br/
Crednovo Sociedade de Empréstimo entre Pessoas S.A.	https://crednovo.com.br/
Fido Sociedade de Empréstimo entre Pessoas S.A.	https://fido.com.vc/
Emcash Serviços Financeiros Sociedade de Empréstimo entre Pessoas S.A.	https://emcash.com.br/
Mova SEP S.A.	https://mova.vc/
Nexoos SEP S.A.	https://www.nexoos.com.br/
Bulla SEP S.A.	https://www.bullla.com.br/
QI SEP S.A.	https://qitech.com.br/

SOURCE: The Author (2022).

As can be noted, there is a greater number of SCD institutions identified in the data. This is a reflection of the number of requests that the BCB received to approve new institutions of this type. The SEP institutions are more specifically focused on P2P lending and thus not being able to provide some services that the SCD can, seems to have attracted less interest as a business model for financial institutions.

To construct the second part of the actor-network, SCD and SEP institutions had data from their websites extracted and analyzed following the same approach used for the BCB, with the ANT approach related to strings of connection used for the analysis (CALLON, 1991; LATOUR, 1987, 1991, 2007).

The institutional website of the SCD and SEP organizations was identified in the BCB data and if that was not provided, it was searched over the internet. It is important to note that although Resolution No. 4656 specifies that SCD needs to operate using an electronic platform, where the platform is considered the electronic system that connects creditors to debtors through an internet website or application, some SCD institutions did not display much information available over the internet, with some of them not having their website identified in the data or over the internet.

It was also identified that some SCD institutions are members of bigger financial groups. Thus, although they do display a specific Employer Identification Number (known as CNPJ in Brazil), not much information related to this Identification number was available over the internet. In other words, these types of SCD organizations remained ‘hidden’ inside the services provided by the bigger financial institution that they were related to.

The same behavior was also identified with smaller institutions from other segments. One SCD institution, for example, was ‘hidden inside a technology company”. While another one was ‘hidden inside a company related to the retail segment”. In some cases, the specific activity related to Credit was not easily identified and the name “Direct Credit Company” was only identified in the financial reports provided by the institution.

On the other side, some institutions made clear that they were categorized as being a “Direct Credit Company”, usually trying to provide as much information as possible for the user that accesses their institutional page. These institutions usually did not display any connection with bigger financial institutions, focusing on transparent communication with the customer about the provided services. Furthermore, these institutions also displayed concerns regarding their cybernetic environment, providing access to their cybersecurity policy on the website. Some other institutions went event further, displaying more details about the technologies used by the institutions, such as programming languages, APIs (application programming interfaces), and other IT services that were used.

To this end, aiming to further explore and provide the answer to the question “How is the local itself being generated?”, data from the institutional websites of the SCD and SEP organizations were collected, thus following the string of connections between the actors (CALLON, 1991; LATOUR, 1987, 2007; WARD, 2018).

The search on the institutional websites was conducted between August and September of 2021. Since the institutional websites are not standardized among one another, and most of them do not provide a search engine, the websites were reviewed entirely, with all of their web pages being analyzed in search for information that would be related to the services provided by these institutions, along with other potential actors related to the provision of these services.

The search in the entire website of these institutions was possible since the SCD and SEPs were small organizations. To this end, their websites had a reasonable amount of data to be collected and analyzed by a single researcher.

Bardin (2000) technique was also used again to categorize the data contained in the institutional websites. To this end, the data was in the first moment analyzed with the “floating reading” technique. That was performed aiming to have information related to documents, information systems, services, customers, partners, regulations, and risks identified.

These types of information correspond to the categories of entities previously identified in Resolutions No. 4656 and No. 4658 (initial analysis) and also in the BCB Data.

With the float reading technique (BARDIN, 2000), the collected data was analyzed and if it contained information related to the refereed categories, it was saved with the Microsoft

Print to PDF option, allowing it to be loaded and analyzed in the Atlas.ti software in the .pdf format. To prevent a data loss to occur, the collected data was also stored in two main different locations, the researcher's computer and the Google One Platform.

A total of 269 documents were collected from 33 SCD institutions. And a total of 70 documents were collected from 6 SEP institutions. Appendix F summarizes the types of documents collected from each institution.

Table 19 and Table 20 summarize the institution names, along with their position (how the institutions display themselves to their customers), which was identified based on the float reading that was performed in the collected data. The provided services identified in the data are also present in these tables, along with the number of documents that were collected from each institution.

Based on the float reading that was performed, a classification for the institution position was created. More specifically, the organizations were classified as (I) Financial institutions, the ones that focus on emphasizing the financial services provided, without explicitly mentioning that the organization was an SCD, SEP, or a FinTech. (II) Technology / Digital institutions are the ones that focus more on the technological aspects of the provided services, thus trying to demonstrate to their customers the benefits of the technologies that the company has to offer. (III) SCD institutions, the ones that explicitly mentioned to the customer that it was operating as an SCD organization, mention the regulation related to this type of organization. (IV) Hiden institutions, the ones that remained ‘hidden’ inside bigger financial groups or other institutional types, such as technology companies, with no mention of it being an SCD institution identified on the website (apart from the financial reports). (V) FinTech institutions, the ones positioning themselves specifically as FinTechs, thus emphasizing aspects related to both technologies as well as financial services provided, also demonstrating how FinTechs can merge these two aspects to provide better services, but without mentioning the fact that the organization is an SCD or SEP. And (VI) SEP institutions, the ones that specifically identify themselves as being SEP institutions, thus demonstrating to the customer the benefits that this type of institution can offer and providing the available regulations that allow it to operate.

TABLE 19 – DETAILS OF SCD INSTITUTIONS AND AMOUNT OF DOCUMENTS COLLECTED

SCD INSTITUTION	SCD WEBSITE	SCD POSITION (How it presents itself to the customers).	SERVICES PROVIDED (identified in the institution website)	NUMBER OF DOWNLOADED DOCUMENTS
BMS SCD S.A.	https://bancobms.com.br/	**Financial Institution.** Identify itself as a Financial institution but does not give much emphasis on explaining or demonstrating what is this type of institution or how it is regulated. Information related to used technologies and financial reports was also not identified on the institution's website.	**For business:** Digital account, *Escrow* account, Loans, Payroll loans, Smart Safe, Insurance, Billing service, Debt Issuance and Asset Structuring, BaaS (Bank as a Service). **For personal accounts:** Digital account, Loans, Debt Negotiation, Insurance, Salary portability.	4
QI SCD S.A.	https://qitech.com.br/	**Technology / Digital institution.** Identify itself as a technology institution that has a license to operate as a financial institution. Provides the option to have an account created in a sandbox environment for testing purposes and all the documentation related to API technologies used for the provided services.	Escrow account, Bank slips, Debt Issuance, Credit analysis, Receivables lock.	62
CREDITAS SCD	https://www.creditas.com/	**Technology / Digital institution.** Focus on the services provided, demonstrating the advantages of online loans. Although it mentions that the organization is an SCD but does not give much emphasis to informing the customer. Also, provide the documentation for the API that is used. On the organization's website, it is also possible to verify that it has a connection to bank correspondent activities since there are other institutions of the	**For business accounts:** Payroll loans. **For personal accounts:** Store, Online loan, Property refinancing, Loan with vehicle guarantee,	23

		same financial group that perform this activity. However, which services are provided by those are not made not clear to one another.	Vehicle refinancing, Vehicle financing, Private payroll loan, Salary Anticipation.	
LISTO SCD S.A.	https://www.soulisto.com.br/	**Technology / Digital institution.** This SCD institution is a member of a bigger organizational group that encompasses institutions from other segments, most of them being from the technology sector. The organization focuses on loans to micro, small and medium enterprises, and positions itself as a Digital Institution.	Working Capital loans, online loans, Vehicle financing.	13
ÓTIMO SCD S.A.	https://www.otimoscd.com.br/	**SCD institution.** This organization identifies itself as an SCD. It displays a focus on the connection between technology and financial services, thus providing various information related to compliance and other documents that are required by the BCB regulations. However, it does not give much emphasis to the services that are provided on the opposite side.	Digital account.	14
BÔNUSCRED SCD S.A.	https://www.bonuscred.com.br/	**Hidden institution.** This SCD is a member of an institutional group that holds other financial organizations. To this end, no mention of it being a FinTech or an SCD is provided on the Website. Not much data is also available for the institution and thus only two documents were collected	n/a	2
COBUCCIO SCD S.A.	http://grupoadrianocobuccio.com.br/empresas-do-grupo/cobuccio-sociedade-de-credito-direto.html	**Hidden institution.** This SCD is a member of an institutional group that holds other financial organizations. To this end, only one mention stating that this FinTechs is a member of the group is provided. Not much data is also available for the institution and thus only one document was collected	n/a	1

SUMUP SCD S.A.	https://sumup.com.br/	**Financial institution.** This institution focuses on the provision of payment systems (payment machines) and also on the provision of technology for its customers. The organization provides access to the APIs used by its systems and also to the historical data of IT incidents and the current status of the systems. Technical information related to Android and IoS SDK (including the code used), and also very granular detail of other technological aspects, related to the website itself are available, such as detailed information about which cookies are stored when you visit their website. The group that appears to own this institution also has another institution related to payment solutions. On the opposite side, however, very little detail about the SCD itself is available on the website.	Payment machines	11
CORA SCD S.A.	https://www.cora.com.br/blog/cora-scd/	**SCD institution.** Identified itself as an SCD with a focus on the provision of financial services for entrepreneurs. Provide information related to the compliance and other documents that are required by the BCB to authorize an SCD to work.	Legal Person account (focussed on advantages for entrepreneurs), Cards, Bank slip issuance, Collection management.	9
CARTOS SCD S.A.	https://www.cartos.com.br/	**FinTech institution.** Focus on the explanation of the services provided. Identify itself as a FinTech but does not refer to it being an SCD. Provide the cybersecurity police but do not provide much emphasis on the technologies that are used by the organization.	**For Personal accounts:** Digital account, Payroll loans. **For Business accounts:** Digital Account, Private Credit Agreement, Card Machine Bank as a Service (BaaS).	6
FINERGY SOCIEDADE	Not provided in BCB data and also not identified over research on the internet	n/a	n/a	n/a

DE CRÉDITO DIRETO S.A.				
STONE SOCIEDADE DE CRÉDITO DIRETO S.A.	https://www.stone.com.br/	**Technology / Digital institution**. Focus on the services provided, demonstrating the advantages of the provided services, especially in regards to their card machines. The SCD itself is not referenced on the organization's website directly. The organization provides access to the whole APIs and technologies used in the provision of financial services.	Card Machine, Pix, Online sell, Payment Link, E-commerce, Cards, Transferences, Payments and recharges, Control, X-ray (tracing system), Loans, Anticipation, Loyalty, Health insurance, Life insurance.	6
Trinus Sociedade de Crédito Direto S.A.	http://trinusco.com.br/	**Hidden institution.** This SCD is a member of an institutional group that holds other organizations. To this end, no mention of it being a FinTech or an SCD is provided on the Website. The SCD is only mentioned in their financial reports.	n/a	1
Zipdin Soluções Digitais Sociedade de Crédito Direto S.A.	https://zipdin.com.br/	**Financial institution.** The organization identifies itself as a Financial institution. Despite the mention of it being SCD, it does not give much emphasis on explaining or demonstrating what is this type of institution or how it is regulated. It focuses more on establishing its position as a financial institution. It also does not provide details on used technologies but does provide more information on reports related to risks, such as credit risk, and cybernetic risk than the other institutions.	Payroll Credit As a Service, Corporate Credit as a Service, Bank as a Service (BaaS), Private Payroll Credit.	12
Gerencianet Sociedade de Crédito Direto S.A.	https://gerencianet.com.br/	**Technology / Digital institution**. This SCD institution is a member of a group that contains other organizations. It focuses on emphasizing the aspects of the technology it offers, and how these technologies can assist its customers. It does provide access to resources related to their APIs as well as reports related to risk aspects.	Pix, Bank Slips, Payment booklet, Payment links, Signatures, Marketplace, Prepaid card, Computer application.	14

Solução Finanças Sociedade de Crédito Direto S.A.	Not provided in BCB data and also not identified over research on the internet	n/a	n/a	n/a
Marú Sociedade de Crédito Direto S.A.	Not provided in BCB data and also not identified over research on the internet	n/a	n/a	n/a
Multicred Sociedade de Crédito Direto S.A.	Not provided in BCB data and also not identified over research on the internet	n/a	n/a	n/a
NBRS Sociedade de Crédito Direto S.A.	https://www.numbrs.com.br/	**SCD institution.** This organization identifies itself as an SCD. The organization focuses on the customer segment of micro and small enterprises. However, it does not provide information about used technologies, risk aspects, or services provided.	n/a	2
Cred-System Sociedade de Crédito Direto S.A	https://www.credsystem.com.br/	**Financial institution.** This organization identifies itself as a financial institution. But make no direct mention of it being an SCD organization. The organization focuses on juridical persons from the retail segment, directing its solutions to organizations from this segment.	Issuance of cards.	5
Credifit Sociedade de Crédito Direto S.A.	https://www.credifit.com.br/	**SCD institution.** This institution focus on the provision of financial services, identifying it as an SCD. It emphasizes the regulation that allows it to perform this type of work. It does not provide access to APIs or other information related to technological aspects. Reports related to risk were also not identified on the website.	Private payroll loan, Working capital, Prepayment of receivables, Credit transaction structuring.	3
Platacred Sociedade de Crédito Direto S.A.	http://www.platacred.com/	**SCD institution.** This institution identifies itself as an SCD. It also emphasizes the regulation that allows it to perform this type of work. It does not provide access to APIs or other information related to technological aspects. Reports related to risk were also not identified on the website, and services provided were also not listed on the website as well.	n/a	1

FFCRED Sociedade de Crédito Direto S.A	https://www.ffcred.com.br/	**Financial institution.** This organization identifies itself as a financial institution but makes no direct mention of it being an SCD organization. The organization focuses on the provision of financial services without specifying a customer segment. It also does not provide details related to technologies or risk aspects on its website.	Payroll loan, Debt portability, Interest rate reduction, Refinancing, Personal credit, Credit card, Withdrawal from FGTS, Credit Rehabilitation.	2
Giro Socieadade de Crédito Direto S.A.	https://giro.tech/	**Technology / Digital institution.** This institution focus on the technological aspects of the provided services. It does not directly mention that it is an SCD organization. Furthermore, although it does focus on the technological aspects not much information related to used technologies is displayed on its website.	Bespoke financing, Banking (Anticipation to Suppliers, Customer Financing, Payroll loans, Salary Anticipation)	4
Stark Sociedade de Crédito Direto S.A.	https://starkbank.com/br	**Technology / Digital institution.** This institution focus on the technological aspects of the provided services. It does not directly mention that it is an SCD organization. It provides various information related to the used technologies, such as the entire API reference that was developed by the organization as well as the source codes in the GitHub platform. A changelog is also provided to track changes to the application and a sandbox environment is also made available for the customer to test their services.	Validate bank details, Payroll, Reimbursement, Suppliers payment, Bank slip, Pix, Bank transfer.	9
TANGER SOCIEDADE DE CRÉDITO DIRETO S.A.	http://www.tanger.com.br/	**Hidden institution.** This SCD is a member of an institutional group that holds other organizations. Their main line of business is related to the clothing segment, while the SCD aspects remain hidden in this group. To this end, no mention of it being a FinTech or an SCD is provided on the Website. It also does not provide details about used technologies or risk aspects.	n/a	2

BRCard Sociedade de Crédito Direto S.A.	not provided in BCB data and also not identified over research on the internet	n/a	n/a	n/a
DMCARD Sociedade de Crédito Direto S.A.	https://www.dmcard.com.br/portal/	**Financial institution.** This organization identifies itself as a financial institution. It does not make any reference to it being an SCD organization. The organization focuses on the provision of financial services without specifying a customer segment. Their focus is also on the provision of Credit Cards. The organization does provide access to its financial reports but it does not provide much information regarding technologies or risk aspects on its website.	Credit card, Digital account	6
Work Sociedade de Crédito Direto S.A	https://www.work.com.br/	**SCD institution.** This institution focus on the provision of financial services, identifying itself as an SCD. It lists the regulation that allows it to perform this type of work. However, and different from other institutions that position themselves as SCDs, this one does not provide much access to used technologies or risk reports. It also does not precisely specify which type of services it provides.	n/a	5
Geru Sociedade de Crédito Direto S.A.	https://www.geru.com.br/emprestimos/sobre-nos/	**Financial institution.** This organization identifies itself as a financial institution. It makes no direct mention of it being an SCD, but it does state that it operates using an online platform for the provision of services. The SCD institution is in the same group as other technology organizations. Thus, this organization tries to emphasize the technical part of the provided service, without specifying a customer segment.	n/a	5

Delcred Sociedade de Crédito Direto S.A.	https://www.delcred.com.br/	**Hidden institution.** This SCD does not provide much information about the services provided or the technologies used. The website contains only basic information about the activities performed, not emphasizing a customer segment and also not giving details about technologies, reports, and other documents that address risk aspects.	n/a	1
Fincapital Sociedade de Crédito Direto S.A	not provided in BCB data and also not identified over research on the internet	n/a	n/a	n/a
J17 Sociedade de Crédito Direto S.A.	not provided in BCB data and also not identified over research at internet	n/a	n/a	n/a
N26 Sociedade de Crédito Direto S.A.	https://n26.com/pt-br	**Hidden institution.** This SCD also does not provide much information about its activities. Based on the website, it can be noted that it is a member of a bigger institution, being an international one. To this end, the information provided leads one to believe that their services are not yet provided in the country of Brazil. No access to technologies or reports is available.	n/a	2
HB Capital SCD S.A	https://www.fontecred.com.br/para-sua-empresa/#fontecred	**Financial institution.** This organization identifies itself as a financial institution. It makes no direct mention of it being an SCD. But on their website, some information related to SCD organizations can be identified. The organization focuses on the provision of services to persons that want to finance bicycles or motorcycles, as well as small enterprises that need working capital. It does not provide access to in-depth technological aspects like other institutions, but other reports related to cybersecurity and financial aspects are available on its website.	Financing of motorcycles, financing of bicycles, Prepayment of Receivables, working capital	9

BMP Money Plus SCD S.A	https://www.moneyp.com.br/	**Technology / Digital institution.** This institution focus on the technological aspects of the provided services. It does not directly mention that it is an SCD organization or a FinTech. It provides some information related to the used technologies, especially regarding how these technologies are used by their customers. Some reports related to compliance and risk aspects are also available.	Working Capital for Marketplace and Acquiring, Direct Consumer Credit for Electronic Commerce, Vehicle Financing, Private Payroll Credit, Personal Credit, Credit Analysis, and Collection Services, Structuring of Assets and Securities.	
Starcred SCD S.A.	https://www.starcred.com/scd/	**SCD institution.** This institution identifies itself as an SCD. On its website, it lists the regulations that allow it to operate. It does not provide access to APIs or other information related to technical aspects but provides access to financial reports and other documents related to risk aspects.	Working capital, Prepayment of receivables	10
Bigcash SCD S.A.	https://bigcash.com.br/	**SCD institution.** This institution identifies itself as an SCD. It lists the regulation that allows it to perform this type of work. It does not provide access to APIs or other information related to technological aspects but provides access to financial reports and other documents related to risk aspects.	Online loans	6
Lamara SCD S.A.	http://klcred.com.br/	**Financial institution.** This organization identifies itself as a financial institution. Although it makes no direct mention of it being an SCD, it does state that the organization is authorized to work by the BCB. The organization focuses on the provision of financial services specifically for entrepreneurs and small enterprises. It also does not provide much emphasis on technologies or risk aspects on its website, but it does provide access to its cybernetic security policy.	Microcredit to small enterprises and entrepreneurs	5

Valor SCD S.A.	https://valorfinanciamentos.com.br	**Financial institution.** This organization identifies itself as a financial institution. Although it makes no direct mention of it being an SCD organization, it does state that the organization is authorized to work by the BCB. It also does not provide much emphasis on technologies or risk aspects on its website, but it does provide access to its cybernetic security policy.	Payroll loan, Personal loan	10

SOURCE: The Author (2022).

TABLE 20 – DETAILS OF SCD INSTITUTIONS AND AMOUNT OF DOCUMENTS COLLECTED

SEP INSTITUTION	**SEP WEBSITE**	**SEP POSITION (How it presents itself to the customers).**	**SERVICES PROVIDED (identified in the institutions website)**	**NUMBER OF DOWNLOADED DOCUMENTS**
UP.P SEP S.A.	https://www.upp.com.br/	**SEP institution**. This institution identifies itself as a SEP. It focuses on demonstrating the benefits that the institution can offer with its, stating that they are reliable and regulated by the BCB. It does provide access to a variety of information including reports related to technology and risk aspects. However, a specific customer segment is not informed.	Peer-to-Peer Lending	19
Crednovo Sociedade de Empréstimo entre Pessoas S.A.	https://crednovo.com.br/	**SEP institution**. This institution identifies itself as a SEP. It focuses on demonstrating aspects that prove to its customers that the provided services are reliable since they are regulated by the BCB. It does provide access to some reports but does not specify a customer segment.	Peer-to-Peer Lending	8
Fido Sociedade de Empréstimo entre Pessoas S.A.	https://fido.com.vc/	**SEP institution.** This organization provides the identification that it is a SEP institution. However, it does not provide any other information on its website, which appears to still be under construction during the period of data collection for this research.	n/a	0

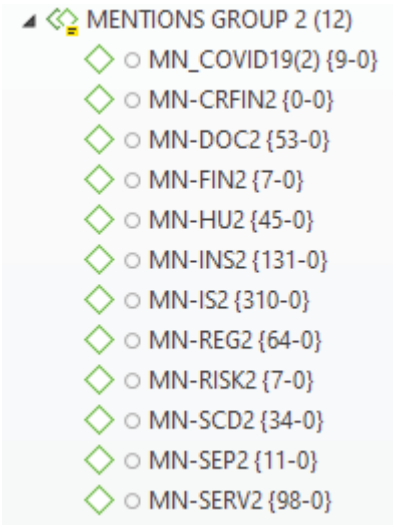
Emcash Serviços Financeiros Sociedade de Empréstimo entre Pessoas S.A.	https://emcash.com.br/	**SEP institution.** This organization provides the identification that it is a SEP institution. However, it does not provide much information on its website related to technological aspects or risk aspects. Only some basic information about the provided services is available. It also does not specify which customer segment it aims to address.	Peer-to-Peer Lending	1
Mova SEP S.A.	https://mova.vc/	**Financial institution.** This institution identifies itself as an online platform for peer-to-peer lending operations. It focuses on demonstrating how this service has benefits for both borrowers as well as for creditors. It does provide access to some reports related to risk and also to some reports related to technological aspects. A specific customer segment is not provided by the organization.	Peer-to-Peer Lending	17
Nexoos SEP S.A.	https://www.nexoos.com.br/	**Financial institution**. This institution position itself as being a company with a focus on technological aspects of financing. It does not directly specify that it is a SEP, but it does state that it is a FinTech and that it is regulated by the BCB. The organization focuses on the provision of services to Juridical Persons (mostly small enterprises) that need loans. It provides access to some financial reports but does not provide much in-depth information about used technologies.	Peer-to-Peer Lending	11
Bulla SEP S.A.	https://www.bullla.com.br/	**SEP institution.** This organization identifies itself as a SEP. It tries to provide a transparent view of how this type of organization works for both borrowers as well as creditors. Although it does not specify a customer segment, it is clear that it focuses on non-legal persons that require small amounts of loans. It also provides information regarding the creditors that invested in the company along with access to financial reports of the organization. Some technological aspects are also available but not with	Peer-to-Peer Lending	14

		in-depth information like the previously mentioned reports.		
QI SEP S.A.	https://qitech.com.br/	**Technology / Digital institution.** This institution does not provide direct access to a place where the SEP services are identified. It is related to the SCD organization named QI SCD S.A. However, on their website, there is no mention of the SEP institution. To this end, no documents were collected from this institution since the available data was already collected for the SCD institution.	n/a	0

SOURCE: The Author (2022).

To perform the analysis of the data collected from the SCDs and SEPs, another set of codes to map the mentions in the documents was also created. The created codes use the same description as the ones located in Table 9, with the difference that they had the number 2 added at their end. Figure 23 summarizes the codes created in the Atlas.ti software, along with the number of citations that each code had.

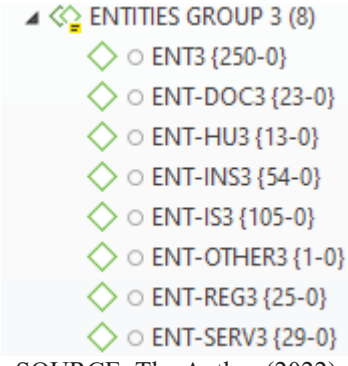
FIGURE 23 – NUMBER OF HIGHLIGHTED CITATIONS IN THE SCD AND SEP DOCUMENTS



SOURCE: The Author (2022).

Based on these codes, citations were analyzed to have entities identified. For the identification of entities, a new set of codes was also created. The codes created for the mapping of entities identified in this phase of analysis are also replicas of the ones contained in Table 5 with the addition of the number 3 at the end of each code. Figure 24 summarizes the codes and the number of highlighted citations of each code at the Atlas.ti software.

FIGURE 24 – CODES USED TO MAP THE ENTITIES IN THE SCD AND SEP DOCUMENTS



SOURCE: The Author (2022).

The use of a separate set of codes ensured that the previous documents did not affect the re-assemble of the network. A group to address the codes related to risk was also created to specifically map this aspect in the documents collected from SCD and SEP institutions. These codes are also replicas of the ones contained in Table 7, with the addition of the number 3 at the end of each code. Figure 25 summarizes the codes used to address risk aspects in the third set of documents, along with their number of citations.

FIGURE 25 –CODES USED TO MAP MENTIONS TO RISK IN THE SCD AND SEP DOCUMENTS

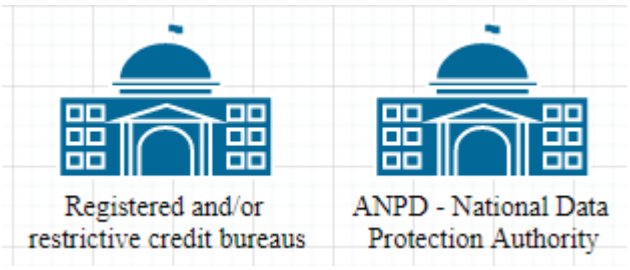
SOURCE: The Author (2022).

To maintain a standard procedure for the data analysis, a network for each code was also created at the software Atlas.ti to allow better visualization of the entities. After that, all entities were mapped in an excel table, having their names translated to English to facilitate the construction of the networks. The table containing the identified entities, along with their translation to the English language is located in Appendix G of the study.

After that, the software draw.io was used again to establish the relationships between the actors, following the same approach used for the analysis of BCB data (connections established from the key actor) (LATOUR, 2007).

For a better understanding, the actors identified in this scenario will be first introduced and the rationales used for selection will also be provided. Figure 26 summarizes the new institutional actors identified.

FIGURE 26 – NEW INSTITUTIONAL ACTORS IDENTIFIED IN THE SCD AND SEP DATA



SOURCE: The Author (2022).

Table 21 summarizes the types of risk associated and the rationales of each institutional actor. Again, these rationales represent a summary of their relationship with the aspects of risk, thus accounting for entities that were translating information (CALLON, 1991; LATOUR, 2007) and generating agency (GIDDENS, 1985; LATOUR, 2007).

TABLE 21 – DETAILS OF THE NEW INSTITUTIONAL ACTORS FROM SCD AND SEP DATA

ACTOR NAME	TYPE OF RISK ASSOCIATED	RATIONALITIES
Registered and/or restrictive credit bureaus	**Mitigation** Credit risks;	This actor represents bureaus used by SCD and SEP institutions to get information about their customers. Their role is to increase the amount of information available for these institutions so they can make better decisions regarding financial operations. To this end, this is an actor directly related to the mitigation of credit risks, assisting the SCD and SEP organizations to create a better credit rate for their customers.
ANPD - National Data Protection Authority	**Mitigation:** Cybersecurity risks; Data Risks;	This actor represents an institution that aims to work directly with the protection of data in Brazil. To this end, it is an institution that aims to regulate how private data is accessed and processed. This institution is directly related to Law no. 13.709/2018, also known as the General Data Protection Regulation. To this end, it has a direct relationship with the mitigation of cybersecurity and Data risks.

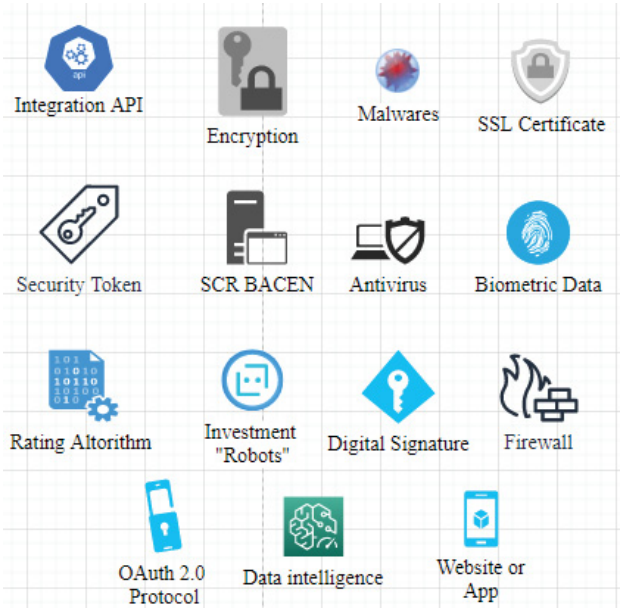
SOURCE: The Author (2022).

Table 21 demonstrates that all institutional actors identified are related to the mitigation of risks. The first actor accounts for a direct relationship to Credit Risk, while the second one accounts for Cybersecurity and Data Risks, thus being actors directly related to the regulatory aspects. To this end, their relationship with SCD and SEP organizations is also evident as these actors interfere with the day-to-day activities of these institutions, either by helping them to achieve a more accurate credit rate for their customers or by imposing regulations that the institutions need to meet when working with customer data that it has.

Apart from these two new actors identified, it is important to mention that other 7 actors were already identified in BCB and are also present in SCD and SEP data. These actors are the Central Bank of Brazil (BCB); the ABCD - Brazilian Association of Digital Credit; the Debtors; the Technology Service Providers; the Independent specialized audit firm; the Direct Credit Company; and the Peer-to-Peer Lending Company. As those were already identified and documented in Table 10, they were not added to Table 21.

Information system actors identified in the data from SCD and SEP are contained in Figure 27.

FIGURE 27 – NEW INFORMATION SYSTEM ACTORS IDENTIFIED IN THE SCD AND SEP DATA



SOURCE: the Author (2022).

Table 22 summarizes the rationales for these actors. Again, it is important to mention that other actors that were previously identified in the BCB data were also identified here. These actors are the Electronic platform; Peer-to-peer lending (P2P); Artificial intelligence; Advanced Analytics; Machine learning; Open banking; and Cloud Computing. To this end, they are already documented in Table 11.

Table 22 demonstrates that most of the identified actors' data have a relationship with the mitigation of risks. This might be related to the fact that SCD and SEP data tend to, at least to some level, “sell” what the organization is proposing. To this end, while BCB data emphasized the increase of risk that technologies could create, SCD and SEP data show the opposite, thus reflecting the organization's positions when it comes to the technologies. An increase in risks was only represented specifically by the actor Malware (due to its natural behavior and usage in IT), and by the actor Website or Apps (because the organizations usually aimed to stress their commitment to the security aspects of those).

The dual role (mitigation and increase of risks) identified in some actors is also present in Table 22. However, that was not identified at the same level as in the BCB data. Apart from that, the actors “API” and “Website or APP” are worth mentioning as they facilitate the

interface between the financial institutions and their customers, and also between the financial institutions and the IT service providers.

TABLE 22 – DETAILS OF THE NEW INFORMATION SYSTEM ACTORS FROM SCD AND SEP

ACTOR NAME	TYPE OF RISK ASSOCIATED	RATIONALITIES
Integration API	**Mitigation:** Operational risks; Cybersecurity risks;	APIs (Application Programming Interfaces) are a set of programming routines and patterns for accessing a software application or web-based platform. APIs have the advantage that they provide very easy integration for a system that is being offered. At the same time, the API provides an easy and powerful authentication method between the system, accounting for better security in the integration between two systems. In the analyzed data, APIs were provided by several SCD and SEP institutions, allowing their system to be easily integrated into the systems owned by their customers. With that, mitigation of Operational risks is possible (due to the simple and effective integration) and cybersecurity risks are also mitigated (due to the effective security with encrypted keys that are used by the APIs).
Websites or APPs	**Mitigaion / Increase:** Cybersecurity risks; Data risks;	This actor represents the applications and websites that the SCD and SEP organizations use to provide the service to their customers. To this end, these are two entities directly related to cybersecurity and data risks as these are usually doors for hackers to take advantage either of system vulnerabilities, or of the users themselves by using social engineering techniques to steal data and passwords. At the same time, however, applications and also websites could provide an increase in security if properly managed and designed, thus assisting to mitigate these risks, especially in the case of applications where more robust security methods can be implemented.
SCR BACEN	**Mitigation:** Credit risks;	The SCR (Credit Information System), is maintained by the BCB as a repository where financial institutions provide data every month. With this system, the BCB can verify financial operations that demonstrate a high risk. Thus, this is an actor directly related to the mitigation of Credit Risks.
Biometric Data	**Mitigation:** Cybersecurity risks; Data risks;	This actor is also related to the mitigation of Cybersecurity and Data risks. This type of data can allow systems to more effectively protect the customer data by requesting biometrics (such as fingerprints, face recognition, and also iris recognition).

Encryption	**Mitigation:** Operational risks; Data risks; Cybersecurity risks;	This is one of the main actors related to the mitigation of risks. Encryption is not a new concept and it has been a long ally of information systems. Considering the criticality of information that SCDs and SEP organizations work with, strong encryption keys are needed to prevent attacks from hackers and thus minimize system unavailability and data leaks. In the analyzed data. Encryption algorithms related to the ES512 version are very often identified as an example of encryption technology used.
Security Token	**Mitigation:** Data risks; Cybersecurity risks;	This actor also has a direct relationship with the mitigation of risks. Security tokens are often used by financial institutions to secure the transactions performed by their customers. It grants the second level of authentication that is kept in possession of the customer, with a value that is updated over time. Thus, even if someone manages to intercept the value provided by the customer, a new value will be generated in a small amount of time, thus making the previous value that was compromised invalid.
Rating Altorithm	**Mitigation / Increase:** Credit risks;	This is an actor that has a twofold definition based on the data analyzed. Most of the data consider rating algorithms as something focused on the mitigation of risk, thus assisting SCD and SEP organizations to better evaluate the credit rate of their customers. A small amount of data however points to the fact that the algorithm might not be very effective in performing this evaluation, thus rendering issues that might not be seen by the organizations and thus increasing the credit risk.
Antivirus protection software	**Mitigation:** Data risks; Cybersecurity risks; Operational risks;	An antivirus is a software that just like encryption has been a long ally of information systems in the fight against hackers and cyber-attackers. To this end, it displays a major role in the prevention of attacks on the SCD snd SEP systems. This software can prevent operational issues that might arise due to the unavailability of systems. At the same time, the importance of antivirus solutions for the customers of SCD and SEP organizations is also emphasized by these institutions. Since electronic platforms can be an access point for hackers in case an antivirus solution is not present, several SCD and SEP organizations emphasized the importance of antivirus usage in the machine of their customers, with some of them also stating this as an obligatory item to prevent data and cybersecurity risks.

Malware	**Increase:** Data risk; Cybersecurity risk; Operational risk;	Malware is an actor directly related to the increase in data, cybersecurity, and also operational risks. It is an actor that is long known in the information system world due to the potential that it has to cause hazards in information systems, either by turning them unavailable or by allowing hackers to get in and steal customer or other sensitive data. To this end, the data analyzed emphasized the technologies used to prevent malware to get in and cause a hazard to information systems that the organization has.
OAuth 2.0 protocol	**Mitigation:** Cybersecurity risks; Data risks; Operational risks;	This is another actor directly related to the mitigation of risks. OAuth 2.0 is the industry-standard protocol for authorization requests. To this end, several SCD and SEP institutions explicitly mentioned the fact that this technology was used to grant more security to the system. As it is directly related to the protection of the SCD and SEP systems, the mitigation of cybersecurity, data, and also operations risks are related to what this actor aims to achieve.
Data Intelligence	**Mitigation / Increase:** Credit risks;	This actor displays a role that is directly related to other actors already identified in the BCB data, such as Cognitive Computing and Machine Learning. It could be said that data intelligence is a sort of foundation to have these other services implemented. To this end, they are usually seen from the perspective of risk mitigation, especially due to the potential patterns that are identified in the, which allow the organizations to more properly elaborate credit rates for their customers. However, incorrect analysis of data could serve as the base for wrong credit models to be created, thus also increasing credit risks.
Firewall	**Mitigation** Cybersecurity risks; Data risks; Operational risks;	A firewall is another technology very used in the information system world. This actor aims to filter internet traffic that is either send or received by a system to where it is connected to. To this end, it has the main function of filtering undesired connections and requests to the system. In the case of an invasion, they can also be used to prevent data to be sent outside of this system. To this end, it has a direct relationship to cybersecurity and data risks, and also with operational risks as it can also prevent outages in the system due to hackers or cyber-attackers.
Digital Signature	**Mitigation** Cybersecurity risks; Data risks;	The digital signature is a technology used by various institutions to increase the security of their customer's data. Some SCD and SEP institutions mentioned the use of this technology to grant more validity to the customer data, especially since these institutions operate only online. To this end, this actor displays a direct relationship with the mitigation of cybersecurity and data risks.

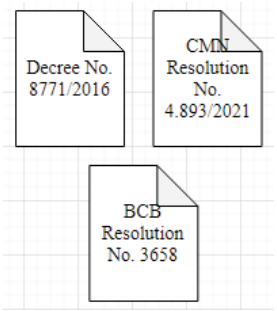
Investment "Robots"	**Mitigation / Increase:** Credit risks;	This actor, just like other ones identified in the BCB data such as Artificial Intelligence and Cognitive Computing, displays a dual role in thems of risk. From one side, the data states that investment robots are expected to be able to provide better investment options for customers of SCD and SEP organizations, which would thus minimize the credit risk as they would be able to invest in more accurate options based on their profile. However, an investment robot is a novel concept that still lacks a clear definition of how it will operate. To this end, it also displays concerns regarding the increase of credit risk as the investments suggested might not be very accurate and thus display the opposite scenario of what is expected.
SSL certificate	**Mitigation** Cybersecurity risks; Data risks; Operational risks;	SSL (Security-Socket Layer) certificate is also another technology very used in the information system world. This technology display a direct relationship with the mitigation of data, cybersecurity, and operational risks. This certificate is what allows the SCD and SEP organization websites to move from HTTP to HTTPS (thus allowing encryption to take place on the information that passes through their website). To this end, it displays a major role in the mitigation of risks.

SOURCE: The Author (2022).

It is important to point a few actors were already identified in the BCB. These actors are the Electronic platform; Peer-to-peer lending (P2P); Artificial intelligence; Advanced Analytics; Machine learning; Open banking; and Cloud Computing. As those were already identified in Table 11, they were not added to Table 22.

New regulatory actors were also identified in the data collected from SCD and SEP institutions. Figure 28 summarizes the regulatory actors identified in the data.

FIGURE 28 – NEW REGULATORY ACTORS IDENTIFIED IN THE SCD AND SEP DATA



SOURCE: The Author (2022).

The rationales of these actors are contained in Table 23. Furthermore, three other actors that were already present in the BCB data were also identified again. These actors are

the General Data Protection Regulation (GDPR); Resolution No. 4656/2018; and BCB Resolution No. 4658. As those are already described in Table 12 they were not added to Table 23.

TABLE 23 – DETAILS OF THE NEW REGULATORY ACTORS FROM SCD AND SEP DATA

ACTOR NAME	TYPE OF RISK ASSOCIATED	RATIONALITIES
BCB Resolution No. 3658	**Mitigation:** Credit risks;	This actor is directly related to the SCR BACEN, which is the Credit Information System maintained by the BCB to allow historical data of credit operations. As that system aims to assist with the identification of high-risk operations, this resolution is also directly related to the aspects of mitigation of Credit risk that the SCR aims to achieve.
CMN Resolution No. 4.893/2021	**Mitigation:** Operational risks; Cybersecurity risks; Data risks;	This actor is related to the regulation of the cyber security policy and the requirements for contracting data processing, storage, and cloud computing services. This resolution should be observed by institutions authorized to operate by the Central Bank of Brazil. To this end, it displays a direct relationship with the mitigation of Cybersecurity and data risks (regulating the requirements that are needed for the institutions that will use these services). At the same time, this actor is also related to the mitigation of operational risks, as the services and technologies regulated by this actor could cause outages in the systems if not properly managed.
Decree No. 8.771/2016	**Mitigation:** Operational risks; Cybersecurity risks; Data risks;	This actor is related to the discrimination of data packets on the internet and traffic degradation, also indicating procedures for the custody and protection of data by connection providers and applications, measured points of transparency in the request for registration data by the public administration, and the establishments of parameters for inspection and investigation of infringements. To this end, it also displays a direct relationship with the mitigation of Operational, credit, and data risks, as it can assist organizations to define standards to follow to have these types of risks mitigated.

SOURCE: The Author (2022).

As can be seen in Table 23, all three new actors identified are related to the mitigation of risks, which was expected from regulatory actors. This same pattern of mitigation of data was identified in the documental actors, which are contained in Figure 29.

FIGURE 29 – NEW DOCUMENTAL ACTORS IDENTIFIED IN THE SCD AND SEP DATA

SOURCE: The Author (2022).

The rationales for the documental actors are contained in Table 24. It can be noted that mitigation of the three types of risk is addressed by the documents. However, there was no standard among the identified documents. For the Privacy policy for example, while some institutions focus on how the technologies used could prevent undesirable situations to take place and thus generate risk, other institutions focus on how their action plan was effective to resolve the problems as quickly as possible, thus minimizing the impact caused by undesirable situations. The same is valid for other documental entities identified, except for the Independent Audit Report, which followed the same pattern in all institutions.

TABLE 24 – DETAILS OF THE NEW DOCUMENTAL ACTORS FROM SCD AND SEP DATA

ACTOR NAME	TYPE OF RISK ASSOCIATED	RATIONALITIES
Privacy Policy	**Mitigation:** Data risks; Cybersecurity risks;	This actor displays a direct relationship with customer data and cybersecurity risks. Privacy policies were identified in almost all SCD and SEP institutions that had services being offered on their websites. These policies always focused on explaining to the customer how their data was handled by institutions, which data was collected, and also why it was collected. The goal was to provide a transparent approach so the customer could know his rights about the data being collected, which reflects on the mitigation of data and cybersecurity risks.

Bureau score provided by a partner	**Mitigation:** Credit risks;	This actor was identified in some SCD and SEP organizations, sometimes also being referred into other documents, such as the credit risk documents or financial reports. The goal of this actor is to provide information related to the score that a customer has in the credit bureaus. This would assist the organizations in better defining the credit rate for that customer, assisting with the mitigation of credit risks.
Financial Reports	**Mitigation:** Credit risks;	The financial report is an actor identified in a few SCD and SEP organizations. Although the BCB regulation states that these institutions should provide access to financial reports, not all of them made them available on their website. The ones that did, however, had a report focusing on the information related to the mitigation of credit risk, also providing relevant data for customers and investors that want to either use or invest money in the organization.
Action and Incident Response Plan	**Mitigation:** Data risks; Cybersecurity risks; Operational risks;	This actor was identified only in a few institutions. Where it was identified, some institutions had information related to this actor added to the cybersecurity policy. While others created a dedicated report to address the action plan for incidents. These plans usually provided details about the used technologies, partners (third party organizations) involved with these technologies, and also the expected actions of each organizational department in the case of a real incident. To this end, this is an item directly related to the mitigation of data, cybersecurity, and also operational risks as cyber incidents would directly affect these three aspects of risk.
Credit Risk Management Policy	**Mitigation:** Credit risks;	This is an actor directly related to the mitigation of credit risk. It was identified in some SCD organizations, where policies to prevent credit risk are discussed and explained to their customers. These policies are usually sustained by some legislation that is also cited by the organizations to grant more validity to the policy itself.
Operational Risk Management Policy	**Mitigation:** Operational risks;	Similar to the previous actor, this one is related to the mitigation of Operational risks. It also cites legislation related to the mitigation of operational risks, usually explaining the methods in place by institutions to prevent this risk from taking place, and also detailing which actions are taken in case such risk arises.

Independent Audit Report	**Mitigation:** Credit risks; Operational risks;	This actor is a report provided by an independent audit organization. This type of report is required by the BCB and should be made available by the institutions based on BCB regulations. Nevertheless, it was not found in all organizations that had data collected. This report aimed to assess credit and also operational risks that the organizations might display and that might be "easily visible" by the organization itself. To this end, this actor displays a direct relationship with the mitigation of credit and operational risks, by providing an independent analysis of the organizational scenario regarding these two types of risk.
Rating reports	**Mitigation:** Credit risks;	This actor is the report used by the SCD and SEP institution to analyze the rating of its customers and thus make better decisions regarding how much credit could be offered to them. Some of these reports could be provided by the restrictive and credit bureaus or also by the credit models that the institution has. To this end, this is an actor related to the mitigation of credit risks.

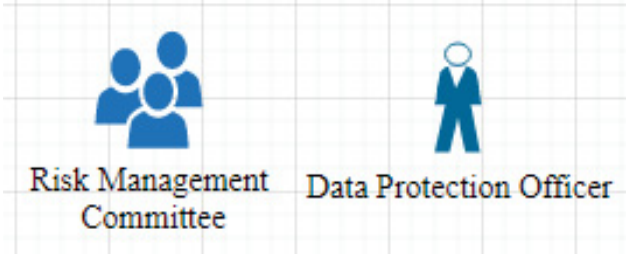
SOURCE: The Author (2022).

It is also important to point out that some institutions did not have any reports available on their website. Some which appear to have their website "under construction" and also some institutions where the SCD was "hidden" inside the bigger financial institutions are two examples of that scenario.

Apart from that, some actors contained in Table 24 were already identified in the BCB data (Table 13). Thus, they were not added to Table 24. These actors are the Cyber Security Policy, and the Credit Models.

Following the identification of documental actors, some novel human actors were also identified in the data collected from SCD and SEP institutions. These actors are contained in Figure 30.

FIGURE 30 – NEW HUMAN ACTORS IDENTIFIED IN THE SCD AND SEP DATA



SOURCE: The Author (2022).

The rationales for these actors are contained in Table 25, where we can see a clear relationship between the actors with the mitigation of risks. These two actors, despite their importance for the mitigation of risks, were not identified in all institutions. The institutions that mentioned these two actors were usually organizations where various risk reports were made available. In such cases, these two actors were cited as contact points for customers to clarify questions related to risks, privacy, and also data aspects.

TABLE 25 – DETAILS OF THE NEW HUMAN ACTORS FROM SCD AND SEP DATA

ACTOR NAME	TYPE OF RISK ASSOCIATED	RATIONALITIES
Risk Management Committee	**Mitigation** Credit risks; Data risks; Cybersecurity risks; Operational risks;	This actor represents the committee responsible for the establishment of policies related to risk management in the organizations. It was identified in some institutions in their reports related to cybersecurity risks or operational risks. Usually, these committees are composed of people from different organizational sectors, with different experiences and knowledge to complement one another in the construction of risk mitigation initiatives. To this end, it has a relationship with all risk aspects that the organization aims to mitigate.
Data Protection Officer	**Mitigation** Data risks;	This actor represents a person dedicated to the mitigation of the data risks that might arise in the organization. It displays a direct relationship with the General Data Protection Regulation law, thus displaying a major role in the mitigation of data risks in SCD and SEP organizations. The actor is also related to the privacy policy that these organizations possess, usually being cited in these policies as a contact for their customers to clarify questions related to data or privacy aspects.

SOURCE: The Author (2022).

It is also important to point out that apart from these two novel actors, two actors already present in the BCB data were also identified in SCD and SPE data. These two actors are the Debtor and the Creditor, the two of which are the central customers of SCD and SEP institutions. As those actors were already described in Table 14 they were not added to Table 25.

Last but not least, some novel service actors were also identified in the data. These actors are summarized in Figure 31.

FIGURE 31 – NEW SERVICE ACTORS IDENTIFIED IN THE SCD AND SEP DATA

SOURCE: The Author (2022).

Table 26 contains their rationales, where we can also see that provided services are perceived from the perspective of risk mitigation in the collected data from SCD and SEP institutions.

TABLE 26 – DETAILS OF THE NEW SERVICE ACTORS FROM SCD AND SEP DATA

ACTOR NAME	TYPE OF RISK ASSOCIATED	RATIONALITIES
BaaS – Bank as a Service	**Mitigation / Increase:** Credit risks; Operational risks;	This actor represents a novel concept that resembles what some institutions related to industry 4.0 already offer, which is the focus on the service provided (service-driven business models). To this end, this actor still lacks a clear definition of its relationship with the increase and mitigation of risks. Much of the data focuses on explaining the advantages of having a service design implemented, such as mitigation of operational risks and credit risks since the service can be more easily provided. However, the opposite is still valid as service platforms could be more susceptible to cyberattacks and the extent of how the service will be offered can be questionable. To this end, this actor is related to both mitigations as well as the increase of credit and operational risks.
Technological support	**Mitigation:** Operational risks;	This actor represents the support provided by IT service providers, thus being directly related to the mitigation of operational risks that could arise due to outages in the information systems maintained by the SCD and SEP institutions.

3rd party risk and anti-fraud solutions	**Mitigation** Data risks; Cybersecurity risks; Operational risks; Credit risks;	This is an actor that represents solutions used by the institutions to prevent fraud to take place within systems used and transactions performed by the institutions. It was identified in some institutions as being a key item to preventing money laundering to take place. To this end, it displays a direct relationship with data, cybersecurity, operational, and also credit risks, accounting for solutions that cover areas where all these types of risk could be accounted for.
Sandbox environment	**Mitigation:** Operational risks; Cybersecurity risks; Data risks;	This actor represents a form of service offered by some institutions to allow their customers to test the solutions and services being offered. To this end, it has a main role in allowing mitigation of data and cybersecurity risks by providing integration tests between the SCD/SEP systems and their customers. To this end, apart from the mitigation of cybersecurity and data risks, it also assists with the mitigation of operational risks by allowing the customers to test and identify the best integration option to prevent system outages.

SOURCE: The Author (2022).

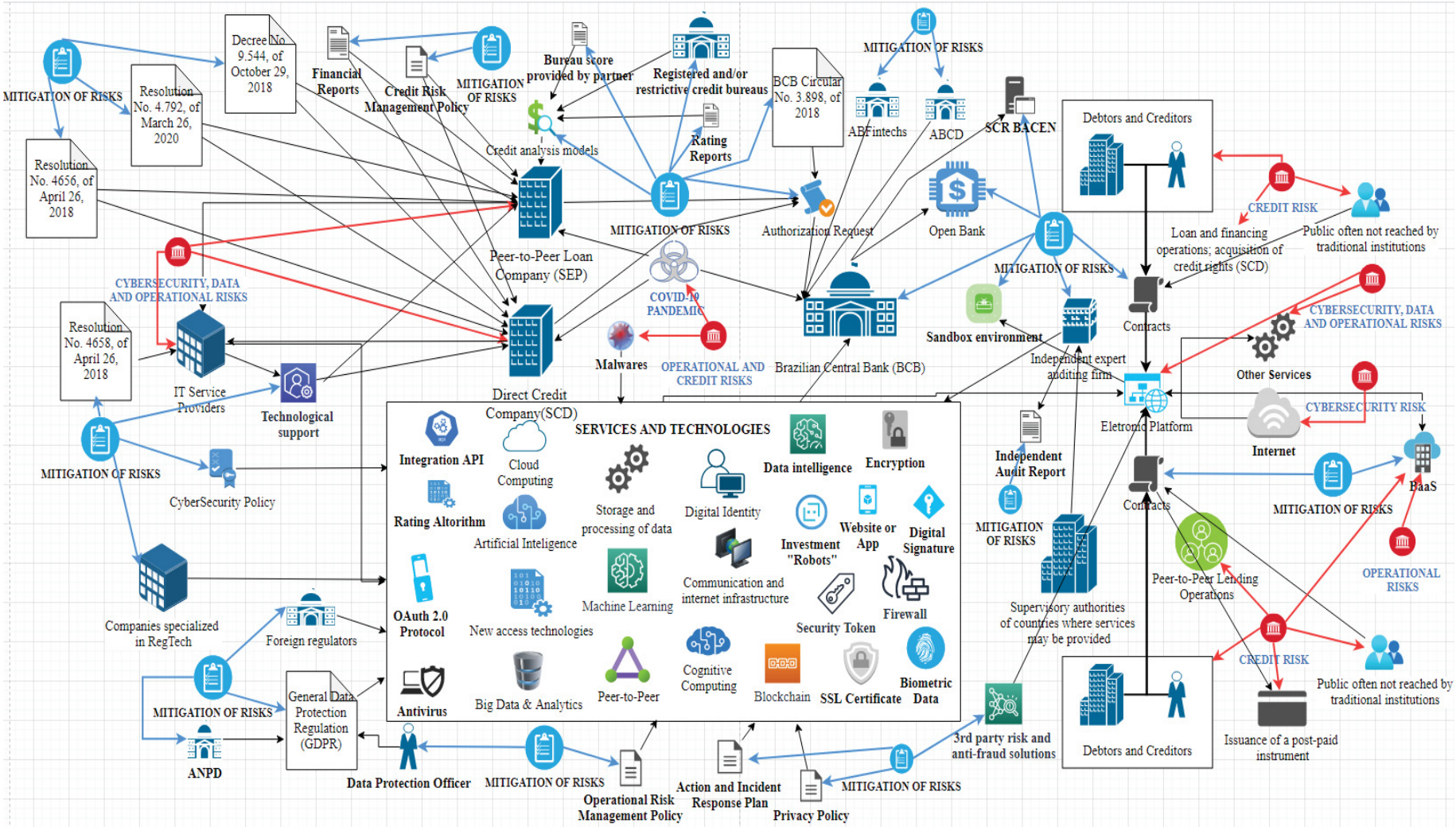
Apart from the new actors contained in Table 26, some other actors that were already identified in the BCB data are also present here. These actors are the Cloud services; Data processing; Data storage; and Network infrastructure. These actors have their rationales displayed in Table 15 and were thus not added to Table 26.

Last but not least, it is important to point out that no new actors were identified under the category “other actors” for the SCD and SEP data. Only the actor Covid-19 Pandemic, which was already identified in the BCB data, and had its rationales described in Table 16 was identified again.

Considering the newly identified actors, their rationales described in the previous tables, and the risks aspects that were mapped based on the collected data, the software draw.io was used one more time to have the actor-network theory updated. Figure 32 summarizes the final version of the actor-network, with all the actors identified from the collected data.

To accommodate the actors in the figure, some changes were made to the design of the figure. Abbreviations were maintained whenever possible, and all the new actors identified in SCD and SEP data were added in bold. The same strategy used to accommodate the information system actors in Figure 20 was used as well. Thus, it can be seen that the novel information system actors were also added to the block named Services and Technologies, which continues to encompass all services and technologies that are provided by the actor IT Service Providers.

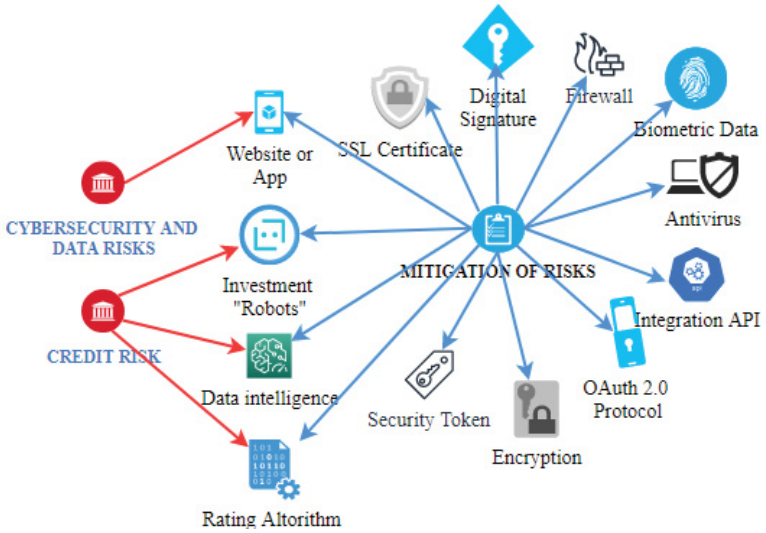
FIGURE 32 – ACTOR-NETWORK WITH THE ASPECTS OF RISK



SOURCE: The Author (2022).

Figure 33 summarizes the relationship of the novel Services and Technology actors identified in SCD and SEP data with the aspects of risk.

FIGURE 33 – RISKS OF THE INFORMATION SYSTEM ACTORS FROM SCD AND SEP



SOURCE: The Author (2022).

The previous two figures demonstrate several new actors added to the network. However, one more time the most expressive changes remain with the Services and Technologies actors that were identified.

However, different from the actors identified in the BCB data, where a dual relationship among them was more evident, SCD and SEP data emphasized more the aspects of risk mitigation of these technologies, giving little emphasis to the increase of risks that could occur due to technology usage.

Apart from that, several documental actors were added to the diagram. These actors were identified in most of the analyzed SCD and SEP institutions, in an effort of these organizations to provide a more transparent service and access to data.

Some novel service actors were also added to the scenario, and most of them are also accounting for the mitigation of risk. Furthermore, two new institutions were also added to the scenario, also being related to the mitigation of risk.

A great contrast with the data collected from the BCB can be observed in terms of risk, with BCB demonstrating concerns and thus encompassing the aspects related to an increase of risk, and SCD and SEP institutions focusing more on the aspects related to the mitigation of risk.

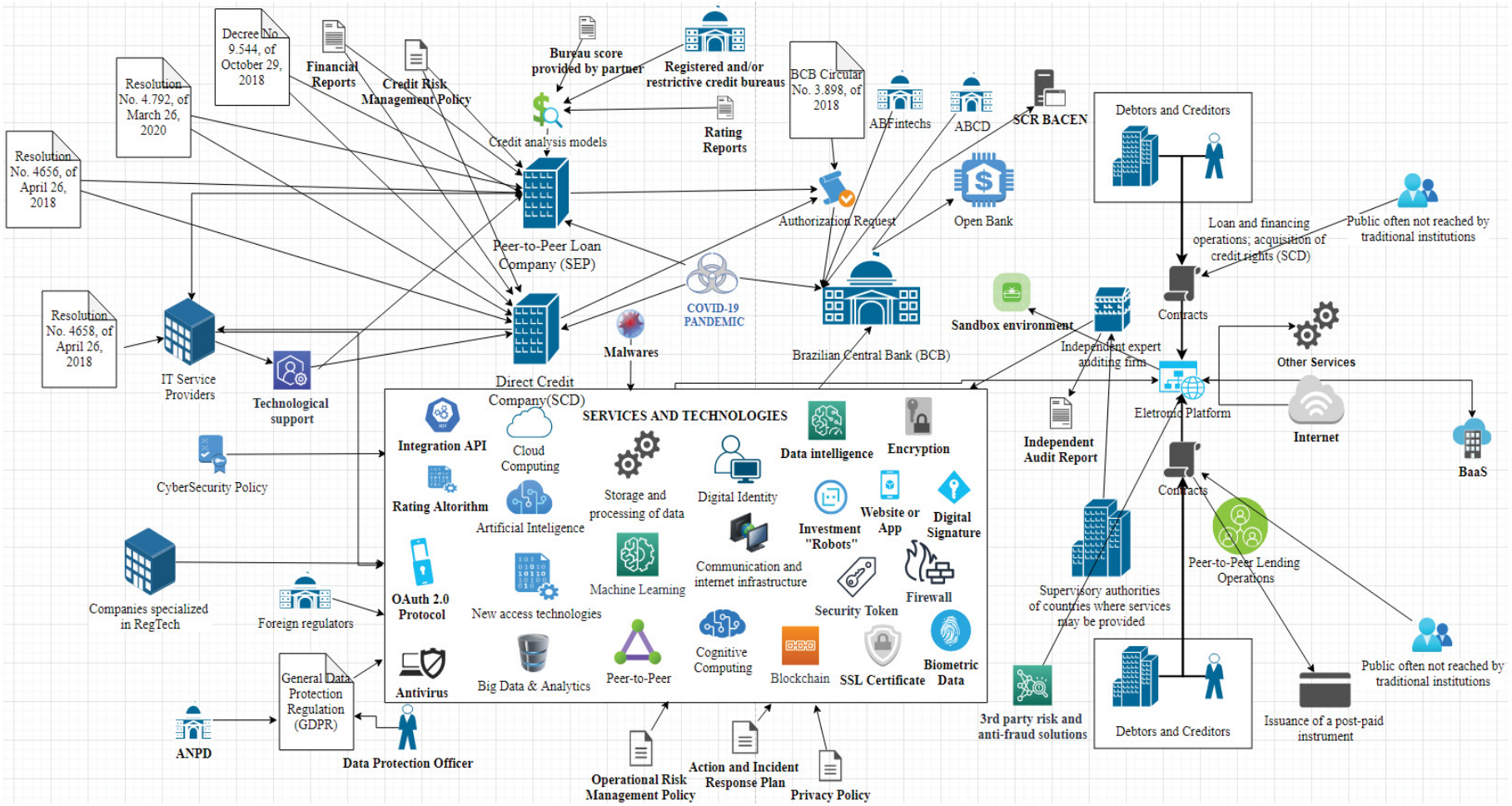
Apart from that, several actors that were identified in the BCB were one more time found in the data collected from SCD and SEP organizations, including the COVID-19 Pandemic, which several SCD and SEP organizations mentioned in their reports.

Aiming to provide better visualization of the actors that compose the actor-network, Figure 34 summarizes all the actors contained in Figure 32 with the aspects of risk removed from the view.

This second movement identifies a new actor configuration that sustains the third movement analysis to be performed. Thus, up to this point, the research has relied on the description of the collected data. While the first movement allowed us to understand “where are the structural effects being produced” (LATOUR, 2007), thus demonstrating upon the analysis of Resolutions No. 4656 and No. 4658 the place where interaction was taking place. The second movement allowed us to explore “how is the local itself is being generated” (LATOUR, 2007), thus demonstrating with the data collected from the identified key actors (BCB and the SCD and SEP organizations), how the network expanded and how different entities were translating information and thus becoming actors.

These two movements have explored so far the first four research questions of the study. Now, the research aims to focus on the third movement, called “connecting sites”.

FIGURE 34 – DIAGRAM OF THE ACTOR-NETWORK WITHOUT RISK ASPECTS



SOURCE: The Author (2022).

Aiming to facilitate the understanding of this section, Table 27 summarizes the relationship between tables and figures contained in section 4 with the software used to perform the analysis (Atlas.ti and Draw.IO). The table points to the main tables and figures constructed with the application of ANT on the respective software.

TABLE 27 – TABLES AND FIGURES RELATIONSHIP WITH ANT AND TOOLS USED

TOOLS USED	DESCRIPTION	RELATED TABLES AND FIGURES
Atlas.TI	Software used for the document analysis and the identification of entities, and risk aspects, and later to allow the identification of actors based on the ANT approach.	Tables 4-7; Tables 9-26; Figures 10-12; Figures 23-25;
Draw.IO	Sofware used for the visualization of the actor-network, thus allowing actors and their relationships to be mapped.	Figures 8-9; Figures 13-22; Figures 26-34;

SOURCE: The Author (2022).

As can be noted, the software Atlas.TI was more related to the construction of tables, thus being more used in the analysis of data, and the software draw.IO was more related to the construction of figures, thus allowing the visualization of data.

Following the conclusion of this second movement, the third movement is addressed in the sequence, where the focus is now shifted to the understanding of the actor-network that was created, aiming to answer the remaining research questions.

4.3. THE THIRD MOVE: CONNECTING SITES

This section develops the final movement of ANT. The focus is now shifted to the understanding of the actor-network. It tries to answer two final research questions: (e) How is the actor-network on the relationship between the BCB and the Credit FinTechs characterized?; and (f) What is the impact of the relationship between the BCB and the Credit FinTechs on the aspects of risk, considering the relationship between technology and regulation?

Thus, while the first two movements are considered the base that allows the actor-network to be identified, the third movement explores the results based on the network analysis (LATOUR, 2007), aiming to move sites to the background and highlight the connections established. Discussions are related to types of connections that allow transport of agencies over longer distances (CAMPBELL-VERDUYN; GOGUEN; PORTER, 2019), what is the nature of agencies transported in the connections (WARD, 2018), and also what can be found among these connections (SHIM; SHIN, 2016).

1.1.3. Problematization, Interessement, Enrollment, and Mobilization.

To explore the remaining research questions of the study, we will draw on the four-stage model proposed by Callon (1986), which is contained in Figure 1. This model was described in more detail in the theoretical background section, along with a discussion of some studies that have used it.

The first stage of the model is called Problematization. This is where a set of actors state that they have a solution for a problem (DOOLIN; LOWE, 2002). To understand this stage, we can draw again on Section 4.1, which aimed to explore the events that lead to the flourishing of the Credit FinTechs in Brazil, later resulting in the creation of SCD and SEP organizations.

Section 4.1 described how the credit scenario in the country created a favorable scenario for Credit FinTechs, with the provision of cheaper services or by addressing customer segments not yet addressed by incumbent institutions. Small and medium enterprises are an example of this customer segment (CONTRERAS PINOCHET *et al.*, 2019).

The increase in the number of Credit FinTechs caught the attention of authorities because it created a problem: the increase in risk that could lead to systemic issues if not properly managed. To this end, the regulatory institution BCB decided that these institutions had to be regulated.

During this phase, the BCB establishes an *Obligatory passage point* for the regulation of these institutions, which in the case of this study is the Authorization request. This authorization request was classified as a documental actor, and with this passage point, the BCB guaranteed that it would render itself indispensable for the network.

The second stage, called Interessement, is related to the negotiations performed with the other actors, thus allowing the focal actor to be accepted on the network (SARKER; SARKER; SIDOROVA, 2006). To gain the commitment of actors in the network, the BCB performed a series of actions that would render the regulation not to be seen as something "imposed". The public consultation that was performed (BANCO CENTRAL DO BRASIL, 2017a, 2017c), is an example, where the public that would be affected by the resolution could provide their feedback on an initial version of the regulation. Apart from that, resolution No. 4656 did not require Credit FinTechs to have authorization issued to continue doing business. The resolution allowed Credit FinTechs to continue working as intermediaries if they preferred, without being SCD or SEP institutions (BANCO CENTRAL DO BRASIL, 2019). To this end, the whole idea of the resolution and the actions taken by the BCB was to demonstrate how it

could be more beneficial for Credit FinTechs to operate under BCB regulation. This approach performed by the BCB allowed it to focus on enrolling itself in the network, enhancing the trust of the network, and thus moving to the next stage.

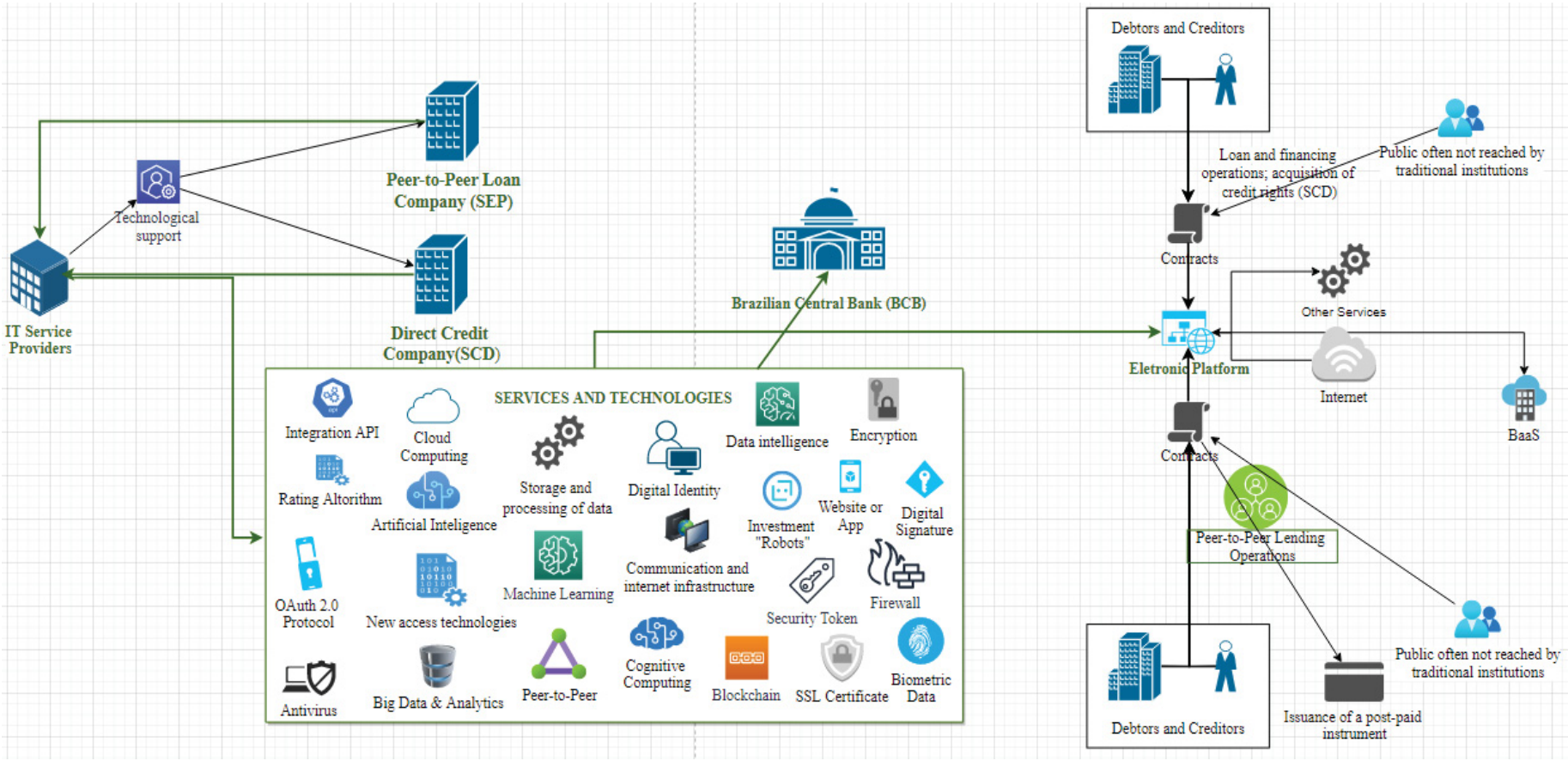
The third stage, called enrollment, is where the proposed action is carried out, resulting in the focal actor being accepted by the others (FOX, 2000). The release of Resolution No. 4656 with the modifications suggested by the public consultation validates this point, putting into practice the regulation for Credit FinTechs. It allowed them to be classified as SCD or SEP institutions. The authorization requests required by the BCB resulted in the Credit FinTechs "accepting" the BCB as being a key actor in the network.

The fourth stage, named Mobilization, allows other actors to be identified, and thus the network expansion (CONTESSE *et al.*, 2021). The goal in this stage is to prevent the dissolution of the network (FOX, 2000). The expansion of the network can be identified by the involvement of actors such as the ABFintechs and the Brazilian Association of Digital Credit, two actors that provide the FinTechs more representativeness. Another two actors that provide a good example are the ones named Resolution No. 4.792 and Resolution No. 4.812. These actors represent additional regulations that were created to further assist SCD and SEP development.

These four movements demonstrate how the BCB, the SCD, and SEP actors are, as expected, central to the network. However, a further look into section 4, and more precisely in the actor-networks that were identified (Figure 20 and Figure 32) demonstrates that the Services and Technologies used (information system actors) are also at the center of the network, with most of them being technologies provided by IT service providers.

The network was further analyzed and the connections emerging from the information system actors were put into evidence. This is demonstrated in Figure 35, where it is noted that the connection between the SCD and SEP with the actor BCB and also with the actor Electronic Platform is possible due to the information system actors. The lines in green demonstrate the connections that, if removed from the network, will very likely cause it to be dissolved since the provided services will no longer be available for the end customers of the network.

FIGURE 35 – NETWORK WITH THE MAIN CONNECTIONS OF INFORMATION SYSTEM ACTORS



SOURCE: The Author (2022).

Figure 35 demonstrates that Information system actors, and, more specifically, the Services and Technologies provided by IT service providers are also central actors of the network assisting to hold the network together. The fourth stage (mobilization), means that these actors assist to consolidate the activities that were suggested in previous stages (FOX, 2000).

The relationship of these actors with aspects of risk was previously addressed in the diagrams of Figure 20 and Figure 32, and also in the figures specifically related to the Services and Technologies actors (Figure 21 and Figure 33). These figures demonstrate that several actors still do not have a clear definition of their relationship with risks, accounting for both mitigation and increase of risks. However, an even more critical concern needs to be posed, which is the lack of focus on the consumers of these technologies. Luther (2020), has displayed concerns regarding this lack of emphasis on the users of technology, where, according to the author, consumer protection, which is an important topic, tends to be neglected.

Most of the information system actors characterized by an ambiguous relationship with risks are directly related to consumer data used by the SCDs and SEP technologies. Machine Learning, Artificial intelligence, Cognitive Computing, Data Intelligence, Rating Algorithms, and also Investment Robots, are actors that deal directly with consumer data to study their "patterns" and generate more feasible products, services, and solutions for them.

A relevant concern is that regulation might not address artificial intelligence and the use of consumer data. Although there are policies such as Privacy Policy, Action, Incident response plan, Operational Risk Management policy, and also the General Data Protection Regulation, the final users of SCD and SEP may have their privacy compromised due to artificial intelligence technology.

Nevertheless, the General data protection regulation is still a good example of how more emphasis starts to be given to consumer data. And this resolution does contain dispositions that can be adapted to the artificial intelligence scenario. To this end, this actor displays an important role in the scenario as it allows consumers to have more knowledge about how their data is handled and stored by the organizations. According to the OECD (2013), the General Data Protection Regulation aims to address aspects related to (1) Quality and Collection of data; (2) Security safeguards of data; (3) Use of data; (4) Access to data; and also (5) Accountability of data. These areas can very easily cover topics related to artificial intelligence usage, as this is a concept that relies on large amounts of data to allow machine learning to take place. To this end, GDPR is an important regulatory actor in the network, accounting for a direct relationship

with the services and technology actors that were identified. However, we also need to consider it is very difficult to follow all hidden use of personal information.

This analysis leads us to understand the question raised by Latour (2007) regarding who is “pulling the strings of social interaction”. The actor-network identified in this study, along with Figure 35, demonstrates that when it comes to services provided by SCD and SEP, technology is what pulls the strings. More specifically, the information system actors that were identified are the ones accounting for this. This occurs because technology is not just what allows the connections, but also what maintained the system “working”. If technology actors contained in Figure 35 are removed from the network, it will very likely result in its dissolution.

Furthermore, these actors enabled the connections to be made and also the services of SCD and SEP to be provided. By looking at the essence of the services provided by SCD and SEP institutions, it can be noted that information system actors are permeating the scenario, being what pulls the strings that allow the provision of services to work, and what allows the connections to be established. In other words, technology actors are dictating the pace of the game.

Attention should be given to these actors since we arrive at a scenario where risks might arise. However, this does not necessarily mean that every risk needs to be regulated. Eventually, regulators might increase the regulation to improve their role in the system. In other words, if regulation diminishes the regulator would lose its importance to the network. To this end, the regulator might increase the regulation to maintain its importance on the system in its own interest.

This leads to an important aspect which is the types of risk that need to receive more attention from the regulation perspective. By looking at the network contained in Figure 32, and also on the aspects of risk related to the Services and Technologies group (Figure 21 and Figure 33), it can be noted that Credit Risk is still the one related to more actors, followed by Cybersecurity risks, Data risks, and last by Operational risks. Table 28 summarizes the number of actors related to each aspect of risk.

TABLE 28 – NUMBER OF ACTORS RELATED TO INCREASE OF RISK ASPECTS

TYPE OF RISK	NUMBER OF ACTORS RELATED
Credit Risk	18
Operational Risk	8
Cybersecurity Risk	11
Data Risk	10

SOURCE: The Author (2022).

The tables used for the description of the rationales of each actor (contained in section 4.2.2) also assist to map the relationship of the actors with the mitigation of risks. Table 29 summarizes the number of actors related to risk mitigation, where Credit risks still appear at first, being followed by Data risks, Cybersecurity risks, and later Operational risks.

TABLE 29 – NUMBER OF ACTORS RELATED TO MITIGATION OF RISKS

TYPE OF MITIGATION	NUMBER OF ACTORS RELATED
Credit Risk Mitigation	31
Operational Risk Mitigation	26
Cybersecurity Risk Mitigation	29
Data Risk Mitigation	30

SOURCE: The Author (2022).

Considering the previous two tables, it can be noted that there more actors are related to the mitigation of risk. This was very likely identified because a large portion of data was collected from the actors SCD and SEP, where a greater focus on mitigation aspects is provided.

This is an important point to be considered for the relationship between the BCB and the Credit FinTechs since as demonstrated in the previous tables, the greater focus is still on Credit Risks. The type of services provided by SCD and SEP contributes to that, but Technologies such as Machine Learning, Artificial Intelligence, Cognitive Computing, and Big Data & Analytics were also only identified in the collected data as being discussed from the point of view of Credit Risks (e.g. a credit score miscalculated by an artificial intelligence process).

However, these are technologies that directly affect aspects of data and cybersecurity risks (CAMPBELL-VERDUYN; GOGUEN; PORTER, 2017), a topic that needs more attention in the analyzed scenario, especially from the customer perspective.

This also results in a scenario where regulators will very likely need to rely on actors that could assist them in better addressing the regulation of cybersecurity and data risks. The actor ‘Companies specialized in RegTech’ is a very good example, being an organization that focuses specifically on understanding and assisting with the regulation of technology. Apart from that, the actors ABFintechs and also the Brazilian Association of Digital Credit (ABCD) are other important actors, as they allow Credit FinTechs to have more representativeness to the regulators. These last two actors were described in the data as being a sort of “proxy” that would allow different perspectives to be drawn together in the achievement of a better solution for the network.

To this end, an approach would be to allow the Companies specialized in RegTech to work together with these proxy institutions, as this can assist for leverage the development of novel regulations.

Furthermore, it is important to note that the mitigation of risk, relies on the connections established by the actors. This means that what was highlighted on the connections was put in evidence in the networks, resulting in the identification of the actors (LATOUR, 2007). For the understanding of the last research question of the study, this represents a scenario where we can explore their relationships to check which actors caused more impact on the relationship between BCB and the Credit FinTechs.

Figure 35 demonstrates that scenario as well, pointing out several information system actors that were highlighted in the network. Table 30 complements that analysis, summarizing the relationship of the actors contained in Figure 35 with the increase and/or mitigation of risks.

TABLE 30 – RISK RELATIONSHIP OF THE MAIN ACTORS CONTAINED IN FIGURE 35

ACTOR NAME	TYPE OF ACTOR	ASSOCIATED RELATION WITH RISK
Peer-to-Peer Loan Company (SEP)	INSTITUTIONAL	**Increase** of Data, Cybersecurity, and Operational risks.
Direct Credit Company (SCD)	INSTITUTIONAL	**Increase** of Data, Cybersecurity, and Operational risks.
IT service providers	INSTITUTIONAL	**Increase** of Data, Cybersecurity, and Operational risks.
Brazilian Central Bank	INSTITUTIONAL	**Mitigation** of Credit, Data, Cybersecurity, and Operational risks.
Electronic Platform	INFORMATION SYSTEM	**Increase** of Cybersecurity and Operational risks.
Integration API	INFORMATION SYSTEM	**Mitigation** of Operational and Cybersecurity risks.
Rating Algorithm	INFORMATION SYSTEM	**Mitigation** and **Increase** of Credit risks.
Oauth 2.0 protocol	INFORMATION SYSTEM	**Mitigation** of Cybersecurity, Data, and Operational risks.
Antivirus	INFORMATION SYSTEM	**Mitigation** of Cybersecurity, Data, and Operational risks.
Cloud Computing	INFORMATION SYSTEM	**Increase** of Cybersecurity and Data risks.
Artificial Intelligence	INFORMATION SYSTEM	**Mitigation** and **Increase** of Credit risks.
New Access Technologies	INFORMATION SYSTEM	**Mitigation** of Cybersecurity and Data risks.
Big Data & Analytics	INFORMATION SYSTEM	**Mitigation** and **Increase** of Credit risks.
Storage and Processing of Data	INFORMATION SYSTEM	**Increase** of Cybersecurity and Data risks.

Machine Learning	INFORMATION SYSTEM	**Mitigation** and **Increase** of Credit risks.
Peer-to-Peer	INFORMATION SYSTEM	**Mitigation** and **Increase** of Credit and Cybersecurity risks.
Digital Identify	INFORMATION SYSTEM	**Mitigation** of Cybersecurity and Operational risks.
Communication and internet infrastructure	INFORMATION SYSTEM	**Increase** of Cybersecurity, Data, and Operational risks.
Cognitive Computing	INFORMATION SYSTEM	**Mitigation** and **Increase** of Credit risks.
Data Intelligence	INFORMATION SYSTEM	**Mitigation** and **Increase** of Credit risks.
Investment "Robots"	INFORMATION SYSTEM	**Mitigation** and **Increase** of Credit risks.
Security Token	INFORMATION SYSTEM	**Mitigation** Data and Cybersecurity risks.
Blockchain	INFORMATION SYSTEM	**Mitigation** and **Increase** of Credit, Data, and Cybersecurity risks.
Encryption	INFORMATION SYSTEM	**Mitigation** of Operational, Data, and Cybersecurity risks.
Website of App	INFORMATION SYSTEM	**Mitigation** and **Increase** of Cybersecurity and Data risks.
SSL certificate	INFORMATION SYSTEM	**Mitigation** of Cybersecurity, Data, and Operational risks.
Digital signature	INFORMATION SYSTEM	**Mitigation** of Cybersecurity and Data risks.
Firewall	INFORMATION SYSTEM	**Mitigation** of Cybersecurity, Data, and Operational risks.
Biometric Data	INFORMATION SYSTEM	**Mitigation** of Cybersecurity and Data risks.

SOURCE: The Author (2022).

With the research demonstrating that several information system actors are accounting for both mitigation and increase of risk, this study sustains that these are the ones that should be the main focus of regulators at the first moment. Their ambiguous relationship with risk, if not properly managed can result in a situation that tends to be more critical for end-users (customers of SCD and SEP), as much of the data used by these technologies will come directly from them.

The relationship between the BCB and the Credit FinTechs is thus characterized by a scenario where more information system actors account for the connections than other types of actors. As a result, there is an urgent need for a better understanding of the role of these actors, especially the ones that still do not have a clear definition of their relationship with risk aspects. Here, it is also important to point out that current regulations can be adapted to address these novel technologies used in financial services. However, that can only be done with a better comprehension of such technologies first.

At the same time, it is important to mention that excessive regulation can very likely create a hindrance to the innovation developed by the SCD and SEP. If the BCB decides to regulate every small tie, that will draw the nature of agencies to focus on regulatory aspects, and at the end of the day, the SCD and SEP would've turned into another set of incumbent institutions.

At the current moment, it can be noted that the nature of agencies transported by the network is more related to the technologies that allowed the connections to be made. Between these connections, we find the regulatory entities and also the institutional entities related to regulation that at the moment provide support for the existence of the network and allow risk aspects to be addressed and mitigated.

The nature of agencies transported is discussed in the study of Ward (2018), while Campbell-Verduyn *et al*., (2019), discuss aspects related to what is found between the connections. These two aspects, according to the authors, are directly related to a third aspect which is the types of connection that allow the agency to be transported over longer distances (WARD, 2018). Based on the data collected and analyzed in this study, it could be argued that technology is what allows the agency to be transported over longer distances due to its integration capability. However, what if precisely the opposite that is taking place? What if technology is instead reducing the distance and creating more agency due to that?

Based on the analyzed data and according to the actor-network that was identified, the relationship between the BCB and the Credit FinTechs was not increased in terms of distance due to technology, but instead, it seems that it was reduced. The data demonstrates that technology pulled the actors together, and that ended up creating more agency due to the increase in the risk aspects. Considering that, this study sustains that two novel points need to be addressed by future ANT studies. First, a better understanding of why the distance reduction provided by technology ends up increasing the creation of agency instead of minimizing it. And second, a better understanding of how this distance reduction reflects on the aspects of the structure of the network. By exploring these two topics, ANT could give a new step into the comprehension of the technology role in the actor-networks, by addressing an aspect that up to now remained "hidden" in the network, which is the increase of agency that occurs due to the reduction of distance between actors.

Upon this discussion provided in the third movement, which was constructed based on the previous two movements of ANT, the next section will address the study conclusions, limitations, and also future research directions, also encompassing a discussion of the findings with the ANT literature that is present at the theoretical background section.

5. CONCLUSIONS, LIMITATIONS, AND FUTURE RESEARCH DIRECTIONS

The actor-network theory aims to highlight aspects that are usually sent to the background when analyzed with more traditional social approaches. ANT allows actors to be highlighted (LATOUR, 2007), which is done based on the five premises that this theory has (CALLON, 1984, 1991; STEEN; COOPMANS; WHYTE, 2006; LATOUR, 2007; CHRISTIAENS, 2016; PAPADOPOULOS; KANELLIS, 2011; SHIM; SHIN, 2016; BALASESCU; JAIN, 2018). This study discussed in the theoretical background aspects related to structure, agency, and institutions, to understand the aspects of ANT. This theoretical background was further discussed considering the aspects of risk that emerge from the provision of financial services by FinTechs (SCD and SEP institutions). From that discussion, a framework (Figure 3), was proposed, where the ANT premises are used to explore the services provided by Credit FinTechs, focusing specifically on the SCD and SEP institutions. This allowed entities and actors to be mapped, and agencies to be identified.

Based on the three movements of ANT (LATOUR, 2007), the identification of entities and actors was possible, later allowing the expansion of the network to include other actors as well. This resulted in findings from both theoretical and practical perspectives.

At the first movement, BCB was identified as a key actor of the network, along with the SCD and SEP institutions. This was done based on the initial documents selected for the analysis (Resolutions No. 4656 and No. 4658). The result was the first version of the actor-network (Figure 8), which contains the base network used for the expansions performed in the second move.

In the second move, data collected from the key actors (BCB, SCDs, and SEPs institutions) was analyzed to expand the network, based on the connections identified in the data, allowing novel actors and connections to emerge.

At this point, two expansions of the network took place. First, from the data collected from the BCB, which resulted in Figure 20. Later, the data collected from the SCD and SEP institutions were added to the network, which resulted in Figure 32.

As the data had to be collected directly from the SCD and SEP institutional websites, an analysis of the institutional profile was also performed (Table 19 and Table 20). This analysis does not aim to provide a formal classification of the institutions but to demonstrate the different approaches that the institutions used on their websites, which are reflected in different types and levels of data access.

Later, the third movement further analyzed the networks, demonstrating how technology became the central actor. Technology was then identified as what is pulling the strings of connection, drawing the actors closer to one another (instead of increasing their distance as previously described in the literature), and increasing the amount of agency that was present in the actor-network.

Along with the findings displayed in the third movement, it is important to point out that this study did not enter the realm of security diagrams. The actor-networks that were identified in Figure 20 and Figure 32, can serve as the base for managers, security analysts, and regulators that aim to develop security diagrams to specifically address security protocols and technologies. The actors highlighted in the networks are the ones changing the meaning of information and thus impacting the increase and mitigation of risks.

Considering that, the findings of this study can also be used as a framework for decision-making in terms of risk at the services provided by SCD and SEP institutions, which can assist not just with security diagrams, but also with governance models that need to be developed to address security aspects of the services provided.

Database diagrams also fall under the same situation as the governance and security diagrams. The present study does not enter the realm of database diagrams. Future studies may use identified networks and the mapped risks to account for database models that reflect better mitigation of risk aspects. This is an interesting avenue for future studies, as security, governance, and database diagrams created having the actor-networks identified here can better reflect the structure of the actors that are effectively acting on the network.

Another aspect focus on a specific set of technologies, such as Artificial intelligence and Cognitive Computing. These are technologies that directly manipulate user data to better offer financial services, and investment opportunities, and also to evaluate the credit rate of creditors and debtors. However, the creation of novel networks should be carefully evaluated since as described in the third movement, they may create hindrances for the Credit FinTechs, turning them into incumbent institutions. The scenario where the regulator creates novel regulation to maintain its “legitimacy” in the actor-network is an example. Considering that the BCB poses that FinTechs have emerged from the obsolesce and omission of traditional financial systems (CACIATORI JUNIOR; CHEROBIM, 2020), more regulation probably will reduce the new financial services benefits.

Another point to be mentioned is the actor Open Banking. This actor emerged from the data collected from the BCB actor, and despite having an important role according to the data collected from BCB, the data collected from SCD and SEP did not provide any further

mention of this actor. This occurs probably because Open Banking effectively starts to take place in February 2021 in Brazil, thus being quite new when compared to the time that the research was conducted. Thus, it would be interesting for future studies to explore the aspects related to Open Banking, and how this actor might impact the SCD and SEP institutions since this actor deals with initiatives that aim to address the integration of systems and information among financial institutions.

Since the analysis performed at the third movement allowed the identification of technological actors as being central for the network, where the actors ended up being closer to one another, a direct impact on the aspects of structure and agency are also present. The structure was perceived in the theoretical background as something rigid (STEEN; COOPMANS; WHYTE, 2006; WARD, 2018). However, ANT sees the struct as something 'held in place' (LATOUR, 1991), which resulted in agency emerging from actants that aim to maintain stability (LATOUR, 2007). Agency thus emerges not only from humans but also from non-human actants present in the network, which results in the findings of the study being directly related to the work of Latour (1988), where power is understood as something that is accumulated and maintained by actors, including technological actors (STEEN; COOPMANS; WHYTE, 2006). The actor-network contained in Figure 35 is a practical example of that, where technologies are at the center of the connection that allowed the services to be provided.

Considering the literature related to how ANT understands Power (FOX, 2000; SARKER; SARKER; SIDOROVA, 2006; SOARES *et al.*, 2021), this study sustains that technology is an active source of power that pulls the strings of social interaction at the network, drawing actors together and increasing the amount of agency created. This is an important aspect because since power is considered an active force (FOX, 2000), future studies that aim to map the same network could identify power being located somewhere else, such as with the regulatory institutions or other regulation actors that were identified.

Regulatory actors assuming the control of power and strings in the network is a possible outcome since more actions focussing to have risks mitigated might then result in a different network configuration with regulatory actors being at the center. To this end, a future mapping of the network could contain more regulatory actors with different relationships accounting for risk mitigation, thus moving the power to them and rendering them the responsible ones to "pull the strings". For future studies, it would also be interesting to investigate if that change of power would result in improvements or not for the system.

Considering the types of actors identified, this study is also aligned with the reviewed literature, where several non-human objects are identified as actors in the network (BAEK;

LEE, 2021; CONTESSE *et al.*, 2021; FERRATTI; SACOMANO NETO; CANDIDO, 2021; SOARES *et al.*, 2021). These several non-human actors are also related to the human actors that were identified, which renders the structure as something held in place by their actions and their interaction (STEEN; COOPMANS; WHYTE, 2006).

Ward (2018) explores this relationship between humans and non-human actors to discuss the material agency, where legal, economic, political, and also technological agencies are considered. The actor-networks that were created in this study, are an example of these types of agencies, where technological and legal agencies are easily identified in the network due to the actions of their respective actants. Figure 35 is an example, where the connections related to information system actors (technological agencies) are highlighted. The regulatory actors contained in Figure 20 and Figure 32 are also an example, accounting for the legal and regulatory agencies.

Political and economic agencies are also present, especially due to the nature of the services provided by SCD and SEP institutions and the involvement of institutional actors in the scenario. The relationship between the BCB, the SCD, and the SEP with other actors such as the ABFintechs and the Brazilian Association of Digital Credit are examples of political and economic agencies in the network.

This opens a scenario for future studies, which is the impact that these two types of agencies have on the services provided by SCD and SEP. By looking at the punctualization diagrams that were drawn (Appendix B), it can be noted that the BCB is directly related to other institutions that provide influence on the political and economic scenario of the country. To this end, applying the ANT approach to explore the actions taken by these institutions can result in interesting findings for the better comprehension of political and economic agencies, something that this study has as a limitation since the nature of actors that were mapped resulted in technological and legal agencies to be more highlighted in the networks. That limitation occurs because the aspects of risk were used as the proxy variable for the identification of agency and actors. In other words, the data collected and analyzed resulted in more risk being accounted for technological and legal aspects than for economic and political aspects.

It is also important to point out that the identified aspects of agency demonstrate that the study avoided falling under the anthropocentric approaches (FERRATTI; SACOMANO NETO; CANDIDO, 2021), where human actors are given more emphasis than technological ones. This is aligned with the concept of generalized symmetry that is discussed by Callon (1984), where the analysis should account for both humans as well as non-human actors.

The generalized symmetry can be validated by understanding how the “agency” is intrinsic to the actors (LATOUR, 2007), where if an actor is removed from the network, the agency that he was creating disappears. As pointed out by Ahmadi and Soga (2022), this occurs because an actor is not complete without the network that he is part of. To this end, the connections between the actors are what ANT highlights, and in this study, technological connections were the ones allowing the network to take place.

This study, of course, is not free of limitations. First, the analysis of the collected data is always subjected to the researcher's cognitive schema. However, the adoption of a protocol for the study aimed to minimize that, and also provide more general rules on the understanding of how entities and actors were mapped and analyzed.

Second, the actor-network that was created in this study is specifically related to the relationship between the BCB with the SCD and SEP institutions, which renders the findings specifically for that scenario. Furthermore, data were collected only from secondary sources (being the website of the institutions). This approach, however, was selected to allow the strings of connection to be followed from the same level of access in all sources of data, also allowing the analysis to be conducted from the same point of view (the data available at the institution's websites). However, that study did not use primary data in the analysis. This data could lead to findings where the strings of connection were not properly followed due to bias provided by the interviewees. However, as these are considered valuable sources of information, it would be interesting for future studies to also consider primary data when (re)analyzing this network. A comparison of networks emerging from primary and secondary data would also be interesting as this could lead to findings demonstrating different perspectives and positions of the organization in the network, especially if the interviewees carry a different perspective than the one that the organization has on its institutional sources of data.

The analysis of secondary data collected emphasized the technological actors of the scenario, and the third movement demonstrated that apart from technology being at the center of connections, it also placed the actors closer to one another, which resulted in the increase of the agency in the network.

From the ANT theoretical point of view, this study draws attention to an important aspect which is the reduction of distances between the actors. As stated by Latour (2007), one of the things that ANT aims to understand in the third movement is “Which types of conduits allow the agency to be transported for long distances, and why are they so efficient on the formation of the social?” What this study states, is that more emphasis needs to be provided on the effectiveness of some conduits to get the actors close to one another, thus resulting in

impacts for Agency and structure that need to ve further explored in future studies, an aspect that remained “hidden” in the ANT studies so far.

Upon that, this study concluded the third movement with two main research streams for future studies. First, explore why the distance reduction provided by technology resulted in more agency instead of minimizing it. And second, understand how this reduction in the distance reflects on the aspects of the structure of the network. These two topics can further assist the understanding of the relationship between the actors, also allowing better policies to be created based on the agencies between the actors, or demonstrating that the regulatory actors are increasing the regulation to maintain their position as key actors in the network, which can lead to an overwhelming amount of regulation that could lead the SCD and SEP institutions to be turned into incumbent FinTechs, an organization that aims to behave like a FinTech institution, but can only work on the pace of an incumbent institution due to excess of regulation.

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Financial Support:
"This study was financed in part by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior - Brasil (CAPES) - Finance Code 001"

APPENDIX A – IDENTIFICATION OF ENTITIES ON RESOLUTIONS NO. 4656 AND NO. 4658 USING THE SOFTWARE ATLAS.TI

FIGURE A – INSTITUTIONAL ENTITIES

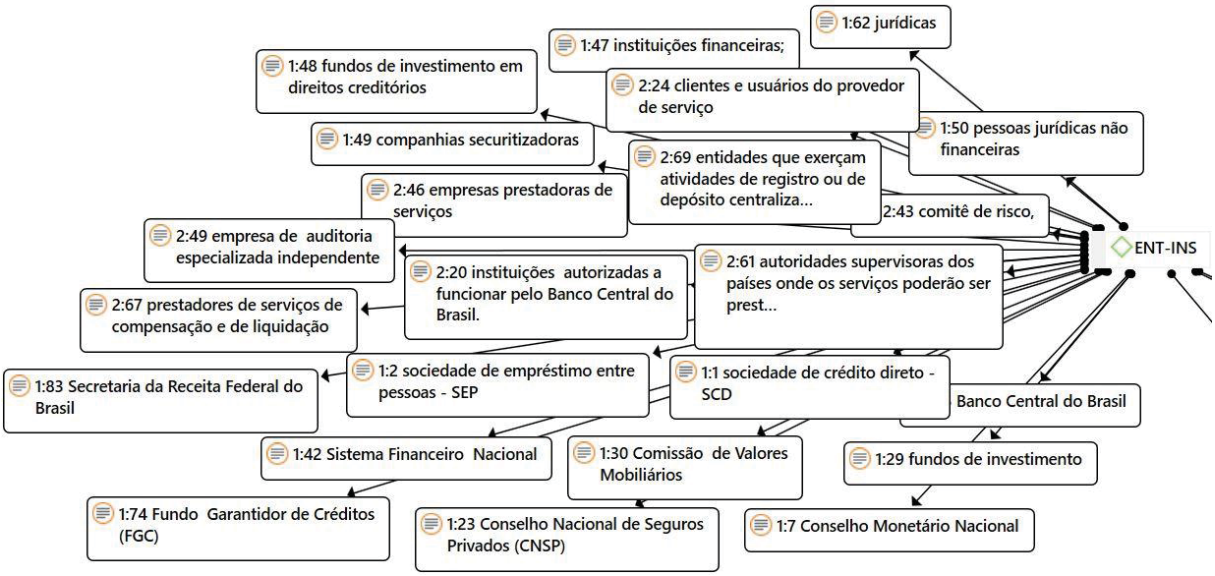


FIGURE B – INFORMATION SYSTEM ENTITIES

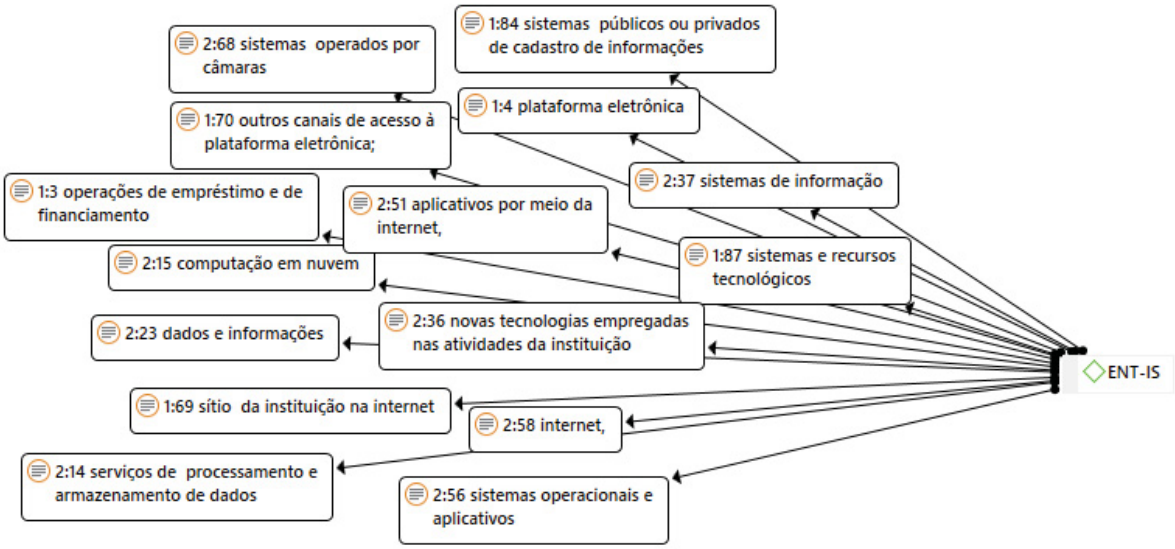


FIGURE C– REGULATION ENTITIES

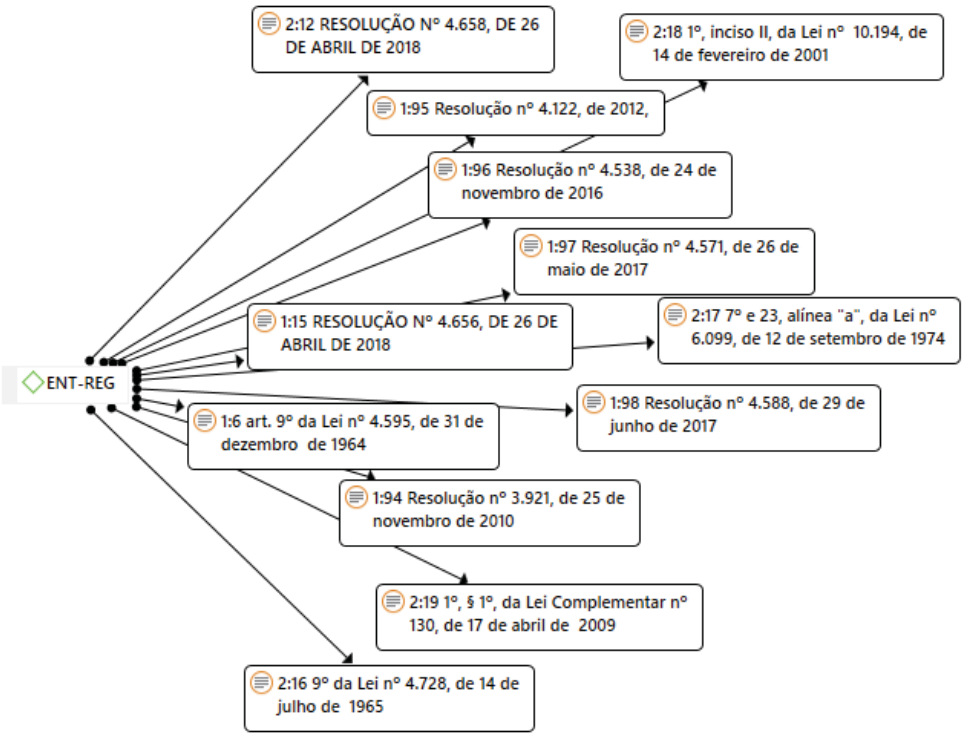


FIGURE D – DOCUMENTAL ENTITIES

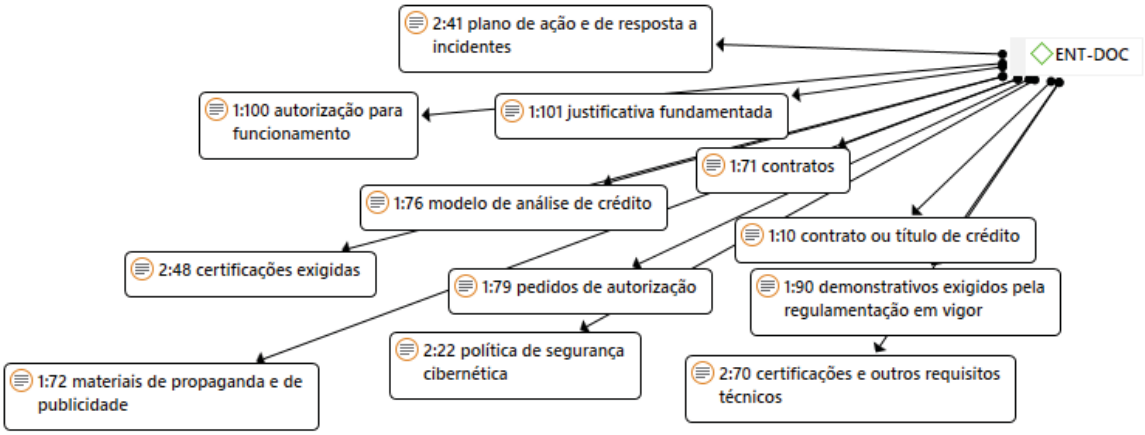


FIGURE E – HUMAN ENTITIES

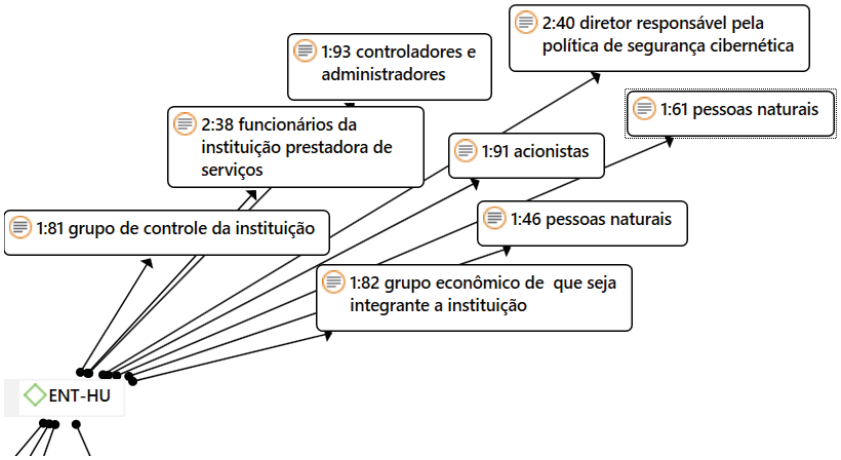


FIGURE F – HUMAN AND INSTITUTIONAL ENTITIES

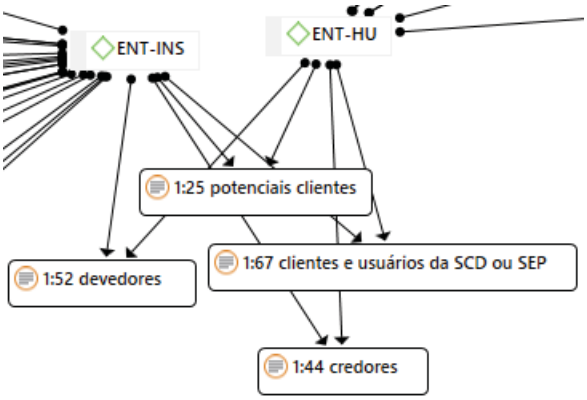
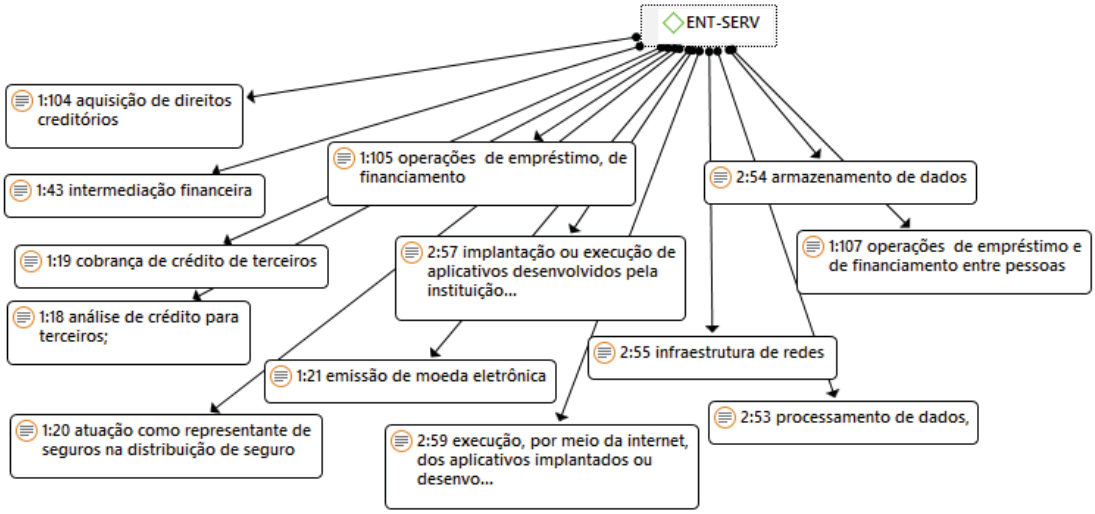


FIGURE H - SERVICE ENTITIES



APPENDIX B – PUNCTUALIZATION PERFORMED FOR THE ACTORS OF FIGURE 8 – ACTORS IDENTIFICATION AND RELATED RISKS

FIGURE A - PUNCTUALIZATION DIAGRAM FOR THE ACTORS 'SCD' AND 'SEP'

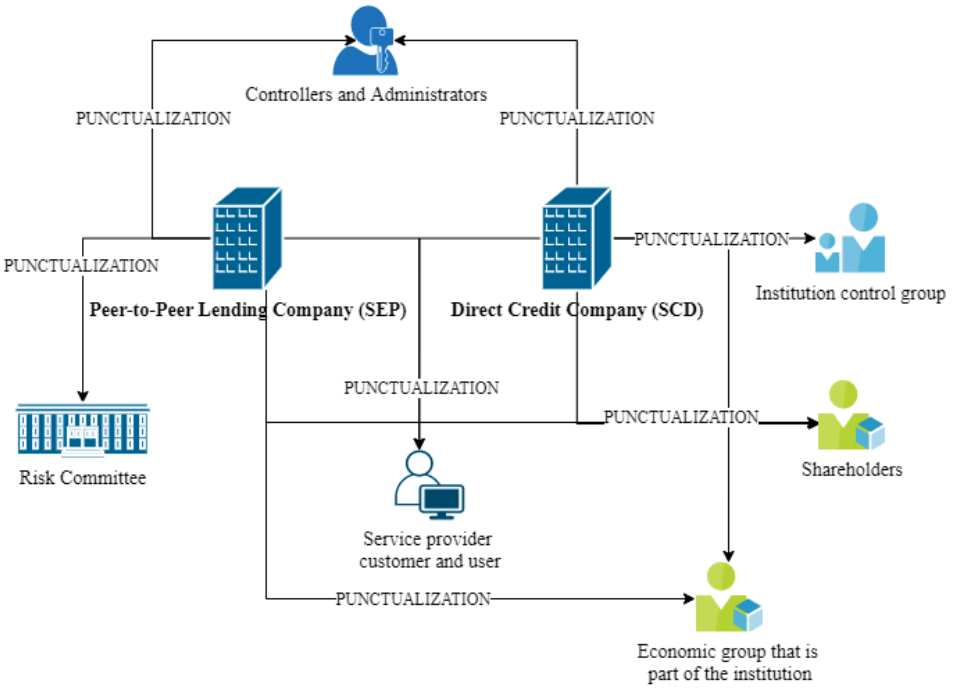


FIGURE B – PUNCTUALIZATION DIAGRAM FOR THE ACTOR 'BCB'

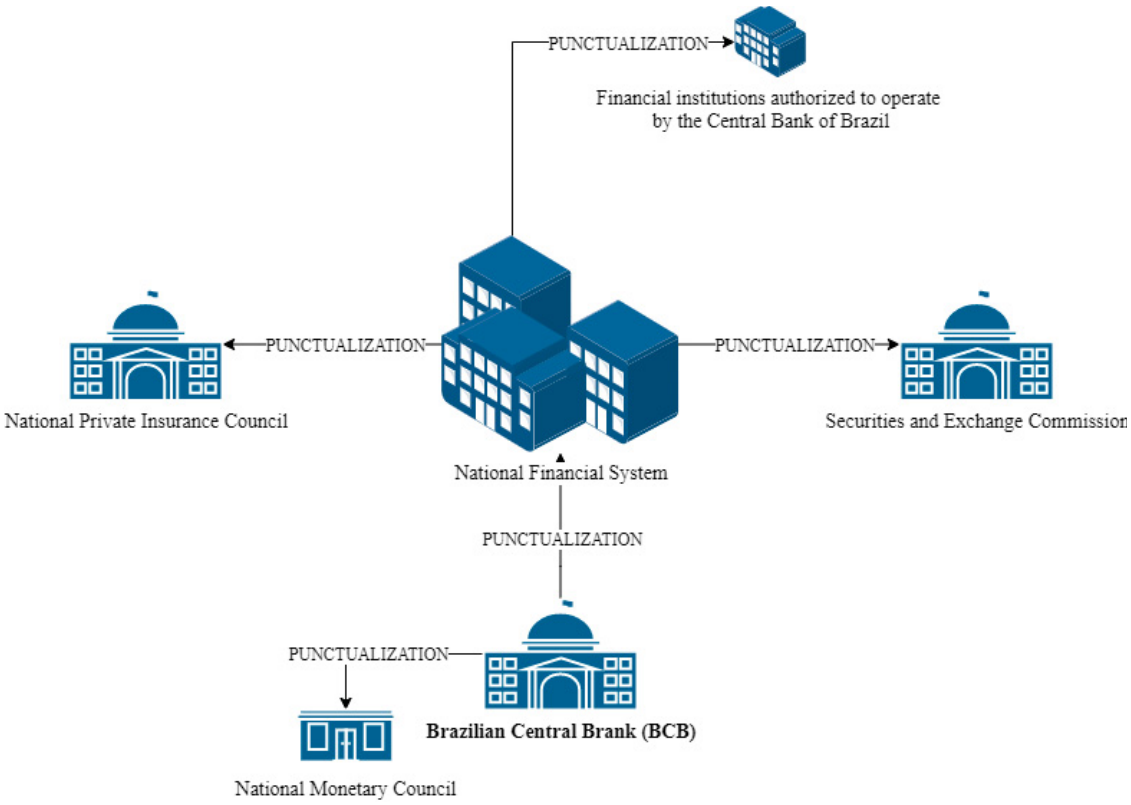


FIGURE C - PUNCTUALIZATION DIAGRAM FOR THE ACTOR ‘IT SERVICE PROVIDERS’

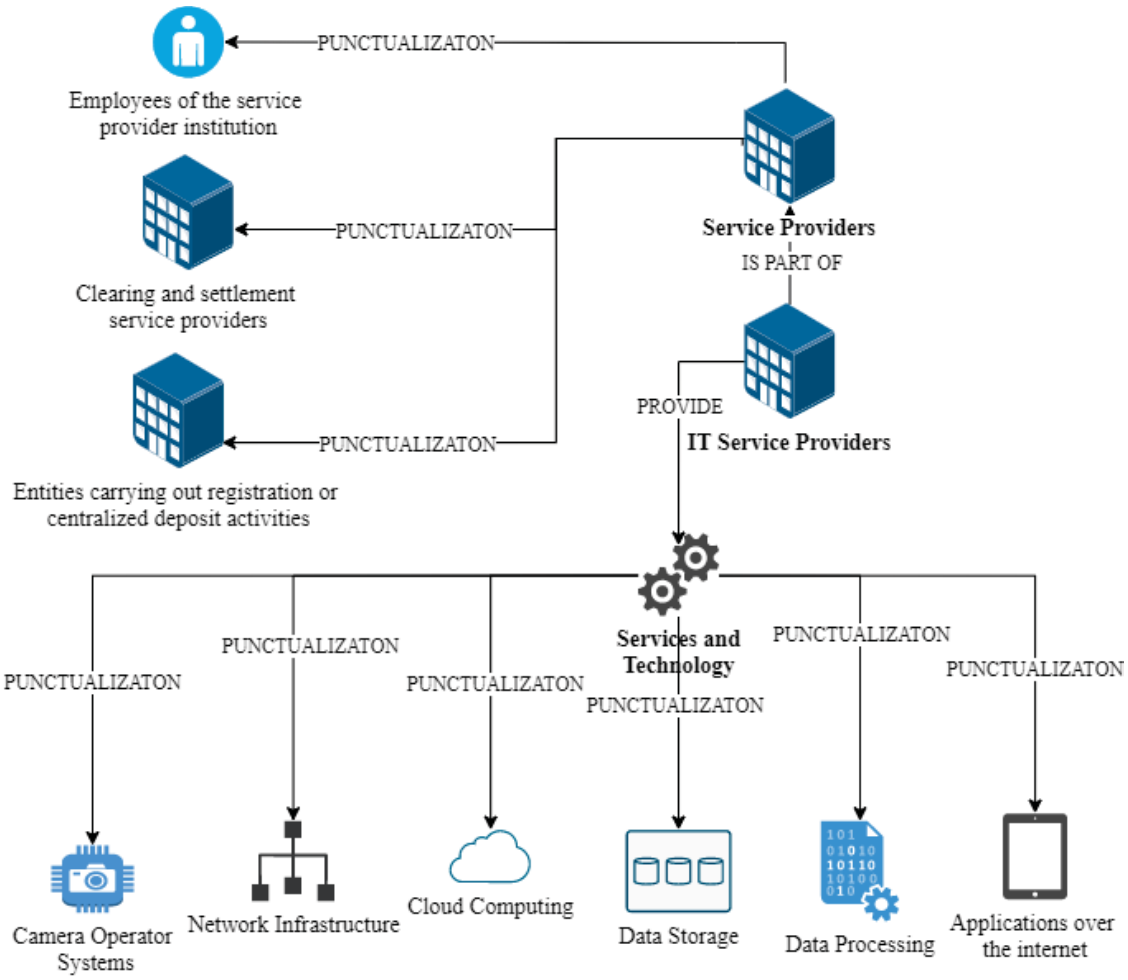


FIGURE D - PUNCTUALIZATION DIAGRAM FOR THE ACTOR ‘IT ELECTRONIC PLATFORM’

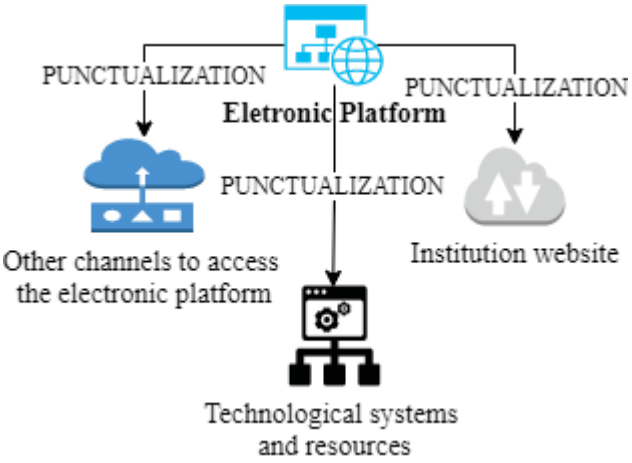


FIGURE E - PUNCTUALIZATION DIAGRAM FOR THE ACTOR OTHER SERVICES

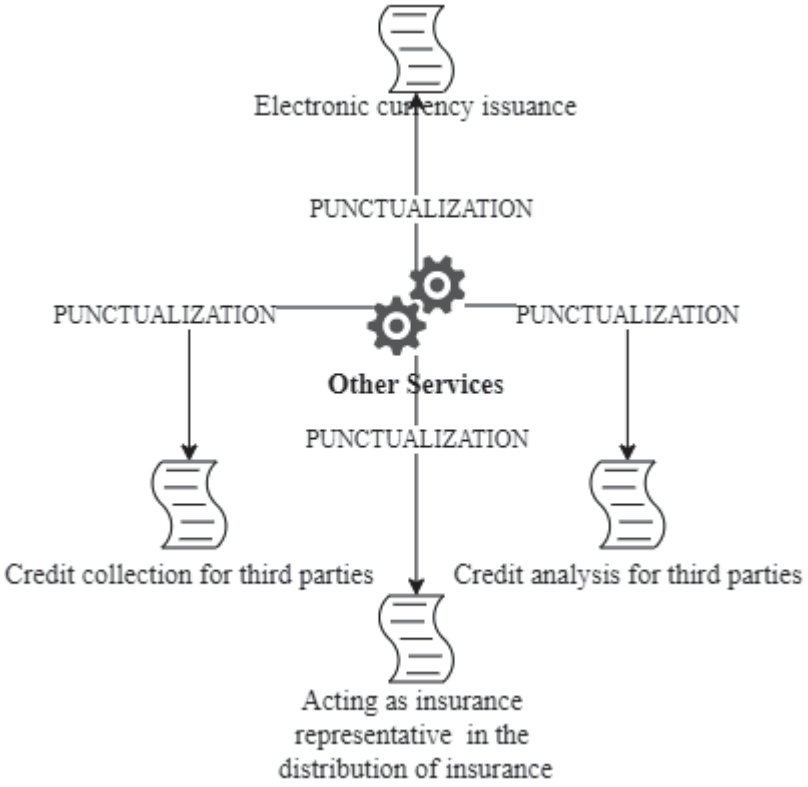


FIGURE F - PUNCTUALIZATION DIAGRAM FOR THE ACTOR DEBTORS AND CREDITORS

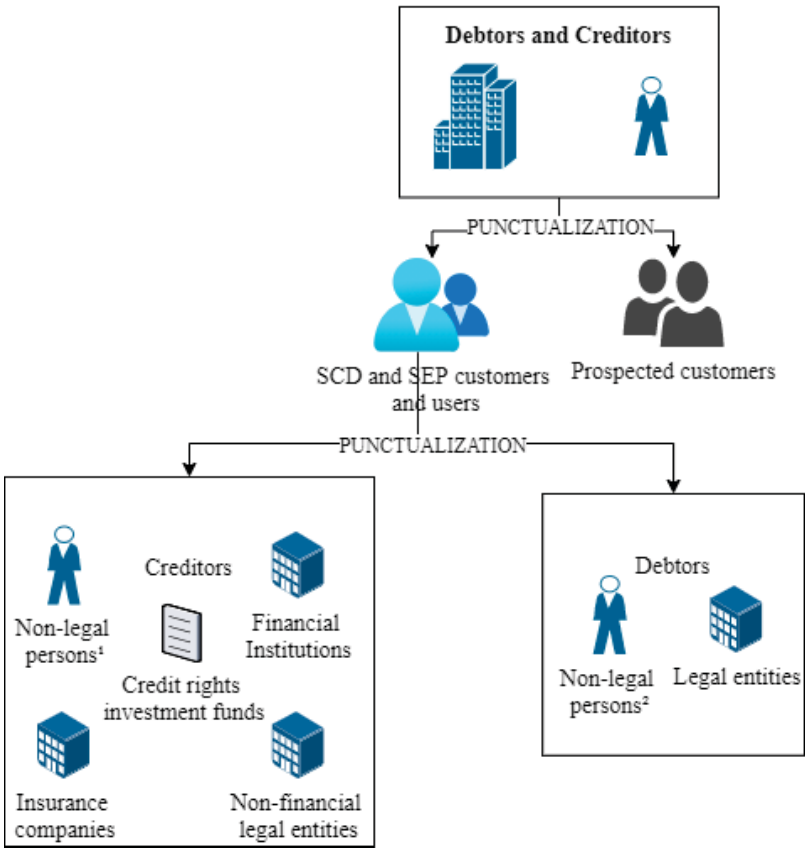


FIGURE G - PUNCTUALIZATION DIAGRAM FOR THE ACTOR CYBERSECURITY POLICY

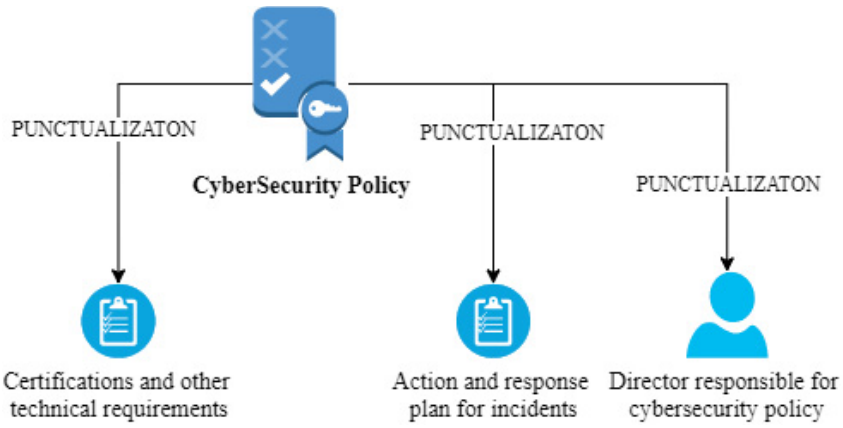
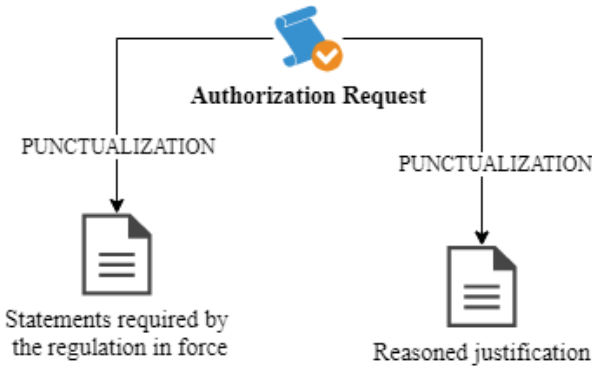


FIGURE H - PUNCTUALIZATION DIAGRAM FOR THE ACTOR AUTHORIZATION REQUEST



APPENDIX C – DETAILS OF THE DOCUMENTS COLLECTED FROM THE TAB TEXTS, DOCUMENTS, AND PRESENTATIONS OF THE BRAZILIAN CENTRAL BANK INSTITUTIONAL WEBSITE

Document Name	Year	Month	Author (Speaker)	Position in BCB	Docuemnt Address technological aspects	Docuemnt Address FinTechs	Document Adress Credit FinTechs (SCD and SEP)	Additional information
Boletim Regional Recife	2018	April	Tulio Maciel	Head of Economic Department	No	No	No	
Redução do Spread Bancário	2018	April	Ilan Goldfajn	Governor	No	No	No	
O Banco Central e o Cenário Econômico Atual	2018	April	Ilan Goldfajn	Governor	No	No	No	
Laboratório de Inovações Financeiras e Tecnológicas (LIFT)	2018	May	Carolina de Assis Barros	Director	Yes	No	No	
Discurso de abertura da 5ª Semana de Educação Financeira 2018	2018	May	Ilan Goldfajn	Governor	Yes	Yes	Yes	
Lançamento do Laboratório de Inovações Financeiras e Tecnológicas (LIFT)	2018	May	Ilan Goldfajn	Governor	Yes	Yes	No	
Discurso de Lançamento da Plataforma de Adesão aos Planos Econômicos	2018	May	Ilan Goldfajn	Governor	No	No	No	
Discurso de abertura da Semana ENEF 2018	2018	May	Mauricio Moura	Director	No	No	No	
Modernização do Crédito no Brasil	2018	May	Reinaldo Le Grazie	Director	No	Yes	Yes	
Apontamentos do Presidente Ilan Goldfajn	2018	May	Ilan Goldfajn	Director	No	No	No	
XX Seminário Anual de Metas para a Inflação Discurso de Abertura	2018	May	Ilan Goldfajn	Director	No	No	No	
Discurso de encerramento do diretor de Política Econômica, Carlos Viana no XX Seminário de Metas para Inflanção.	2018	May	Carlos Viana	Director	No	No	No	
Apontamentos do Presidente do Banco Central do Brasil, Ilan Goldfajn.	2018	June	Ilan Goldfajn	President	No	No	No	

Apontamentos do Presidente do Banco Central do Brasil, Ilan Goldfajn, para os eventos:	2018	June	Ilan Goldfajn	President	No	No	No	
Discurso de abertura do Presidente do Banco Central do Brasil, Ilan Goldfajn, no "International Seminar on Digital Innovations in Financial Markets"	2018	June	Ilan Goldfajn	President	No	Yes	Yes	
Primeiros efeitos da Lei nº 13.506, de 2017, nos processos administrativos do Banco Central	2018	June	Cristiano Cozer	Attorney	No	No	No	
Apontamentos do presidente do Banco Central, Ilan Goldfajn	2018	June	Ilan Goldfajn	Governor	No	No	No	
Presidente do BC participa de painel no BIS	2018	June	Ilan Goldfajn	Governor	No	No	No	
Relatório de Economia Bancária	2018	June	Carlos Viana	Director	No	No	No	
Perspectivas para a inflação - Relatório Trimestral de Inflação	2018	June	Carlos Viana	Director	No	No	No	
Cenário Econômico Brasileiro	2018	June	Reinaldo Le Grazie	Director	No	No	No	
Estadão FinançasMais Broadcast	2018	July	Reinaldo Le Grazie	Director	No	Yes	Yes	
O brasileiro e sua relação com o dinheiro - Pesquisa 2018	2018	July	Felipe Beer Frenkel	Head of Department	No	No	No	
Boletim Regional Curitiba	2018	August	Tulio Maciel	Head of Economic Department	No	No	No	
Perspectivas para a inflação Relatório Trimestral de Inflação	2018	September	Carlos Viana	Director	No	No	No	
Congresso Brasileiro de Mercado de Capitais	2018	September	Reinaldo Le Grazie	Director	No	No	Yes	
8º Congresso Internacional de Gestão de Risco	2018	October	Paulo Sérgio Neves de Souza	Director	Yes	Yes	Yes	

Discurso de abertura do diretor Carlos Viana de Carvalho no XIII Seminário Anual de Estabilidade Financeira e Economia Bancária do Banco Central do Brasil	2018	October	Carlos Viana	Director	No	Yes	Yes	
Relatório de Estabilidade Financeira	2018	October	Paulo Souza	Director	No	No	No	
Brazil: Economic and Monetary Outlook	2018	October	Thiago Berriel	Director	No	No	No	
Apontamentos do Presidente do Banco Central do Brasil, Ilan Goldfajn.	2018	October	Ilan Goldfajn	Governor	No	No	No	
Discurso do Presidente do Banco Central, Ilan Goldfajn Abertura do I Seminário "Sistema BacenJud 2.0: desafios e perspectivas"	2018	October	Ilan Goldfajn	Governor	No	No	No	
The Nonpuzzling Behavior of Median Inflation	2018	October	Carlos Viana	Director	No	No	No	
Farewell Conference in honor of Governor Flug	2018	November	Ilan Goldfajn	Governor	No	No	No	
IV Fórum de Cidadania Financeira Discurso de abertura	2018	November	Ilan Goldfajn	Governor	No	No	No	
USO DE SERVIÇOS FINANCEIROS PELA POPULAÇÃO DE BAIXA RENDA	2018	November	Carlos Viana	Director	No	No	No	
Discurso do Diretor Reinaldo Le Grazie na Audiência Pública do Conselho Administrativo de Defesa Econômica (CADE)	2018	November	Reinaldo Le Grazie	Director	No	Yes	No	
Boletim Regional Belo Horizonte	2018	November	Tulio Maciel	Head of Economic Department	No	No	No	
Pronunciamento do Diretor de Relacionamento Institucional e Cidadania, Mauricio Costa de Moura, no V Encontro de Corregedorias do Poder Executivo Federal	2018	November	Mauricio Moura	Director	No	No	No	
Conjuntura Econômica Brasileira e Internacional	2018	November	Reinaldo Le Grazie	Director	No	No	No	

Agenda BC 2º Ano	2018	November	Ilan Goldfajn	Governor	Yes	Yes	Yes	
Reavaliação do Risco Brasil	2018	December	Ilan Goldfajn	Governor	Yes	Yes	Yes	
Apontamentos do Presidente do Banco Central do Brasil, Ilan Goldfajn.	2018	December	Ilan Goldfajn	Governor	Yes	Yes	Yes	
Senado Federal Comissão de Assuntos Econômico	2018	December	Ilan Goldfajn	Governor	No	No	No	
Pronunciamento do Presidente do Banco Central do Brasil Ilan Goldfajn na Comissão de Assuntos Econômicos do Senado	2018	December	Ilan Goldfajn	Governor	Yes	Yes	Yes	
ATO NORMATIVO CONJUNTO Nº 1	2018	December	Banco Central do Brasil	-	No	No	No	
Perspectivas para a inflação Relatório Trimestral de Inflação	2018	December	Carlos Viana	Director	No	No	No	
Oportunidades e Desafios para o BCB	2018	December	Ilan Goldfajn	Governor	Yes	Yes	Yes	
Central Banking in Emerging Markets	2019	January	Ilan Goldfajn	Governor	No	No	No	
Discurso de abertura do Presidente do Banco Central do Brasil, Ilan Goldfajn	2019	January	Ilan Goldfajn	Governor	No	No	No	
Brazil: Economic Overview	2019	January	Ilan Goldfajn	Governor	No	No	No	
Boletim Regional Salvador	2019	February	Tulio Maciel	Director	No	No	No	
Conquistas e Desafios para o BCB	2019	February	Ilan Goldfajn	Governor	Yes	Yes	Yes	
Trajetória da economia brasileira nos últimos anos	2019	February	Ilan Goldfajn	Governor	Yes	Yes	Yes	
Survey data to monitor economic and financial conditions	2019	February	Carlos Viana	Director	No	No	No	
Pronunciamento do Sr. João Manoel Pinho de Mello na Sabatina do Senado Federal para Apreciação de sua Indicação ao Cargo de Diretor do Banco Central do Brasi	2019	February	João Manoel Pinho de Mello	Director	Yes	Yes	Yes	

Pronunciamento do Sr. Roberto de Oliveira Campos Neto na Sabatina do Senado Federal para Apreciação de sua Indicação ao Cargo de Presidente do Banco Central do Brasil	2019	February	Roberto de Oliveira Campos Neto	Governor	Yes	No	No	
Pronunciamento do Sr. Bruno Serra Fernandes na Sabatina do Senado Federal para Apreciação de sua Indicação ao Cargo de Diretor do Banco Central do Brasil	2019	February	Bruno Serra Fernandes	Director	Yes	Yes	No	
Discurso da Diretora de Administração, Carolina de Assis Barros, no Lançamento da segunda chamada de projetos do Laboratório de Inovações Financeiras e Tecnológicas (LIFT)	2019	March	Carolina de Assis Barros	Director	Yes	No	No	
Discurso de Ilan Goldfajn na cerimônia de transmissão do cargo de Presidente do Banco Central do Brasil.	2019	March	Ilan Goldfajn	Governor	No	Yes	Yes	
Pronunciamento do Sr. Roberto de Oliveira Campos Neto Cerimônia de Transmissão do Cargo de Presidente do Banco Central do Brasil	2019	March	Roberto de Oliveira Campos Neto	Governor	Yes	Yes	Yes	
Seminário FGV de Direito e Economia Regulação e concorrência no SFN – Uma nova agenda	2019	March	Carlos Viana	Director	No	Yes	Yes	
Apontamentos do Presidente Roberto Campos Neto Lançamento da segunda chamada de projetos do Laboratório de Inovações Financeiras e Tecnológicas (LIFT)	2019	March	Roberto de Oliveira Campos Neto	Governor	Yes	Yes	No	
Perspectivas para a inflação Relatório Trimestral de Inflação	2019	March	Carlos Viana	Director	No	No	No	

Apontamentos do Presidente do Banco Central do Brasil, Roberto Campos Neto Conferência Anual sobre Macroeconomia e Estratégia, Goldman Sachs Brasil	2019	April	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Apontamentos do Presidente do Banco Central do Brasil, Roberto Campos Neto Fórum da Liberdade	2019	April	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Brazil: Economic and Monetary Outlook	2019	April	Thiago Berriel	Director	No	No	No	
Central Banking in a Transforming Economy	2019	April	Roberto de Oliveira Campos Neto	Governor	Yes	No	No	
Apontamentos do Presidente do Banco Central do Brasil, Roberto Campos Neto, em eventos na viagem aos Estados Unidos	2019	April	Roberto de Oliveira Campos Neto	Governor	Yes	No	No	
Outlook for the Brazilian Economy	2019	April	Carlos Viana	Director	No	No	No	
Relatório de Estabilidade Financeira	2019	April	Paulo Sergio Souza	Director	No	No	No	
Managing the Soft Landing of the Global Economy The Task for Emerging Markets	2019	April	Thiago Berriel	Director	No	No	No	
Discurso do Diretor de Fiscalização do Banco Central, Paulo Souza, na mesa de abertura dos Trabalhos da Reunião Plenária do Conselho Consultivo Nacional do Ramo de Crédito da OCB	2019	April	Paulo Sergio Souza	Director	No	Yes	No	
Perspectivas para a inflação	2019	April	Carlos Viana	Director	No	No	No	
Autonomia do Banco Central do Brasil Uma Agenda Necessária	2019	April	Thiago Berriel	Director	No	No	No	
Boletim Regional Fortaleza	2019	April	Tulio Maciel	Director	No	No	No	
Discurso do Diretor de Política Monetária, Bruno Serra Fernandes, no 4º Compliance and Business Day ABRACAM	2019	April	Bruno Serra Fernandes	Director	No	Yes	Yes	
Papel do BCB no novo contexto internacional	2019	April	Roberto de Oliveira Campos Neto	Governor	Yes	No	No	

Abertura da 6ª Semana Nacional de Educação Financeira Diretor Maurício Moura	2019	May	Mauricio Moura	Director	No	No	No	
ROTEIRO PARA SUSTENTAÇÃO ORAL - ARGUIÇÃO DE DESCUMPRIMENTO DE PRECEITO FUNDAMENTAL Nº 77	2019	May	Cristiano Cozer	Attorney	No	No	No	
Brazil: Economic and Monetary Outlook	2019	May	Thiago Berriel	Director	No	No	No	
Apontamentos do Presidente do Banco Central do Brasil, Roberto Campos Neto Workshop Open Banking	2019	May	Roberto de Oliveira Campos Neto	Governor	Yes	Yes	No	
Pronunciamento do Presidente do Banco Central do Brasil, Roberto de Oliveira Campos Neto, na Comissão Mista de Planos, Orçamentos Públicos e Fiscalização – CMO	2019	May	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Comissão Mista de Planos, Orçamentos Públicos e Fiscalização - CMO	2019	May	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Discurso do Diretor de Organização do Sistema Financeiro e Resolução do Banco Central do Brasil, João Manoel Pinho de Mello	2019	May	João Manoel Pinho de Mello	Director	Yes	Yes	No	
Acordo Administrativo em Processo de Supervisão (APS)	2019	May	Cristiano Cozer	Attorney	No	No	No	
XXI Seminário Anual de Metas para a Inflação Discurso de Abertura Presidente Roberto Campos Neto	2019	May	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Apontamentos do Diretor de Relacionamento Institucional e Cidadania do Banco Central, Mauricio Moura	2019	May	Mauricio Moura	Director	No	No	No	
Relatório de Economia Bancária	2019	May	Carlos Viana	Director	No	Yes	No	

Lançamento da Agenda BC# Presidente do Banco Central do Brasil, Roberto Campos Neto (notas sobre a apresentação)	2019	May	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Agenda BC# - Pauta de Trabalho	2019	May	Roberto de Oliveira Campos Neto	Governor	Yes	No	No	
Demographics and Real Interest Rates Across Countries and Over Time∗	2019	May	Carlos Viana	Director	No	No	No	
Pronunciamento do Presidente do Banco Central do Brasil, Roberto de Oliveira Campos Neto, Lançamento da Iniciativa de Mercados de Capitais (IMK)	2019	June	Roberto de Oliveira Campos Neto	Governor	Yes	Yes	Yes	
An aging Brazil: the role of the financial system	2019	June	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Brazil: Economic and Monetary Outlook	2019	June	Thiago Berriel	Director	No	No	No	
As novas soluções tecnológicas, os dados abertos e os serviços financeiros Não fique de fora!	2019	June	Marcos Cursino	-	Yes	No	No	
Agenda BC# – Cooperativismo de Crédito	2019	June	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Abertura da Premiação Finanças Mais	2019	June	Bruno Serra Fernandes	Director	No	No	No	
Discurso do Diretor de Política Monetária, Bruno Serra, em evento “Estadão Finanças Mais”, em São Paulo	2019	June	Bruno Serra Fernandes	Director	Yes	Yes	No	
Perspectivas para a inflação Relatório Trimestral de Inflação	2019	June	Carlos Viana	Director	No	No	No	
Conjuntura econômica e Agenda BC#	2019	June	Carlos Viana	Director	No	No	No	
A intermediação financeira do futuro	2019	July	João Manoel Pinho de Mello	Director	No	No	No	

Apontamentos do presidente do Banco Central do Brasil Roberto Campos Neto UBS High-level macro event	2019	July	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Pronunciamento da Dra. Fernanda Feitosa Nechio na Sabatina do Senado Federal para Apreciação de sua Indicação ao Cargo de Diretora do Banco Central do Brasil	2019	July	Fernanda Feitosa Neicho	Director	No	No	No	
OS DESAFIOS DA CONDUÇÃO DE POLÍTICA MONETÁRIA NA ATUAL CONJUNTURA ECONÔMICA	2019	July	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Capital Markets in Brazil: Recent developments	2019	July	João Manoel Pinho de Mello	Director	No	No	No	
The Changing Nature and Geography of Global Finance Monetary Policy and challenges ahead: Brazil's perspective	2019	July	Fernanda Feitosa Neicho	Director	No	No	No	
BC# e o Open Banking	2019	July	João Manoel Pinho de Mello	Director	No	No	No	
Exchange Rates and Monetary Policy Frameworks	2019	July	Carlos Viana	Director	No	No	No	
Cerimônia de Assinatura do ACT e da Portaria	2019	July	Mauricio Moura	Director	No	No	No	
COMO FAZER OS JUROS CAÍREM NO BRASIL	2019	August	Roberto de Oliveira Campos Neto	Governor	No	No	No	
A IMPORTÂNCIA DA EDUCAÇÃO FINANCEIRA COMO FORMA DE GARANTIR O USO ADEQUADO DAS OPÇÕES DE CRÉDITO PARA OS CONSUMIDORES	2019	August	Mauricio Moura	Director	No	No	No	
CENÁRIO ECONÔMICO E AGENDA BC#	2019	August	Roberto de Oliveira Campos Neto	Governor	No	No	No	

CENÁRIO ECONÔMICO E AGENDA BC#	2019	August	Roberto de Oliveira Campos Neto	Governor	No	No	No	
CENÁRIO ECONÔMICO E AGENDA BC#	2019	August	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Open Banking: Desafios e Oportunidades	2019	August	João Manoel Pinho de Mello	Director	No	No	No	
Boletim Regional Porto Alegre	2019	August	Tulio Maciel	Director	No	No	No	
CAFÉ DA MANHÃ COM PARLAMENTARES	2019	August	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Apontamentos do Presidente do Banco Central do Brasil, Roberto Campos Neto Posse do Presidente da Unidade de Inteligência Financeira (UIF)	2019	August	Roberto de Oliveira Campos Neto	Governor	No	No	No	
CAFÉ COM CEOS DO SETOR REAL	2019	August	Roberto de Oliveira Campos Neto	Governor	No	No	No	
3° Seminário de Contabilidade	2019	August	Paulo Souza	Director	Yes	Yes	Yes	
AUDIÊNCIA NA COMISSÃO DE ASSUNTOS ECONÔMICOS	2019	August	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Pronunciamento do Presidente do Banco Central do Brasil Roberto Campos Neto na Comissão de Assuntos Econômicos do Senado	2019	August	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Apontamentos do Presidente do Banco Central do Brasil, Roberto Campos Neto Fatos Reais Abertura da exposição Estabilidade Real	2019	August	Roberto de Oliveira Campos Neto	Governor	No	No	No	
15ª Congresso FEBRABAM de Direito Bancário - Open Banking no contexto da Agenda BC#	2019	August	Roberto de Oliveira Campos Neto	Governor	Yes	No	No	

CÂMARA ESPANHOLA DE COMÉRCIO	2019	August	Roberto de Oliveira Campos Neto	Governor	No	No	No	
CONFERÊNCIA: BRAZIL'S AGENDA FOR GROWTH AND DEVELOPMENT	2019	September	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Fórum B3 Week	2019	September	João Manoel Pinho de Mello	Director	No	No	No	
Material para os eventos: 8 th ANNUAL LATIN AMERICA CONFERENCE: EUROPEAN FORUM & LUNCHEON WITH INVESTORS AT THE EEFC	2019	September	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Demographics and Real Interest Rates Across Countries and Over Time	2019	September	Carlos Viana	Director	No	No	No	
Perspectivas para a inflação Relatório Trimestral de Inflação	2019	September	Carlos Viana	Director	No	No	No	
Agenda BC# AMBIMA	2019	September	Bruno Serra Fernandes	Director	No	No	No	
CENTRO DE DEBATE DE POLÍTICAS PÚBLICAS (CDPP)	2019	September	Roberto de Oliveira Campos Neto	Governor	No	No	No	
COMITÊ DIRETIVO GLOBAL DE BAKER MCKENZIE	2019	September	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Competição e Meios de Pagamento	2019	September	João Manoel Pinho de Mello	Director	Yes	Yes	Yes	
ATIVIDADE ECONÔMICA	2019	October	João Manoel Pinho de Mello	Director	Yes	Yes	Yes	
Open Banking	2019	October	Otávio Damasco	Director	Yes	Yes	Yes	
Relatório de Estabilidade Financeira	2019	October	Paulo Souza	Director	No	No	No	
2º FÓRUM INTEGRATIVO CONFEBRAS Regulação, fiscalização e normas: principais diretrizes para o fortalecimento das cooperativas de crédito	2019	October	Paulo Souza	Director	Yes	No	No	

IMF ANNUAL MEETINGS 2019	2019	October	Roberto de Oliveira Campos Neto	Governor	No	Yes	Yes	
Brazil: Economic and monetary outlook	2019	October	Fernanda Feitosa Neicho	Director	No	Yes	No	
Pronunciamento do Sr. Fabio Kanczuk na Sabatina do Senado Federal para Apreciação de sua Indicação ao Cargo de Diretor do Banco Central do Brasil	2019	October	Fabio Kanczuk	Director	No	No	No	
ATIVIDADE ECONÔMICA E AGENDA DE REFORMAS	2019	November	Roberto de Oliveira Campos Neto	Governor	No	Yes	Yes	
Perspectiva Histórica e Ambiente Econômico Seminário Dívida Pública – Caminhos para a Sustentabilidade	2019	November	Bruno Serra Fernandes	Director	No	No	No	
Boletim Regional Belém	2019	November	Tulio Maciel	Director	No	No	No	
CENÁRIO ECONÔMICO E AGENDA DE REFORMAS	2019	November	Roberto de Oliveira Campos Neto	Governor	No	Yes	Yes	
O Banco Central na construção do sistema financeiro do futuro	2019	November	João Manoel Pinho de Mello	Director	Yes	Yes	Yes	
O Banco Central e a Intermediação Financeira do Futuro	2019	November	João Manoel Pinho de Mello	Director	Yes	Yes	Yes	
Brazil: Economic and monetary outlook	2019	November	Fernanda Feitosa Neicho	Director	No	No	No	
CAFÉ DA MANHÃ - FINTECHS	2019	November	Roberto de Oliveira Campos Neto	Governor	No	Yes	Yes	
Proposta de Nova Lei Cambial	2019	November	Otávio Damasco	Director	No	No	No	
AUDIÊNCIA PÚBLICA COMISSÃO DE ASSUNTOS ECONÔMICOS	2019	November	Roberto de Oliveira Campos Neto	Governor	No	Yes	Yes	
COMISSÃO MISTA DE PLANOS, ORÇAMENTOS PÚBLICOS E FISCALIZAÇÃO	2019	November	Roberto de Oliveira Campos Neto	Governor	No	Yes	Yes	

DESAFIOS PARA 2020 O BRASIL QUE NOS AGUARDA	2019	November	Roberto de Oliveira Campos Neto	Governor	No	Yes	Yes	
Perspectivas sobre economia brasileira e mundial Seminário instrumentos e estratégias de hedge	2019	November	Bruno Serra Fernandes	Director	No	No	No	
Apontamentos do Presidente Roberto Campos Neto Lançamento do Programa LIFT Learning	2019	November	Roberto de Oliveira Campos Neto	Governor	Yes	No	No	
Apresentação da Diretora de Administração, Carolina de Assis Barros, no lançamento do LIFT Learning	2019	November	Carolina de Assis Barros	Director	Yes	No	No	
VIII High-Level Policy Dialogue between the Eurosystem and Latin American Central Banks Session II Global Financial Governance and the Eminent Persons Group Report: are we making the Global Financial System work for all?	2019	November	Fernanda Feitosa Neicho	Director	Yes	Yes	Yes	
BANK OF AMERICA MERRILL LYNCH	2019	December	Roberto de Oliveira Campos Neto	Governor	No	Yes	Yes	
Meios de pagamento: o caminho adiante	2019	December	João Manoel Pinho de Mello	Director	No	No	No	
Discurso do Presidente Roberto Campos Neto na cerimônia de assinatura do Acordo de Cooperação Técnica entre Banco Central do Brasil, Procuradoria-Geral da Fazenda Nacional e Conselho Nacional de Justiça	2019	December	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Perspectivas para a inflação Relatório Trimestral de Inflação	2019	December	Fabio Kanczuk	Director	No	No	No	
INSTITUTO DE ESTUDOS DE POLÍTICA ECONÔMICA- CASA DAS GARÇAS	2019	December	Roberto de Oliveira Campos Neto	Governor	No	Yes	Yes	

UMA PAUTA PARA O SISTEMA FINANCEIRO DO FUTURO	2020	January	Roberto de Oliveira Campos Neto	Governor	Yes	Yes	Yes	
24th SANTANDER'S ANNUAL LATIN AMERICAN CONFERENCE	2020	January	Roberto de Oliveira Campos Neto	Governor	Yes	Yes	Yes	
Notas do Presidente do Banco Central, Roberto Campos Neto Coletiva de imprensa sobre a Agenda BC#	2020	January	Roberto de Oliveira Campos Neto	Governor	Yes	Yes	Yes	
MACROECONOMIC OUTLOOK & BRAZILIAN REFORMS	2020	January	Roberto de Oliveira Campos Neto	Governor	Yes	Yes	Yes	
CENÁRIO MACROECONÔMICO E AGENDA BC#	2020	January	Roberto de Oliveira Campos Neto	Governor	Yes	Yes	Yes	
AGENDA DO BCB E NOVOS DESAFIOS DO SFN	2020	January	Roberto de Oliveira Campos Neto	Governor	Yes	Yes	Yes	
PL 5387/2019 - Nova Lei Cambial	2020	February	Roberto de Oliveira Campos Neto	Governor	No	Yes	Yes	
Autonomia do BC: uma agenda necessária	2020	February	Roberto de Oliveira Campos Neto	Governor	No	No	No	
PERSPECTIVAS DO CENÁRIO ECONÔMICO E PRIORIDADES DA AGENDA BC# 2020	2020	February	Roberto de Oliveira Campos Neto	Governor	Yes	Yes	Yes	
Boletim Regional Recife	2020	February	Tulio Maciel	Director	No	No	No	
Agenda Legislativa	2020	February	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Pagamentos Instantâneos Um universo de possibilidades	2020	February	João Manoel Pinho de Mello	Director	Yes	No	No	

Alteração na alíquota do recolhimento compulsório sobre recursos a prazo e aperfeiçoamento do LCR	2020	February	Bruno Serra Fernandes	Director	No	No	No	
The Productivity Problem	2020	March	Fabio Kanczuk	Director	No	No	No	
Apontamentos do Diretor de Política Monetária Bruno Serra Fernandes Oportunidades para Family Offices em 2020 DESAFIOS ECONÔMICOS DE 2020	2020	March	Bruno Serra Fernandes	Director	No	No	No	
DESAFIOS ECONÔMICOS DE 2020	2020	March	Bruno Serra Fernandes	Director	No	No	No	
Apontamentos do Presidente do Banco Central do Brasil Roberto Campos Neto na solenidade de assinatura do Projeto Lei Complementar de modernização da Lei Complementar 130/2009	2020	March	Roberto de Oliveira Campos Neto	Governor	Yes	No	No	
MEDIDAS DE COMBATE AOS EFEITOS DA COVID-19	2020	March	Roberto de Oliveira Campos Neto	Governor	No	No	No	First official presentation about COVID-19
Perspectivas para a inflação Relatório Trimestral de Inflação	2020	March	Fabio Kanczuk	Director	No	No	No	Reports about impact of COVID-19
ATUALIZAÇÃO DO CENÁRIO MACROECONÔMICO	2020	April	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
MEDIDAS DO BC PARA ENFRENTAMENTO DOS EFEITOS ECONÔMICOS DA COVID-19	2020	April	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
COMBATE AO EFEITOS DA COVID-19 NOVOS INSTRUMENTOS PARA O BC	2020	April	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Relatório de Estabilidade Financeira	2020	April	Paulo Souza	Director	No	No	No	Reports about impact of COVID-19

Brazil: Economic outlook	2020	April	Fernanda Feitosa Neicho	Director	No	No	No	Reports about impact of COVID-19
Brazil: Economic outlook	2020	April	Fernanda Feitosa Neicho	Director	No	No	No	Reports about impact of COVID-19
Brazil: Economic outlook	2020	April	Fernanda Feitosa Neicho	Director	No	No	No	Reports about impact of COVID-19
Brasil: Cenário Econômico	2020	May	Fernanda Feitosa Neicho	Director	No	No	No	Reports about impact of COVID-19
ENFRENTAMENTO DOS EFEITOS ECONÔMICOS DA COVID-19	2020	May	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
REUNIÃO COM INSTITUIÇÕES DOS COMITÊS DE INDÚSTRIAS ENFRENTAMENTO DOS EFEITOS ECONÔMICOS DA COVID-19	2020	May	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
REUNIÃO COM A ORGANIZAÇÃO DAS COOPERATIVAS BRASILEIRAS ENFRENTAMENTO DOS EFEITOS ECONÔMICOS DA COVID-19	2020	May	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
ENCONTRO COM LÍDERES DO VAREJO ENFRENTAMENTO DOS EFEITOS ECONÔMICOS DA COVID-19	2020	May	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Medidas de Combate aos efeitos da COVID-19 Fórum de Negociação da ANBIMA	2020	May	Bruno Serra Fernandes	Director	No	No	No	Reports about impact of COVID-19
“Estratégia e Ações do Banco Central em Resposta aos Desafios da Covid-19”	2020	May	João Manoel Pinho de Mello	Director	No	No	No	Reports about impact of COVID-19

Brazil: Economic Outlook	2020	May	Fernanda Feitosa Neicho	Director	No	No	No	Reports about impact of COVID-19
COMISSÃO MISTA DESTINADA A ACOMPANHAR A SITUAÇÃO FISCAL E A EXECUÇÃO ORÇAMENTÁRIA E FINANCEIRA DAS MEDIDAS RELACIONADAS AO CORONAVÍRUS (COVID-19) CN-COVID19	2020	June	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Relatório de Economia Bancária	2020	June	Fabio Kanczuk	Director	Yes	Yes	Yes	Reports about impact of COVID-19
ACTIONS AND ECONOMIC OUTLOOK DURING AND POST COVID-19	2020	June	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Impactos da pandemia na economia Medidas Emergenciais	2020	June	Bruno Serra Fernandes	Director	No	No	No	Reports about impact of COVID-19
Open Banking as a strategy to foster competition and consumer benefits	2020	June	João Manoel Pinho de Mello	Director	No	No	No	
Discurso do Presidente do Banco Central do Brasil, Roberto Campos Neto, na abertura da 9ª reunião plenária do Fórum Pagamentos Instantâneos	2020	June	Roberto de Oliveira Campos Neto	Director	No	No	No	
Discurso do Diretor de Organização do Sistema Financeiro e de Resolução, João Manoel Pinho de Mello, na abertura da 9ª reunião plenária do Fórum Pagamentos Instantâneos	2020	June	João Manoel Pinho de Mello	Director	No	Yes	No	
Discurso do Diretor de Política Monetária, Bruno Serra Fernandes, na abertura da 9ª Reunião Plenária do Fórum PIX	2020	June	Bruno Serra Fernandes	Director	No	No	No	
Atuação do Banco Central do Brasil em Tempos de Pandemia	2020	June	Bruno Serra Fernandes	Director	No	No	No	Reports about impact of COVID-19

COMO O NOVO MEIO DE PAGAMENTO, INSTANTÂNEO E DEMOCRÁTICO, PODE ACELERAR A RETOMADA DO CRESCIMENTO	2020	June	João Manoel Pinho de Mello	Director	Yes	No	No	Reports about impact of COVID-19
NOVAS MEDIDAS DE COMBATE AOS EFEITOS DA COVID-19	2020	June	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Perspectivas para a inflação Relatório Trimestral de Inflação	2020	June	Fabio Kanczuk	Director	No	No	No	Reports about impact of COVID-19
Pix na visão do BC	2020	June	João Manoel Pinho de Mello	Director	Yes	No	No	Reports about impact of COVID-19
BRAZILIAN-AMERICAN CHAMBER OF COMMERCE OF FLORIDA (BACCF) ECONOMIC CHALLENGES IN TIMES OF CRISIS	2020	June	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
COMITÊ DE COMÉRCIO E SERVIÇOS ENFRENTAMENTO DOS EFEITOS ECONÔMICOS DA COVID-19	2020	June	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
O CRÉDITO EM TEMPOS DE PANDEMIA Encontro com Dirigentes e Associados do SPC	2020	June	Fabio Kanczuk	Director	No	No	No	Reports about impact of COVID-19
Painel II: FAST PAYMENTS	2020	June	João Manoel Pinho de Mello	Director	Yes	No	No	Reports about impact of COVID-19
Open Banking: inovação pró-competitiva e benefícios aos clientes do SFN	2020	June	João Manoel Pinho de Mello	Director	No	No	No	
Brasil: Conjuntura econômica e desafios à frente	2020	July	Fernanda Feitosa Neicho	Director	No	No	No	Reports about impact of COVID-19
BCB'S APPROACH ON OPEN BANKING, REGULATORY SANDBOX AND INSTANT PAYMENTS (PIX)	2020	July	João Manoel Pinho de Mello	Director	Yes	No	No	

VIDEOCONFERÊNCIA COM EMBAIXADORES DA UNIÃO EUROPEIA ENFRENTAMENTO DOS EFEITOS ECONÔMICOS DA COVID-19	2020	July	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
CONFERENCE CALL - CITIBANK FACING THE ECONOMIC CRISIS OF COVID-19	2020	July	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Perspectiva do Banco Central sobre o Pix	2020	July	João Manoel Pinho de Mello	Director	Yes	No	No	
Apontamentos do Presidente do Banco Central do Brasil, Roberto Campos Neto Live Itaú: "Visão de Líderes" – Perspectivas para a Economia Brasileira e o Sistema Bancário	2020	July	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Liquidity and Firms after Covid-19	2020	July	João Manoel Pinho de Mello	Director	No	No	No	Reports about impact of COVID-19
Pix	2020	July	João Manoel Pinho de Mello	Director	Yes	No	No	Reports about impact of COVID-19
Programa Capital de Giro para Preservação de Empresas	2020	July	Paulo Souza	Director	No	No	No	Reports about impact of COVID-19
Medidas de Política Monetária e de Estabilidade Financeira em tempos de pandemia Centro de Debate de Políticas Públicas - CDPP	2020	July	Bruno Serra Fernandes	Director	No	No	No	Reports about impact of COVID-19
BANCO CENTRAL lançará cédula de R$ 200	2020	July	Carolina de Assis Barros	Director	No	No	No	Reports about impact of COVID-19
FORUM ABRAINC O FUTURO DA SECURITIZAÇÃO NO CRÉDITO IMOBILIÁRIO	2020	August	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19

Regulamento do Pix	2020	August	João Manoel Pinho de Mello	Director	No	No	No	
Desafios econômicos em tempos de crise	2020	August	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Desafios para o período pós-pandemia Associação de Bancos no Estado do Rio de Janeiro – ABERJ	2020	August	Fabio Kanczuk	Director	No	No	No	Reports about impact of COVID-19
A IMPORTÂNCIA DA EDUCAÇÃO FINANCEIRA NO BRASIL E A ATUAÇÃO DO BANCO CENTRAL	2020	August	Mauricio Moura	Director	No	No	No	
Medidas de Combate aos Efeitos da Covid-19	2020	August	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Economic challenges in times of crisis	2020	August	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Crédito para o Agronegócio	2020	August	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Pix: Revolução silenciosa	2020	August	João Manoel Pinho de Mello	Director	Yes	No	No	Reports about impact of COVID-19
Apontamentos do Presidente do Banco Central do Brasil, Roberto Campos Neto. Sessão Ordinária do Conselho Pleno do COAF. Um ano da vinculação administrativa do COAF ao BCB	2020	August	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Discurso do Presidente do Banco Central do Brasil, Roberto Campos Neto na Segunda Reunião Preparatória para o XIV Encontro Nacional do Poder Judiciário – Lançamento SISBAJUD	2020	August	Roberto de Oliveira Campos Neto	Governor	No	No	No	

CONVENÇÃO ENTRE ENTIDADES REGISTRADORAS Recebíveis de Arranjos de Pagamento	2020	August	Banco Central do Brasil	-	No	No	No	
Pix: A estreia do sistema de Pagamentos Instantâneos no Brasil	2020	September	João Manoel Pinho de Mello	Director	Yes	No	No	Reports about impact of COVID-19
Discurso da Diretora de Administração do Banco Central, Carolina de Assis Barros, no lançamento da cédula de R$ 200	2020	September	Carolina de Assis Barros	Director	No	No	No	
Discurso do Presidente do Banco Central do Brasil, Roberto Campos Neto no Lançamento da Cédula de R$ 200	2020	September	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Cédula de 200 reais	2020	September	Carolina de Assis Barros	Director	No	No	No	
Brazil: Economic outlook and challenges ahead	2020	September	Fernanda Feitosa Neicho	Director	No	No	No	Reports about impact of COVID-19
Economic and policy challenges	2020	September	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Discurso de abertura do lançamento da dimensão Sustentabilidade da Agenda BC#	2020	September	Fernanda Feitosa Neicho	Director	No	No	No	Reports about impact of COVID-19
BC# Sustentabilidade	2020	September	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Desafios e oportunidades do cooperativismo de crédito frente ao novo SFN	2020	September	Paulo Souza	Director	No	No	No	Reports about impact of COVID-19
Perspectivas para a inflação Relatório Trimestral de Inflação	2020	September	Fabio Kanczuk	Director	No	No	No	Reports about impact of COVID-19
Brasil: conjuntura econômica e desafios	2020	September	Fernanda Feitosa Neicho	Director	No	No	No	Reports about impact of COVID-19

ECOSSISTEMA DE EDUCAÇÃO FINANCEIRA COM O SETOR BANCÁRIO	2020	September	Mauricio Moura	Director	No	No	No	
Brazilian Economic Outlook and Agenda BC#	2020	September	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Economic outlook for Brazil during and after this Covid-19 crisis	2020	October	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Economic outlook for Brazil during and after this Covid-19 crisis	2020	October	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Brasil: conjuntura econômica e desafios	2020	October	Fernanda Feitosa Neicho	Director	No	No	No	Reports about impact of COVID-19
Economic outlook for Brazil and implications for monetary policy	2020	October	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Cenário econômico para o Brasil durante e após a crise do Covid-19	2020	October	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Brazil: Economic outlook and challenges ahead	2020	October	Fernanda Feitosa Neicho	Director	No	No	No	Reports about impact of COVID-19
Implementação da Política Monetária frente à dinâmica recente dos mercados de renda fixa	2020	October	Bruno Serra Fernandes	Director	No	No	No	
Relatório de Estabilidade Financeira	2020	October	Paulo Souza	Director	No	No	No	Reports about impact of COVID-19
Economic outlook for Brazil during and after the Covid-19 crisis	2020	October	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19

Brazil: Economic outlook and challenges ahead	2020	October	Fernanda Feitosa Neicho	Director	No	No	No	Reports about impact of COVID-19
Pix, seu novo jeito de pagar e transferir	2020	October	João Manoel Pinho de Mello	Director	Yes	No	No	Reports about impact of COVID-19
Agenda BC : A dimensão Sustentabilidade do BCB	2020	October	Fernanda Feitosa Neicho	Director	No	No	No	
Pix: Fase de Operação Restrita –03 a 15/11	2020	October	João Manoel Pinho de Mello	Director	No	No	No	
Cenário econômico para o Brasil durante e após a crise do Covid-19	2020	November	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Cenário econômico para o Brasil e inovações da Agenda BC#	2020	November	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Cenário econômico e interface da política com a economia	2020	November	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Pix: Seu novo jeito de pagar ou transferir	2020	November	João Manoel Pinho de Mello	Director	Yes	No	No	Reports about impact of COVID-19
Pix: Seu novo jeito de pagar ou transferir	2020	November	João Manoel Pinho de Mello	Director	Yes	No	No	Reports about impact of COVID-19
Agenda BC : A dimensão Sustentabilidade do BCB	2020	November	Fernanda Feitosa Neicho	Director	No	No	No	
Cenário econômico para o Brasil durante e após a crise do Covid-19	2020	November	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Cenário econômico para o Brasil durante e após a crise do Covid-19	2020	November	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19

Cenário Econômico e Inovações da Agenda BC#	2020	November	Roberto de Oliveira Campos Neto	Governor	Yes	No	No	Reports about impact of COVID-19
Apontamentos do Presidente do Banco Central do Brasil Roberto Campos Neto na Abertura da 7ª Semana Nacional de Educação Financeira (ENEF)	2020	November	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Discurso do Diretor de Relacionamento, Cidadania e Supervisão de Conduta do Banco Central, Mauricio Moura, na Abertura da 7ª Semana Nacional de Educação Financeira Tema: "Resiliência Financeira: como atravessar a crise?"	2020	November	Mauricio Moura	Director	No	No	No	Reports about impact of COVID-19
Agenda BC : A dimensão Sustentabilidade do BCB	2020	November	Fernanda Feitosa Neicho	Director	No	No	No	
Pix: Seu novo jeito de pagar ou transferi	2020	November	João Manoel Pinho de Mello	Director	Yes	No	No	
Pix | Balanço da primeira semana	2020	November	João Manoel Pinho de Mello	Director	Yes	No	Yes	
Cenário econômico para o Brasil durante e após a crise do Covid-19	2020	November	Roberto de Oliveira Campos Neto	Governor	Yes	No	Yes	Reports about impact of COVID-19
Cenário econômico e Inovações da Agenda BC#	2020	November	Roberto de Oliveira Campos Neto	Governor	Yes	No	Yes	Reports about impact of COVID-19
Pix: Seu novo jeito de pagar ou transferir	2020	November	João Manoel Pinho de Mello	Director	Yes	No	Yes	Reports about impact of COVID-19
Pix: Seu novo jeito de pagar ou transferir	2020	November	João Manoel Pinho de Mello	Director	Yes	No	Yes	Reports about impact of COVID-19
Pix | The New Brazilian Means of Payments	2020	December	João Manoel Pinho de Mello	Director	Yes	Yes	No	

Apresentação do BC e Febraban no lançamento do Programa de Aceleração Meu Bolso em Dia.	2020	December	Luis Gustavo Mansur	Head of the Department of Promotion of Financial Citizenship	No	No	No	
Economic outlook for Brazil and Agenda BC#	2020	December	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Cenário econômico para o Brasil e Agenda BC#	2020	December	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Dados de Transações Pix	2020	December	João Manoel Pinho de Mello	Director	No	No	No	
Cenário econômico para o Brasil e Agenda BC#	2020	December	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Relatório de Inflação Dezembro de 2020	2020	December	Fabio Kanczuk	Director	No	No	No	Reports about impact of COVID-19
Economic outlook for Brazil and Agenda BC#	2021	January	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Cenário Econômico para o Brasil e Agenda BC#	2021	January	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Discurso do Diretor de Organização do Sistema Financeiro e de Resolução, João Manoel Pinho de Mello, na abertura da 12ª reunião plenária do Fórum Pix	2021	January	João Manoel Pinho de Mello	Director	No	No	No	
Apontamentos do Presidente do Banco Central do Brasil, Roberto Campos Neto no evento Open Banking: entenda o que é e como poderá ajudar na sua vida financeira	2021	February	Roberto de Oliveira Campos Neto	Governor	No	No	No	

Brazil's Economic Outlook and Agenda BC#	2021	February	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Brazil's Economic Outlook and Agenda BC#	2021	February	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
Projeto de Lei n° 5.387 (PL Cambial)	2021	February	Otávio Damasco	Director	Yes	Yes	No	
Live – Início das inscrições para o Sandbox	2021	February	João Manoel Pinho de Mello	Director	Yes	No	No	
Apontamentos do Presidente do Banco Central do Brasil, Roberto Campos Neto Cerimônia de Sanção da Lei de Autonomia do BC	2021	February	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Apontamentos do Presidente do Banco Central do Brasil, Roberto Campos Neto Cerimônia de Entrega do Diploma Mérito COAF	2021	March	Roberto de Oliveira Campos Neto	Governor	No	No	No	
Central Banking in Brazil in Times of Covid	2021	March	Roberto de Oliveira Campos Neto	Governor	No	No	No	Reports about impact of COVID-19
VIDEOCONFERÊNCIA COM EMBAIXADORES DA UNIÃO EUROPEIA ENFRENTAMENTO DOS EFEITOS ECONÔMICOS DA COVID-19	2021	March	Bruno Serra Fernandes	Director	No	No	No	

APPENDIX D – DETAILS OF THE DOCUMENTS COLLECTED FROM THE TAB SEARCH ENGINE OF THE BRAZILIAN CENTRAL BANK WEBSITE

STRING	RESOURCE NUBER	RESOURCE NAME	RESOURCE TYPE	DESCRIPTION	WEB ADDRESS (IF RESOURCE IS A WEBPAGE	DUPLICATED
"Fintech de crédito"	1	Perguntas e respostas Processo de Autorização para Constituição e Funcionamento	webpage	Q&A web page related to the institutions authorized to work by the BCB	https://www.bcb.gov.br/acessoinformacao/perguntasfrequentes-respostas/faq_autorizacaoconstefuncionamento	No
	2	Relatorio_de_Gestao_BC_2017.pdf	pdf	A Report containing information related to the management report of the BCB for the year 2017.		No
"Fintechs de crédito"	3	Fintechs de crédito e bancos digitais Estudo Especial nº 89/2020 – Divulgado originalmente como boxe do Relatório de Economia Bancária (2019)	pdf	A special study conducted by the BCB, addressing Credit Fintechs and Digital Banks		No
	4	Perguntas e respostas Fintechs de Crédito (SCD e SEP)	webpage	Q&A web page related to the fintechs	https://www.bcb.gov.br/acessoinformacao/perguntasfrequentes-respostas/faq_fintechs	No
	5	Fintechs	webpage	Web page dedicated to explaining the function of FinTechs in the financial system	https://www.bcb.gov.br/estabilidadefinanceira/fintechs	No

	6	Perguntas e respostas Processo de Autorização para Constituição e Funcionamento	webpage	Q&A web page related to the institutions authorized to work by the BCB	https://www.bcb.gov.br/acessoinformacao/perguntasfrequentes-respostas/faq_autorizacaoconstefuncionamento	Yes (with resource 1)
	7	Estudos Especiais do Banco Central - Estudo Especial nº 102/2021	webpage	A special study conducted by the BCB, addressing inflation indexes	https://www.bcb.gov.br/publicacoes/estudosespeciais	No
	8	Agenda BC 2º Ano	pdf	Presentation addressing BC agenda for the year 2018		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	9	Inclusão - O que são as fintechs de crédito?	webpage	Web page dedicated to explaining the function of FinTechs in the financial system	https://www.bcb.gov.br/estabilidadefinanceira/fintechs	Yes (with resource 5)
	10	Cartilha de Informações Financeiras para Migrantes e Refugiados em português	pdf	A document containing information related to the access to bank and other institutions regulated by the BCB to Migrants and Refugees		No

	11	Instituições de pagamento e seus modelos de negócio Estudo Especial nº 88/2020	pdf	A special study conducted by the BCB, addressing payment institutions and their business models		No
	12	Agenda BC - UMA PAUTA PARA O SISTEMA FINANCEIRO DO FUTURO	pdf	Presentation addressing BC agenda for the year 2020		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	13	Relatório de Economia Bancária - 2019	pdf	Report containing information related to Banking Economics Report of 2019		No
	14	Relatório de Gestão 2018.pdf	pdf	Report containing information related to the management report of the BCB for the year 2018.		No
	15	Relatório Integrado do Banco Central do Brasil - RIG - 2019	pdf	Integrated report of the BCB concerning its various areas of activities		No

	16	Nossos Resultados	webpage	A webpage containing the summary of the information present in the Integrated report of the BCB		Yes (with resource 15)
	17	relatório da administração 2018	pdf	Report of the management department of the BCB		No
	18	BC+	webpage	Topics covered by the Agenda BC +	https://www.bcb.gov.br/acessoinformacao/bcmais	No
	19	Relatório de Economia Bancária - 2018	pdf	Report containing information related to Banking Economics Report of 2018		No
	20	Relatório de Economia Bancária - 2017	pdf	Report containing information related to Banking Economics Report of 2017		No
	21	Fórum Infraestruturas do Mercado Financeiro	pdf	A document containing information about the new Scriptural Duplicate law.		No
	22	Fintechs de crédito crescem no Brasil	webpage	Webpage detailing the information regarding the growth of Credit	https://www.bcb.gov.br/detalhenoticia/463/noticia	No

				FinTechs in the country		
	23	Relatório de Economia Bancária - 2017	pdf	Report containing information related to Banking Economics Report of 2017		Yes (with resource 20)
	24	CMN aprimora regulação das fintechs para ajudar a economia a enfrentar os efeitos da COVID-19	webpage	Webpage detailing the information regarding modifications to Credit FinTech regulations to assist the COVID-19 crisis	https://www.bcb.gov.br/detalhenoticia/430/noticia	No
	25	Agenda BC# reforça ações de inovação no Sistema Financeiro Nacional	webpage	Details the BC# Agenda regarding innovation for the National Financial System	https://www.bcb.gov.br/detalhenoticia/409/noticia	No
	26	CMN - Votos do Banco Central - Reunião de 26/03/2020	webpage	Details the Votes of the BCB a meeting which occurred in 03/26/2020	https://www.bcb.gov.br/detalhenoticia/17019/nota	No

	27	Relatório de Economia Bancária 2019	pdf	A document containing the presentation related to the Banking Economics Report of 2019		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	28	relatório da administração 2018	pdf	Report of the management department of the BCB		Yes (with resource number 17)
	29	CENÁRIO MACROECONÔMICO E AGENDA BC#	pdf	Presentation related to the macroeconomic scenario and the BCB Agenda		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	30	AGENDA DO BCB E NOVOS DESAFIOS DO SFN	pdf	Presentation related to the new challenges faced by the BCB in its Agenda		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)

	31	PERSPECTIVAS DO CENÁRIO ECONÔMICO E PRIORIDADES DA AGENDA BC# 2020	pdf	Presentation related to the macroeconomic scenario and the BCB Agenda		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	32	Notas do Presidente do Banco Central, Roberto Campos Neto Coletiva de imprensa sobre a Agenda BC#	pdf	Notes of the BCB Governor regarding the BCB Agenda		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
"Sociedade de crédito direto"	33	Departamento de Operações Bancárias e de Sistema de Pagamentos - Deban. Relação de participantes do STR - Ambiente de Produção __	pdf	A table containing the details of all institutions participating in the STR production environment		No
	34	Fintechs	webpage	Web page dedicated to explaining the function of FinTechs in the financial system	https://www.bcb.gov.br/estabilidadefinanceira/fintechs	Yes (with resource 5)
	35	Concorrência no sistema financeiro	webpage	A webpage containing details of the competition in the financial system	https://www.bcb.gov.br/estabilidadefinanceira/concorrenciasfn	No

	36	Estatísticas do Pix	webpage	A webpage containing the statistical information related to the PIX technology	https://www.bcb.gov.br/estabilidadefinanceira/estatisticaspix	No
	37	Agenda BC 2º Ano	pdf	Presentation addressing BC agenda for the year 2018		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	38	Department of Banking Operations and Payments System - Deban - STR Participants List	pdf	A table containing the details of all institutions participating in the STR environment		No
	39	Financiamento amplo das empresas Estudo Especial nº 16/2018	pdf	A special study conducted by the BCB to address organization financing aspects		No
	40	PAGE NOT FOUND	webpage	The resource is no longer available in the mentioned directory	https://www.bcb.gov.br/content/estabilidadefinanceira/spi-pdf/participantes-spi-20210311.pdf	n/a
	41	Manual de utilização do CRD Versão 2.1.0	pdf	Manual detailing the utilization of the System CRD		No

	42	Fintechs de crédito e bancos digitais Estudo Especial nº 89/2020 – Divulgado originalmente como boxe do Relatório de Economia Bancária (2019)	pdf	A special study conducted by the BCB, addressing Credit Fintechs and Digital Banks		Yes (with resource 3)
	43	Roteiro para abertura de conta e alteração de forma de acesso principal	pdf	Manual detailing the procedures to open an account in the STR system		No
	44	Listagem com os atos normativos do CMN vigentes, em cumprimento ao art. 12 do Decreto nº 10.139, de 2019, com redação dada pelo Decreto nº 10.310, de 2020 (atualização em 28/7/2020)	pdf	A document containing the normative acts that are currently valid		No
	45	Quadro 13 - Instituições do SFN sob controle de grupos estrangeiros	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups		No
	46	Relatório de Gestão 2018.pdf	pdf	Report containing information related to the management		Yes (With resource 14)

				report of the BCB for the year 2018.		
	47	Regulamentação relacionada ao STR	webpage	A webpage containing the information related to the regulation of the STR system	https://www.bcb.gov.br/estabilidadefinanceira/strlegislacao	No
	48	Relatório de Economia Bancária - 2019	pdf	Report containing information related to Banking Economics Report of 2019		Yes (With resource 13)
	49	Sumário de Planos e Programas e Glossário de Instrumentos e Normas Relacionados à Política Econômico-Financeira	pdf	Document detailing the plans, programs, and the glossary of instruments and norms related to the economic-financial policy		No
	50	Quadro 16a - Quantitativo de Autorizações para Funcionamento	pdf	A table containing statistical data related to the authorization request to operate as a financial institution in the Financial system		No

	51	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	A table containing statistical data related to the authorization request to operate as a financial institution in the Financial system (includes authorizations issued for organizations currently not operating)		No
	52	Quadro 9 - Autorizações e alterações societárias - Principais ocorrências Processos aprovados e publicados no Diário Oficial - Janeiro/2021	pdf	A table containing the details of organizations that issued the request to operate in the financial system		No
	53	relatório da administração 2018	pdf	Report of the management department of the BCB		Yes (with resource 17)
	54	BC+	webpage	Topics covered by the Agenda BC +	https://www.bcb.gov.br/acessoinformacao/bcmais	Yes (with resource 18)
	55	Relatório de Economia Bancária - 2017	pdf	Report containing information related to Banking Economics Report of 2017		Yes (with resource 20)

	56	Relatório de Economia Bancária - 2018	pdf	Report containing information related to Banking Economics Report of 2018		Yes (With resource 19)
	57	Relatório de inflação - junho de 2018	pdf	A report containing information for inflation indexes for June of 2018		No
	58	Relatório de inflação - junho de 2018	pdf	A full report containing information for inflation indexes for June of 2018		No
	59	Relatório de inflação - junho de 2018	pdf	A full report containing information for inflation indexes for June of 2018		Yes (with resource 58)
	60	Relatório de Economia Bancária - 2017	pdf	Report containing information related to Banking Economics Report of 2017		Yes (with resource 20)
	61	TERMO DE COMPROMISSO	pdf	Document related to a judicial process involving an SCD institution		No
	62	Informe SPI - 046/2020, de 9/10/2020	pdf	Document related to a stress test to one of the BCB cyber systems		No

	63	Balanço parcial do primeiro dia de operação plena do Pix – mais de um milhão de transações	webpage	Webpage detailing the first day of PIX operation	https://www.bcb.gov.br/detalhenoticia/17246/nota	No
	64	Mais um passo na regulamentação do Open Banking: consulta pública recebe contribuições sobre a criação de nova modalidade de instituição responsável pela iniciação de transação de pagamento	webpage	Webpage detailing the information about new institutions related to payments	https://www.bcb.gov.br/detalhenoticia/17124/nota	No
	65	Agenda BC# reforça ações de inovação no Sistema Financeiro Nacional	webpage	Webpage detailing the actions of the BCB in its agenda	https://www.bcb.gov.br/detalhenoticia/409/noticia	No
	66	Consulta pública: no âmbito do processo de regulamentação do ecossistema do Open Banking, propõe-se a criação de nova modalidade de instituição responsável pela iniciação de transação de pagamento	webpage	Webpage detailing the creation of a new regulation for payment institutions	https://www.bcb.gov.br/detalhenoticia/467/noticia	No
	67	Quadro 9 - Autorizações e alterações societárias - Principais ocorrências Processos aprovados e publicados no Diário Oficial - Abril/2020	pdf	A table containing the details of authorization requests issued by BCB		No

	68	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	Statistical data of August 2020 regarding institutions authorized o work by the BCB		No
	69	Quadro 9 - Autorizações e alterações societárias - Principais ocorrências Processos aprovados e publicados no Diário Oficial - Julho/2020	pdf	Details of information regarding institutions authorized o work by the BCB in July of 2020		No
	70	Quadro 9 - Autorizações e alterações societárias - Principais ocorrências Processos aprovados e publicados no Diário Oficial - Setembro/2020	pdf	Details of information regarding institutions authorized o work by the BCB in September of 2020		No
	71	Quadro 9 - Autorizações e alterações societárias - Principais ocorrências Processos aprovados e publicados no Diário Oficial - Outubro/2020	pdf	Details of information regarding institutions authorized o work by the BCB in October of 2020		No
	72	Chart 13 - NFS institutions controlled by foreign groups	pdf	A table containing the details of institutions authorized to work in the National		No

				Financial System that does are controlled by foreign groups - position of November of 2020		
	73	Chart 13 - NFS institutions controlled by foreign groups	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of November of 2020		Yes (With resource 72)
	74	Quadro 9 - Autorizações e alterações societárias - Principais ocorrências Processos aprovados e publicados no Diário Oficial - Fevereiro/2020	pdf	Details of information regarding institutions authorized o work by the BCB in February of 2020		No
	75	Quadro 16a - Quantitativo de Autorizações para Funcionamento	pdf	A table containing statistical data related to the authorization request to operate as a financial institution in the Financial system		Yes (with resource 50)

	76	Quadro 16a - Quantitativo de Autorizações para Funcionamento	pdf	A table containing statistical data related to the authorization request to operate as a financial institution in the Financial system		Yes (with resource 50)
	77	Quadro 16a - Quantitativo de Autorizações para Funcionamento	pdf	A table containing statistical data related to the authorization request to operate as a financial institution in the Financial system		Yes (with resource 50)
	78	Quadro 16a - Quantitativo de Autorizações para Funcionamento	pdf	A table containing statistical data related to the authorization request to operate as a financial institution in the Financial system		Yes (with resource 50)
	79	Quadro 16a - Quantitativo de Autorizações para Funcionamento	pdf	A table containing statistical data related to the authorization request to operate as a financial		Yes (with resource 50)

				institution in the Financial system		
	80	Quadro 16a - Quantitativo de Autorizações para Funcionamento	pdf	A table containing statistical data related to the authorization request to operate as a financial institution in the Financial system		Yes (with resource 50)
	81	Quadro 16a - Quantitativo de Autorizações para Funcionamento	pdf	A table containing statistical data related to the authorization request to operate as a financial institution in the Financial system		Yes (with resource 50)
	82	Quadro 16a - Quantitativo de Autorizações para Funcionamento	pdf	A table containing statistical data related to the authorization request to operate as a financial institution in the Financial system		Yes (with resource 50)

	83	Quadro 16a - Quantitativo de Autorizações para Funcionamento	pdf	A table containing statistical data related to the authorization request to operate as a financial institution in the Financial system		Yes (with resource 50)
	84	Quadro 9 - Autorizações e alterações societárias - Principais ocorrências Processos aprovados e publicados no Diário Oficial - Maio/2020	pdf	Details of information regarding institutions authorized o work by the BCB in May of 2020		No
	85	Quadro 9 - Autorizações e alterações societárias - Principais ocorrências Processos aprovados e publicados no Diário Oficial - Agosto/2020	pdf	Details of information regarding institutions authorized o work by the BCB in August of 2020		No
	86	Pix | Balanço da primeira semana	pdf	Document detailing the first week of the PIX payment system		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)

	87	Chart 13 - NFS institutions controlled by foreign groups	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of February of 2020		No
	88	Chart 13 - NFS institutions controlled by foreign groups	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of January of 2020		No
	89	Chart 13 - NFS institutions controlled by foreign groups	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of		No

				September of 2020		
	90	Chart 13 - NFS institutions controlled by foreign groups	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of October of 2020		No
	91	Quadro 13 - Instituições do SFN sob controle de grupos estrangeiros	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of October of 2020		Yes (with resource 90)

	92	Quadro 13 - Instituições do SFN sob controle de grupos estrangeiros	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of January of 2020		Yes (with resource 88)
	93	Quadro 13 - Instituições do SFN sob controle de grupos estrangeiros	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of February of 2020		Yes (with resource 87)
	94	Chart 13 - NFS institutions controlled by foreign groups	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of August of 2020		No

	95	Chart 13 - NFS institutions controlled by foreign groups	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of July of 2020		No
	96	Chart 13 - NFS institutions controlled by foreign groups	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of May of 2020		No
	97	Chart 13 - NFS institutions controlled by foreign groups	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of march of 2020		No

	98	Chart 13 - NFS institutions controlled by foreign groups	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of March 2020		Yes (With resource 97)
	99	Quadro 13 - Instituições do SFN sob controle de grupos estrangeiros	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of July of 2020		Yes (With resource 95)
	100	Quadro 13 - Instituições do SFN sob controle de grupos estrangeiros	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of August of 2020		Yes (With resource 94)

	101	Quadro 13 - Instituições do SFN sob controle de grupos estrangeiros	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of September of 2020		Yes (With resource 89)
	102	Quadro 13 - Instituições do SFN sob controle de grupos estrangeiros	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of May of 2020		Yes (With resource 96)
	103	Quadro 13 - Instituições do SFN sob controle de grupos estrangeiros	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups -		No

				position of April of 2020		
	104	Quadro 13 - Instituições do SFN sob controle de grupos estrangeiros	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of march of 2020		Yes (With resource 97)
	105	Quadro 13 - Instituições do SFN sob controle de grupos estrangeiros	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of June of 2020		No

	106	Chart 13 - NFS institutions controlled by foreign groups	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of June of 2020		Yes (with resource 105)
	107	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	Statistical data of August 2020 regarding institutions authorized to work by the BCB		Yes (with resource 68)
	108	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	Statistical data of August 2020 regarding institutions authorized to work by the BCB		Yes (with resource 68)
	109	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	Statistical data of August 2020 regarding institutions authorized to work by the BCB - DECEMBER OF 2020		No

	110	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	Statistical data of August 2020 regarding institutions authorized to work by the BCB		Yes (with resource 68)
	111	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	Statistical data of August 2020 regarding institutions authorized to work by the BCB		Yes (with resource 68)
	112	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	Statistical data of August 2020 regarding institutions authorized to work by the BCB		Yes (with resource 68)
	113	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	Statistical data of August 2020 regarding institutions authorized to work by the BCB		Yes (with resource 68)
	114	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	Statistical data of August 2020 regarding institutions authorized to work by the BCB		Yes (with resource 68)

	115	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	Statistical data of August 2020 regarding institutions authorized to work by the BCB		Yes (with resource 68)
	116	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	Statistical data of August 2020 regarding institutions authorized to work by the BCB		Yes (with resource 68)
	117	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	Statistical data of August 2020 regarding institutions authorized to work by the BCB		Yes (with resource 68)
	118	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	Statistical data of August 2020 regarding institutions authorized to work by the BCB		Yes (with resource 68)
	119	Pix: Seu novo jeito de pagar ou transferir	pdf	Presentation related to the Pix payment system		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)

	120	Quadro 9 - Autorizações e alterações societárias - Principais ocorrências Processos aprovados e publicados no Diário Oficial - Dezembro/2020	pdf	Details of information regarding institutions authorized to work by the BCB in December of 2020		No
	121	Pix: Seu novo jeito de pagar ou transferir	pdf	Presentation related to the Pix payment system		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	122	Pix: Seu novo jeito de pagar ou transferir	pdf	Presentation related to the Pix payment system		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	123	Pix: Seu novo jeito de pagar ou transferir	pdf	Presentation related to the Pix payment system		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)

	124	Pix: Seu novo jeito de pagar ou transferir	pdf	Presentation related to the Pix payment system		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	125	Quadro 9 - Autorizações e alterações societárias - Principais ocorrências Processos aprovados e publicados no Diário Oficial - Junho/2020	pdf	Details of information regarding institutions authorized to work by the BCB in June of 2020		No
	126	Quadro 9 - Autorizações e alterações societárias - Principais ocorrências Processos aprovados e publicados no Diário Oficial - Março/2020	pdf	Details of information regarding institutions authorized to work by the BCB in March of 2020		No
	127	Quadro 9 - Autorizações e alterações societárias - Principais ocorrências Processos aprovados e publicados no Diário Oficial - Janeiro/2020	pdf	Details of information regarding institutions authorized to work by the BCB in January of 2020		No

	128	Cenário Econômico e Inovações da Agenda BC#	pdf	Presentation related to the innovation agenda of the BCB		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	129	PAGE NOT FOUND	webpage	The resource is no longer available in the mentioned directory	https://www.bcb.gov.br/content/estabilidadefinanceira/spi-pdf/participantes-spi-20210301.pdf	n/a
	130	PAGE NOT FOUND	webpage	The resource is no longer available in the mentioned directory	https://www.bcb.gov.br/content/estabilidadefinanceira/spi-pdf/participantes-spi-20210302.pdf	n/a
	131	PAGE NOT FOUND	webpage	The resource is no longer available in the mentioned directory	https://www.bcb.gov.br/content/estabilidadefinanceira/spi-pdf/participantes-spi-20210303.pdf	n/a
	132	PAGE NOT FOUND	webpage	The resource is no longer available in the mentioned directory	https://www.bcb.gov.br/content/estabilidadefinanceira/spi-pdf/participantes-spi-20210304.pdf	n/a
	133	PAGE NOT FOUND	webpage	The resource is no longer available in the mentioned directory	https://www.bcb.gov.br/content/estabilidadefinanceira/spi-pdf/participantes-spi-20210305.pdf	n/a
	134	Lista de participantes em processo de adesão ao PIX	pdf	A document containing the information related to the PIX participants		No

	135	PAGE NOT FOUND	webpage	The resource is no longer available in the mentioned directory	https://www.bcb.gov.br/content/estabilidadefinanceira/spi-pdf/participantes-spi-20210310.pdf	n/a
	136	PAGE NOT FOUND	webpage	The resource is no longer available in the mentioned directory	https://www.bcb.gov.br/content/estabilidadefinanceira/spi-pdf/participantes-spi-20210309.pdf	n/a
	137	PAGE NOT FOUND	webpage	The resource is no longer available in the mentioned directory	https://www.bcb.gov.br/content/estabilidadefinanceira/spi-pdf/participantes-spi-20210308.pdf	n/a
	138	Cenário econômico para o Brasil e inovações da Agenda BC#	pdf	A document containing the details of the innovation agenda for the BCB		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	139	Cenário econômico e Inovações da Agenda BC#	pdf	A document containing the details of the innovation agenda for the BCB		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	140	Lista de participantes em processo de adesão ao PIX	pdf	A document containing the information related to the PIX participants - August of 2020		No

	141	Cenário econômico para o Brasil durante e após a crise do Covid-19	pdf	Presentation detailing the economic scenario for Brazil during the pandemic of COVID 19		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	142	Lista de participantes do PIX	pdf	A document containing the information related to the PIX participants - October of 2020		No
	143	Cenário econômico para o Brasil durante e após a crise do Covid-19	pdf	Presentation detailing the economic scenario for Brazil during the pandemic of COVID 19		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	144	Cenário econômico para o Brasil durante e após a crise do Covid-19	pdf	Presentation detailing the economic scenario for Brazil during the pandemic of COVID 19		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	145	relatório da administração 2018	pdf	Report of the management department of the BCB		Yes (with resource 17)

	146	Informe SPI - 058/2020, de 30/11/2020		Document detailing procedures related to the cyber-system of the BCB		No
	147	DLI_2062 Modelo Documento (Válido a partir de Janeiro/2022)	Excel	Excel file containing details about the updates in a document related to institutional accounts		No
	148	11ª Reunião Plenária	pdf	Document related to the 11ª Pix meeting with the national congress		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
"sociedades de crédito direto"	149	Licenciamento	webpage	Webpage detailing the information regarding licensing request to work in the Brazil Financial System		No
	150	Prazo de Entrega dos Documentos Contábeis	pdf	A table containing the details related to deadlines for documents to be presented to BCB		No

	151	#coronavirus	pdf	Document detailing the actions taken by the BCB to foster innovation and contribute to the overcome the crisis caused by COVID-19		No
	152	Estudos Especiais do Banco Central - Estudo Especial nº 102/2021	webpage	The special study conducted by the BCB, addressing inflation indexes	https://www.bcb.gov.br/publicacoes/estudosespeciais	Yes (With resource 7)
	153	Instituições de pagamento e seus modelos de negócio Estudo Especial nº 88/2020	pdf	A special study conducted by the BCB, addressing payment institutions and their business models		Yes (With resource 11)
	154	Relatório de Estabilidade Financeira – Outubro 2020	pdf	A report containing information regarding financial stability aspects		No
	155	Fintechs de crédito e bancos digitais Estudo Especial nº 89/2020 – Divulgado originalmente como boxe do Relatório de Economia Bancária (2019)	pdf	A special study conducted by the BCB, addressing Credit Fintechs and Digital Banks		Yes (With resource 3)

	156	Cartilha de Informações Financeiras para Migrantes e Refugiados em português	pdf	A document containing information related to the access to banks and other institutions regulated by the BCB to Migrants and Refugees		Yes (With resource 10)
	157	Jornada da cidadania financeira no Brasil	pdf	Document detailing the actions promoted by BCB towards financial citizenship in Brazil		No
	158	Jornada da cidadania financeira no Brasil	pdf	Document detailing the actions promoted by BCB towards financial citizenship in Brazil		Yes (With resource 157)
	159	Relatório de Gestão 2018.pdf	pdf	Report containing information related to the management report of the BCB for the year 2018.		Yes (With resource 14)
	160	Relatório de Estabilidade Financeira Volume 19 | Número 2 | Outubro 2020	pdf	A full report containing information regarding financial stability aspects		No

	161	Relatório de Economia Bancária - 2019	pdf	Report containing information related to Banking Economics Report of 2019		Yes (With resource 13)
	162	relatório da administração 2018	pdf	Report of the management department of the BCB		Yes (With resource 17)
	163	Relatório de Estabilidade Financeira – April 2020	pdf	A report containing information regarding financial stability aspects		No
	164	Relatório de Economia Bancária - 2018	pdf	Report containing information related to Banking Economics Report of 2018		Yes (With resource 19)
	165	Relatório de Estabilidade Financeira Volume 19	Número 1	Abril 2020	pdf	A full report containing information regarding financial stability aspects		No
	166	Fórum Infraestruturas do Mercado Financeiro	pdf	Document detailing a new law related to payments in the financial system		No

	167	INSTRUÇÕES DE PREENCHIMENTO DO DEMONSTRATIVO DE LIMITES OPERACIONAIS INDIVIDUAIS - DLI	pdf	Document detailing the instructions to operations related to DLI		No
	168	CMN - Votos do Banco Central - Reunião de 26/03/2020	webpage	Details the Votes of the BCB a meeting which occurred in 03/26/2020	https://www.bcb.gov.br/detalhenoticia/17019/nota	Yes (With resource 26)
	169	Fintechs de crédito crescem no Brasil	webpage	Webpage detailing the information regarding the growth of Credit FinTechs in the country	https://www.bcb.gov.br/detalhenoticia/463/noticia	Yes (With resource 22)
	170	Relatório de Economia Bancária	pdf	Presentation related to the banking economic report		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	171	relatório da administração 2018	pdf	Report of the management department of the BCB		Yes (With resource 17)
"sociedade de empréstimo entre pessoas"	172	Fintechs	webpage	Web page dedicated to explaining the function of FinTechs in the financial system	https://www.bcb.gov.br/estabilidadefinanceira/fintechs	Yes (With resource 5)

	173	Concorrência no sistema financeiro	webpage	A webpage containing details of the competition in the financial system	https://www.bcb.gov.br/estabilidadefinanceira/concorrenciasfn	Yes (With resource 35)
	174	Agenda BC 2º Ano	pdf	Presentation addressing BC agenda for the year 2018		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	175	Financiamento amplo das empresas Estudo Especial nº 16/2018	pdf	A special study conducted by the BCB to address organization financing aspects		Yes (With resource 39)
	176	Departamento de Operações Bancárias e de Sistema de Pagamentos - Deban Relação de participantes do STR - Ambiente de Produção Atualizado em 15/03/2021	pdf	A table containing the information related to the participants of the STR system - updated in march of 2021		No
	177	Manual de utilização do CRD Versão 2.1.0	pdf	Manual detailing the utilization of the System CRD		Yes (with resource 41)
	178	Fintechs de crédito e bancos digitais Estudo Especial nº 89/2020 – Divulgado originalmente como boxe do Relatório de Economia Bancária (2019)	pdf	A special study conducted by the BCB, addressing Credit Fintechs and Digital Banks		Yes (with resource 3)

	179	Listagem com os atos normativos do CMN vigentes, em cumprimento ao art. 12 do Decreto nº 10.139, de 2019, com redação dada pelo Decreto nº 10.310, de 2020 (atualização em 28/7/2020)	pdf	A document containing the normative acts that are currently valid		Yes (with resource 44)
	180	Relatório de Gestão 2018.pdf	pdf	Report containing information related to the management report of the BCB for the year 2018.		Yes (with resource 14)
	181	Regulamentação relacionada ao STR	webpage	A webpage containing the information related to the regulation of the STR system	https://www.bcb.gov.br/estabilidadefinanceira/strlegislacao	Yes (with resource 47)
	182	Quadro 16a - Quantitativo de Autorizações para Funcionamento	pdf	A table containing the quantitative data related to the authorization requests issued to the BCB - Update of 2021		No
	183	Relatório de Economia Bancária - 2019	pdf	Report containing information related to Banking Economics Report of 2019		Yes (With resource 13)

	184	Sumário de Planos e Programas e Glossário de Instrumentos e Normas Relacionados à Política Econômico-Financeira	pdf	Document detailing the plans, programs, and the glossary of instruments and norms related to the economic-financial policy		Yes (With resource 49)
	185	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	A table containing the details of the institutions authorized to work by BCB - Update of January of 2021		No
	186	relatório da administração 2018	pdf	Report of the management department of the BCB		Yes (With resource 17)
	187	BC+	webpage	Topics covered by the Agenda BC +	https://www.bcb.gov.br/acessoinformacao/bcmais	Yes (With resource 18)
	188	Department of Banking Operations and Payments System - Deban - STR Participants List	pdf	A table containing the information related to the participants of the STR system - update of march 2021		No
	189	Relatório de Economia Bancária - 2018	pdf	Report containing information related to Banking		Yes (With resource 19)

				Economics Report of 2018		
	190	Relatório de Economia Bancária - 2017	pdf	Report containing information related to Banking Economics Report of 2017		Yes (With resource 20)
	191	Quadro 16a - Quantitativo de Autorizações para Funcionamento	pdf	A table containing the quantitative data related to the authorization requests issued to the BCB - Update of 2021		Yes (with resource 182)
	192	Relatório de inflação - junho de 2018	pdf	A report containing information for inflation indexes for June of 2018		Yes (with resource 57)
	193	INSTRUÇÕES DE PREENCHIMENTO DO DEMONSTRATIVO DE LIMITES OPERACIONAIS INDIVIDUAIS - DLI	pdf	Document detailing the instructions to operations related to DLI		Yes (with resource 167)
	194	Relatório de inflação - junho de 2018	pdf	A full report containing information for inflation indexes for June of 2019		Yes (with resource 58)
	195	Relatório de Economia Bancária - 2017	pdf	Report containing information related to		Yes (with resource 20)

				Banking Economics Report of 2017		
	196	Relatório de Economia Bancária - 2018	pdf	Report containing information related to Banking Economics Report of 2018		Yes (with resource 19)
"sociedades de empréstimo entre pessoas"	197	Licenciamento	webpage	Webpage detailing the information regarding licensing request to work in the Brazil Financial System		Yes (With resource 149)
	198	Prazo de Entrega dos Documentos Contábeis	pdf	A table containing the details related to deadlines for documents to be presented to BCB		Yes (With resource 150)
	199	#coronavirus	pdf	Document detailing the actions taken by the BCB to foster innovation and contribute to the overcome the crisis caused by COVID-19		Yes (With resource 151)
	200	Estudos Especiais do Banco Central	pdf	A special study developed by the BCB, addressing the economic		No

				scenario of the country		
	201	Instituições de pagamento e seus modelos de negócio Estudo Especial nº 88/2020	pdf	A special study conducted by the BCB, addressing payment institutions and their business models		Yes (With resource 11)
	202	Relatório de Estabilidade Financeira – Outubro 2020	pdf	A report containing information regarding financial stability aspects		Yes (With resource 154)
	203	Fintechs de crédito e bancos digitais Estudo Especial nº 89/2020 – Divulgado originalmente como boxe do Relatório de Economia Bancária (2019)	pdf	A special study conducted by the BCB, addressing Credit Fintechs and Digital Banks		Yes (With resource 3)
	204	Cartilha de Informações Financeiras para Migrantes e Refugiados em português	pdf	A document containing information related to the access to banks and other institutions regulated by the BCB to Migrants and Refugees		Yes (With resource 10)
	205	Relatório de Gestão 2018.pdf	pdf	Report containing information related to the management		Yes (With resource 14)

				report of the BCB for the year 2018.		
	206	Relatório de Estabilidade Financeira – Outubro 2020	pdf	A report containing information regarding financial stability aspects		Yes (With resource 154)
	207	Relatório de Economia Bancária - 2019	pdf	Report containing information related to Banking Economics Report of 2019		Yes (With resource 13)
	208	relatório da administração 2018	pdf	Report of the management department of the BCB		Yes (With resource 17)
	209	Relatório de Economia Bancária - 2018	pdf	Report containing information related to Banking Economics Report of 2018		Yes (With resource 19)
	210	SCR Sistema de Informações de Crédito Documento 3040 – Dados de Risco de Crédito Instruções de Preenchimento	No	A document containing the instructions to fill the form 3040 - Data related to Credit Risk		No

	211	INSTRUÇÕES DE PREENCHIMENTO DO DEMONSTRATIVO DE LIMITES OPERACIONAIS INDIVIDUAIS - DLI	pdf	Document detailing the instructions to operations related to DLI		Yes (With resource 167)
	212	relatório da administração 2018	pdf	Report of the management department of the BCB		Yes (With resource 17)
"SEP"	213	Fintechs	webpage	Web page dedicated to explaining the function of FinTechs in the financial system	https://www.bcb.gov.br/estabilidadefinanceira/fintechs	Yes (With resource 5)
	214	Perguntas e respostas Fintechs de Crédito (SCD e SEP)	webpage	Q&A web page related to the fintechs	https://www.bcb.gov.br/acessoinformacao/perguntasfrequentes-respostas/faq_fintechs	Yes (With resource 4)
	215	Fintechs de crédito e bancos digitais Estudo Especial nº 89/2020 – Divulgado originalmente como boxe do Relatório de Economia Bancária (2019)	pdf	A special study conducted by the BCB, addressing Credit Fintechs and Digital Banks		Yes (With resource 3)
	216	Department of Banking Operations and Payments System - Deban - STR Participants List	pdf	A table containing the information related to the participants of the STR system - update of march 2021		Yes (With resource 188)

	217	Concorrência no sistema financeiro	webpage	A webpage containing details of the competition in the financial system	https://www.bcb.gov.br/estabilidadefinanceira/concorrenciasfn	Yes (With resource 35)
	218	#coronavirus	pdf	Document detailing the actions taken by the BCB to foster innovation and contribute to the overcome the crisis caused by COVID-19		Yes (With resource 151)
	219	Estudos Especiais do Banco Central - Estudo Especial nº 102/2021	webpage	A special study conducted by the BCB, addressing inflation indexes	https://www.bcb.gov.br/publicacoes/estudosespeciais	Yes (With resource 7)
	220	Concorrência no sistema financeiro	webpage	A webpage containing details of the competition in the financial system	https://www.bcb.gov.br/estabilidadefinanceira/concorrenciasfn	Yes (With resource 35)
	221	Agenda BC 2º Ano	pdf	Presentation addressing BC agenda for the year 2018		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	222	Relatório de inflação - junho de 2018	pdf	A report containing information for inflation indexes for June of 2018		Yes (With resource 57)

	223	Instituições de pagamento e seus modelos de negócio Estudo Especial nº 88/2020	pdf	A special study conducted by the BCB, addressing payment institutions and their business models		Yes (With resource 11)
	224	Relatório de Inflação – junho de 2019	pdf	A report containing details of inflation indexes for June of 2019		No
	225	Department of Banking Operations and Payments System - Deban - STR Participants List	pdf	A table containing the information related to the participants of the STR system - update of march 2021		Yes (With resource 188)
	226	Relatório de Economia Bancária - 2019	pdf	Report containing information related to Banking Economics Report of 2019		Yes (With resource 13)
	227	Cartilha de Informações Financeiras para Migrantes e Refugiados em português	pdf	A document containing information related to the access to banks and other institutions regulated by the BCB to Migrants and Refugees		Yes (With resource 10)

	228	Cartilha de Informações Financeiras para Migrantes e Refugiados em português	pdf	A document containing information related to the access to banks and other institutions regulated by the BCB to Migrants and Refugees		Yes (With resource 10)
	229	Quadro 16a - Quantitativo de Autorizações para Funcionamento	pdf	A table containing the quantitative data related to the authorization requests issued to the BCB - Update of 2021		Yes (With resource 182)
	230	Relatório de Gestão 2018.pdf	pdf	Report containing information related to the management report of the BCB for the year 2018.		Yes (With resource 14)
	231	Quadro 12 - Participação estrangeira no capital votante de instituições do SFN	pdf	A table containing the details of the foreign capital related to SFN institutions		No
	232	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	A table containing the details of the institutions authorized to work by BCB -		Yes (With resource 185)

				Update of January of 2021		
	233	relatório da administração 2018	pdf	Report of the management department of the BCB		Yes (With resource 17)
	234	BC+	webpage	Topics covered by the Agenda BC +	https://www.bcb.gov.br/acessoinformacao/bcmais	Yes (With resource 18)
	235	Relatório de Economia Bancária - 2018	pdf	Report containing information related to Banking Economics Report of 2018		Yes (With resource 19)
	236	Relatório de Economia Bancária - 2017	pdf	Report containing information related to Banking Economics Report of 2017		Yes (With resource 20)
	237	Relatório de inflação - junho de 2020	pdf	A full report containing information for inflation indexes for June of 2020		No
	238	Relatório de inflação - junho de 2020	pdf	A full report containing information for inflation indexes for June of 2020		Yes (with resource 237)

	239	INSTRUÇÕES DE PREENCHIMENTO DO DEMONSTRATIVO DE LIMITES OPERACIONAIS INDIVIDUAIS - DLI	pdf	Document detailing the instructions to operations related to DLI		Yes (with resource 167)
	240	Relatório de Inflação – março de 2019	pdf	A report containing details of inflation indexes for March 2019		No
	241	Quadro 16a - Quantitativo de Autorizações para Funcionamento	pdf	A table containing the quantitative data related to the authorization requests issued to the BCB - Update of 2021		Yes (with resource 182)
	242	Relatório de Inflação – junho de 2019	pdf	A report containing details of inflation indexes for June of 2019		Yes (with resource 224)
	243	Quadro 12 - Participação estrangeira no capital votante de instituições do SFN	pdf	A table containing the details of the foreign capital related to SFN institutions		Yes (with resource 231)
	244	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	A table containing the details of the institutions authorized to work by BCB - Update of February of 2021		No

	245	Quadro 2 - Quantitativo de instituições autorizadas por tipo, com sede nas unidades da federação (UF)	pdf	Quantitative data related to institutions authorized to work by the BCB		No
	246	Relatório de Economia Bancária - 2017	pdf	Report containing information related to Banking Economics Report of 2017		Yes (with resource 20)
	247	DLI_2062 Modelo Documento (Válido a partir de Janeiro/2022)	Excel	Excel file containing details about the updates in a document related to institutional accounts		Yes (with resource 147)
	248	DLI_2062 Leiaute (Válido a partir de Janeiro/2022)	Excel	Excel file containing details about the updates in a document related to institutional accounts		No
"SCD"	249	Perguntas e respostas Fintechs de Crédito (SCD e SEP)	webpage	Q&A web page related to the fintechs	https://www.bcb.gov.br/acessoinformacao/perguntasfrequentes-respostas/faq_fintechs	Yes (with resource 4)
	250	Fintechs	webpage	Web page dedicated to explaining the function of FinTechs in the financial system	https://www.bcb.gov.br/estabilidadefinanceira/fintechs	Yes (with resource 5)

	251	Departamento de Operações Bancárias e de Sistema de Pagamentos - Deban Relação de participantes do STR - Ambiente de Produção Atualizado em 15/03/2021	pdf	A table containing the information related to the participants of the STR system - updated in march of 2021		Yes (with resource 176)
	252	Departamento de Operações Bancárias e de Sistema de Pagamentos - Deban Relação de participantes do STR - Ambiente de Produção Atualizado em 15/03/2021	pdf	A table containing the information related to the participants of the STR system - updated in march of 2022		Yes (with resource 176)
	253	#coronavirus	pdf	Document detailing the actions taken by the BCB to foster innovation and contribute to the overcome the crisis caused by COVID-19		Yes (with resource 151)
	254	Quadro 13 - Instituições do SFN sob controle de grupos estrangeiros	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - update of January of 2021		No

	255	Quadro 16a - Quantitativo de Autorizações para Funcionamento	pdf	A table containing the quantitative data related to the authorization requests issued to the BCB - Update of 2021		Yes (with resource 182)
	256	Agenda BC 2º Ano	pdf	Presentation addressing BC agenda for the year 2018		Yes (With resources already collected from the Texts, Documents, and Presentations tab - see Appendix C)
	257	Estudos Especiais do Banco Central - Estudo Especial nº 102/2021	webpage	A special study conducted by the BCB, addressing inflation indexes	https://www.bcb.gov.br/publicacoes/estudosespeciais	Yes (With resource 7)
	258	Instituições de pagamento e seus modelos de negócio Estudo Especial nº 88/2020	pdf	A special study conducted by the BCB, addressing payment institutions and their business models		Yes (With resource 11)
	259	participantes-spi-20210315.pdf	n/a	Object not found	https://www.bcb.gov.br/content/estabilidadefinanceira/spi-pdf/participantes-spi-20210315.pdf	n/a
	260	Quadro 12 - Participação estrangeira no capital votante de instituições do SFN	pdf	A table containing the details of the foreign capital related to SFN institutions		Yes (With resource 231)

	261	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	A table containing the details of the institutions authorized to work by BCB - Update of January of 2021		Yes (With resource 185)
	262	Quadro 2 - Quantitativo de instituições autorizadas por tipo, com sede nas unidades da federação (UF)	pdf	Quantitative data related to institutions authorized to work by the BCB		Yes (With resource 245)
	263	Roteiro para abertura de conta e alteração de forma de acesso principal	pdf	Manual detailing the procedures to open an account in the STR system		Yes (With resource 43)
	264	Cartilha de Informações Financeiras para Migrantes e Refugiados em português	pdf	A document containing information related to the access to banks and other institutions regulated by the BCB to Migrants and Refugees		Yes (With resource 10)
	265	Relatório de Economia Bancária - 2019	pdf	Report containing information related to Banking Economics Report of 2019		Yes (With resource 13)

	266	Relatório de Gestão 2018.pdf	pdf	Report containing information related to the management report of the BCB for the year 2018.		Yes (With resource 14)
	267	CONVENÇÃO ENTRE ENTIDADES REGISTRADORAS	pdf	A document containing the information related to the Convention between payment entities		No
	268	relatório da administração 2018	pdf	Report of the management department of the BCB		Yes (With resource 17)
	269	Quadro 13 - Instituições do SFN sob controle de grupos estrangeiros	pdf	A table containing the details of institutions authorized to work in the National Financial System that does are controlled by foreign groups - position of August of 2020		Yes (With resource 100)
	270	Fórum Infraestruturas do Mercado Financeiro	pdf	A document containing information about the new Scriptural Duplicate law.		Yes (With resource 21)

	271	INSTRUÇÕES DE PREENCHIMENTO DO DEMONSTRATIVO DE LIMITES OPERACIONAIS INDIVIDUAIS - DLI	pdf	Document detailing the instructions to operations related to DLI		Yes (With resource 167)
	272	BC+	webpage	Topics covered by the Agenda BC +	https://www.bcb.gov.br/acessoinformacao/bcmais	Yes (With resource 18)
	273	Relatório de Economia Bancária - 2018	pdf	Report containing information related to Banking Economics Report of 2018		Yes (With resource 19)
	274	Relatório de Economia Bancária - 2017	pdf	Report containing information related to Banking Economics Report of 2017		Yes (With resource 20)
	275	Quadro 16a - Quantitativo de Autorizações para Funcionamento	pdf	A table containing the quantitative data related to the authorization requests issued to the BCB - Update of 2021		Yes (With resource 182)
	276	Quadro 12 - Participação estrangeira no capital votante de instituições do SFN	pdf	Excel data containing the information related to foreign capital in the		No

	277	Quadro 1 - Quantitativo de instituições autorizadas 3 por segmento	pdf	A table containing the details of the institutions authorized to work by BCB - Update of February of 2021		Yes (With resource 244)
	278	Quadro 2 - Quantitativo de instituições autorizadas por tipo, com sede nas unidades da federação (UF)	pdf	Quantitative data related to institutions authorized to work by the BCB		Yes (With resource 245)
	279	DLI_2062 Modelo Documento (Válido a partir de Janeiro/2022)	Excel	Excel file containing details about the updates in a document related to institutional accounts		Yes (With resource 174)
	280	Relatório de Economia Bancária - 2017	pdf	Report containing information related to Banking Economics Report of 2017		Yes (With resource 20)
	281	DLI_2062 Leiaute (Válido a partir de Janeiro/2022)	Excel	Excel file containing details about the updates in a document related to institutional accounts		Yes (With resource 248)
	282	relatório da administração 2018	pdf	Report of the management department of the BCB		Yes (With resource 17)

APPENDIX E – TABLE CONTAINING THE ENTITIES IDENTIFIED IN THE DOCUMENTS COLLECTED ROM THE BCB INSTITUTIONAL WEBSITE

ENTITY CODE	ENTITY NAME (CODE ORIGINAL LANGUAGE	ENTITY NAME (TRANSLATED)
ENT-INS2 (Institutional entities - Group 2)	Novos concorrentes no mercado financeiro	Novel players of the financial market
	Amazon	Amazon
	IBM	IBM
	Microsoft	Microsoft
	Sistema Financeiro Nacional (SFN)	National Financial System
	Fintechs de crédito	Credit FinTechs
	Laboratório de Inovações Financeiras e Tecnológicas – Lift,	Laboratory of Financial and Technological Innovation - LIFT
	FintechLab	FintechLab
	Ecossistema de startups de serviços financeiros (fintech)	Ecosystem of startups related to financial sercices (FinTechs)
	empresas de tecnologia	Technology organizations
	Público muitas vezes não alcançado pelas instituições tradicionais	Public often not reached by traditional institutions
	Oracle	Oracle
	Sociedades de Crédito Direto (SCD)	Direct Credit Company (SCD)*
	Sociedades de Empréstimo entre Pessoas (SEP)	Peer-to-Peer Lending Company (SEP)8
	Fenasbac	Fenasbac
	Cielo	Cielo
	Representantes das fintechs	FinTechs representatives
	Associação Brasileira de Crédito Digital (ABCD)	Brazilian Association of Digital Credit (ABCD)
	Associação Brasileira de Fintechs (ABFintechs)	Brazilian Association of FinTechs (ABFintechs)
	Associação Brasileira de Instituições de Pagamentos (Abipag)	Brazilian Association of Payment Institutions (Abipag)
	Associação Brasileira da Empresas de Cartões de Crédito e Serviços (ABECS)	Brazilian Association of Credit Card and Service Companies (ABECS)
	B3	B3
	Associação Brasileira do Mercado Imobiliários (ABMI)	Brazilian Association of the Real Estate Market (ABMI)
	Associação Brasileira das Companhias Abertas (Abrasca)	Brazilian Association of Publicly-Held Companies (Abrasca)
	Associação Brasileira de Private Equity & Venture Capital (ABVCap)	Brazilian Private Equity & Venture Capital Association (ABVCap)
	Associação Brasileira das Entidades Fechadas de Previdência Complementar (Abrapp)	Brazilian Association of Closed Supplementary Pension Entities (Abrapp)
	Confederação Nacional das Seguradoras (CNSeg)	National Confederation of Insurance Companies (CNSeg)
	Associação Brasileira das Entidades dos Mercados Financeiros e de Capitais (Anbima)	Brazilian Association of Financial and Capital Market Entities (Anbima)

Associação de Investidores no Mercado de Capitais (Amec)	Association of Capital Market Investors (Amec)
Associação Brasileira de Bancos (ABBC)	Brazilian Association of Banks (ABBC)
Federação Brasileira de Bancos (Febraban)	Brazilian Federation of Banks (Febraban)
Reguladores integrantes da IMK	Regulators member of the IMK
Prestadores de serviços relevantes de processamento e armazenamento de dados e de computação em nuvem	Relevant data processing and storage and cloud computing service providers
Fintechs de pagamento	Payment FinTechs
Mercado de crédito	Credit Market
Bancos	Banks
Instituições de pagamentos	Payment Institutions
Cooperativas	Cooperatives
Departamento de Organização do Sistema Financeiro (Deorf)	Financial System Organization Department (Deorf)
Secretaria da Receita Federal do Brasil	Secretariat of the Federal Revenue Brazil
Fundos de investimentos	Investment funds
Comissão de Valores Mobiliários (CVM)	Securities and Exchange Commission (CVM)
Superintendência de Seguros Privados (Susep)	Superintendence of Private Insurance (SUSEP)
Conglomerado financeiro	Financial conglomerate
Banco Nacional de Desenvolvimento Econômico e Social (BNDES)	National Bank for Economic and Social Development (BNDES)
Companhias securitizadoras	Insurance companies
Fundos de investmento em direitos creditórios	Credit rights investment funds
Fundo Garantdor de Crédito (FGC)	Credit Guarantee Fund (FGC)
Credores	Creditors
Devedores	Debitors
Grupo de controle da SCD e da SEP	Control Group of SCD and SEP
Fundos de investimento cujas cotas sejam destinadas exclusivamente a investidores qualiącados	Investment funds whose shares are intended exclusively for qualified investors
Pessoas jurídicas não ąnanceiras	Non-financial legal entities
Reguladores internacionais	Foreign regulators
Reguladores nacionais	National regulators
Departamento de Tecnologia da Informação (Deinf)	Department of Information Technology (Deinf)
Banco digital	Digital banks
Startups financiadas	Financed startups
Conselho Administrativo de Defesa Econômica (Cade)	Administrative Council for Economic Defense (Cade)
Empresas especializadas em RegTech	Companies specialized in RegTech
Empresas do terceiro setor	Third sector companies
Startups	Startups

	Pequenas e médias empresas (PMEs)	Small and medum enterprises (SMEs)
	Partes na prestação de serviço financeiro	Parties in the provision of financial service
	Departamento de Competição e de Estrutura do Mercado Financeiro	Department of Competition and Financial Market Structure
	Micro e pequenas empresas	Micro and small enterprises
	Instituições do SFN sob controle de grupos estrangeiros	Financial institutions of the SFN under control of foreing groups
	IFs de menor porte	Small size Ifs
	Agentes econômicos vulneráveis	Vulnerable economic agents
ENT-IS2 (Information System entities - Group 2)	Plataformas eletrônicas	Electronic Platform
	Peer-to-peer lending	Peer-to-Peer Lending
	Internet	Internet
	Machine learning	Machine Learning
	Big data	Big Data
	Distributed ledger	Distributed ledger
	Sistema de Informações de Crédito (SCR3)	Credit Information System (SCR 3)
	Identidade digital	Digital Identity
	Pagamentos instantâneos	Instant payments
	Open banking	Open banking
	Plataformas digitais de crédito	Credit digital platforms
	APIs abertas	Open APIs
	Pagamento instantâneo (P2P) utilizando dispositivos móveis offline	Instant payment (P2P) using mobile devices offline
	Dispositivos móveis	Mobile devices
	Big Data & Analytics	Big Data & Analytics
	Inteligência Artificial	Artificial Inteligence
	Computação Cognitiva	Cognitive computing
	Blockchain	Blockchain
	Cloud computing	Cloud computing
	Digitalização	Digitalization
	Pix	Pix
	Sistemas públicos ou privados de cadastro de informações	Public or private information registration systems
	Sítio da instituição na internet	Institution website
	Outros canais de acesso à plataforma eletrônica	Other access channels to the electronic platform
	Plataformas online	Online platforms
	Sandbox regulatório	Regulatory sandbox
	Sistema de Informações de Crédito (SCR)	Credit Information System (SCR)
	Dados não estruturados	Non-structured data
	Novas tecnologias de acesso	New access technologies
	Processamento e armazenamento de dados	Storage and processing of data
	Sistema de Pagamentos Brasileiro (SPB)	Brazilian Payment System (SPB)

	Sistema de Transferência de Reservas (STR)	Reservation Transfer System (STR)
	Centralizadora da Compensação de Cheques (Compe)	Check Clearing Centralizer (Compe)
	Serviços providos por meio da Tecnologia da Informação (TI)	Services provided through Information Technology (IT)
	Infraestruturas de comunicação e de internet	Communication and internet infrastructure
ENT-REG2 (Regulatory Entities - Group 2)	Regulamentação das Fintechs	FinTech regulation
	Resolução nº 4.656/2018	Resolution No. 4.656 / 2018
	Regulação proporcional a instituições com propósitos específicos	Proportional regulation to institutions with specific purposes
	Lei de Proteção de Dados Pessoais (LGPD)	General Data Protection Regulation (GDPR)
	Comunicado nº 33.455/2019	Announcement 33.455 / 2019
	Resolução 4.122, de 2012	Resolution 4.122, of 2012
	Resolução 4.619	Resolution 4.619
	Lei 5.764, de 1971	Law 5.764, of 1971
	Lei 6.404, de 1976	Law 6.404, of 1976
	Lei 10.406, de 2002	Law 10.406, of 2002
	Resolução 4.434, de 2015	Resoltuion No. 4434, of 2015
	Resolução 4.721, de 2019;	Resolution No. 4.721, of 2019
	Circular 3.433, de 2009	Circular 3.433, of 2009
	Circular 3.885, de 2018	Circular 3.885, of 2018
	Resolução 4.792, de 26 de março de 2020	Resolution No. 4.792, of March 26, 2020
	Resolução 3.919, de 2010	Resolution 3,919, of 2010
	Lei 12.865, de 9 de outubro de 2013	Law No. 12.865, of October 9, 2013
	Decreto 9.544, de 29 de outubro de 2018	Decree No. 9.544, of October 29, 2018
	Atos normativos sobre a implementação do Sistema Financeiro Aberto (open banking)	Regulatory acts on the implementation of the Open Financial System (Open banking)
	Resolução CMN nº 4.657, de 2018	CMN Resolution No. 4.657, of 2018
	Resolução CMN nº 4.658, de 2018	CMN Resolution No. 4.658, of 2018
	Circular BC nº 3.898, de 2018	BCB Circular No. 3.898, of 2018
	Resolução Conjunta Nº 1	Joint Resolution No. 1
	Resolução N° 4.812	Resolution No. 4.812
	Carta-Circular nº 4.074, de 24.07.2020	Circular Letter No. 4,074, dated 07.24.2020
	A nova Lei da Duplicata Escritural	The new Law of the Book Duplicate
	Resolução 4.693/2018	Resolution 4.693 / 2018
ENT-DOC2 (Documental entities - Group 2)	Política de Segurança Cibernética	Cybersecurity policy
	Manual de Organização do Sistema Financeiro (Sisorf)	Financial System Organization Manual (Sisorf)

Diário Oficial	Official Diary
Documentação identificando as pessoas físicas e jurídicas que compõem o grupo econômico de que seja integrante a instituição e que possam vir a exercer influência direta ou indireta nos seus negócios	Documentation identifying the individuals and companies that make up the economic group of which the institution is a member and who may have a direct or indirect influence on their business
Documentação identificando o grupo de controle da instituição e os detentores de participação qualificada na instituição, com as respectivas participações societárias	Documentation identifying the institution's control group and the holders of qualified participation in the institution, with the respective shareholdings
Documentação informando o tipo de fundo, a forma de negociação de cotas, a quantidade de cotistas	Documentation stating the type of fund, the form of quota trading, the number of shareholders
Comprovação da origem e da respectiva movimentação financeira dos recursos utilizados no empreendimento pelos controladores e pelos detentores de participação qualificada	Proof of the origin and the respective financial movement of the resources used in the undertaking by the controllers and by the holders of qualified participation
Demonstração da compatibilidade da capacidade econômico-financeira com o porte, a natureza e o objetivo do empreendimento	Demonstration of the compatibility of economic and financial capacity with the size, nature, and purpose of the enterprise
Autorização, firmada por todos os integrantes do grupo de controle e por todos os detentores de participação qualificada	Authorization, signed by all members of the control group and by all holders of qualified participation
Declaração, firmada pelos participantes do grupo de controle e pelos detentores de participação qualificada	Declaration, signed by the participants of the control group and by the holders of qualified participation
Autorização do Banco Central (BC) para funcionar	Authorization to work issued by the BCB
Protocolo Digital	Digital protocol
Consulta pública	Public consulting
Comentários/sugestões encaminhadas	Comentaries / suggestions provided
Justificativa fundamentada	Reasoned justification
Fluxos de pagamentos previstos, a taxa de juros pactuada com os devedores, os tributos, as tarifas, os seguros, e outras despesas	Estimated payment flows, interest rates agreed with debtors, taxes, fees, insurance, and other expenses
Inadimplência média por classificação de risco das operações de empréstimo e de financiamento relativas aos últimos doze meses	Average default by risk rating of loan and financing operations for the last twelve months
Contratos	Contracts
Materiais de propaganda e de publicidade	Advertising and publicity materials
Demais documentos que se destinem aos clientes e aos usuários	Other documents for customers and users

	Informações das operações de crédito	Credit operations information
	Modelo de análise de crédito	Credit analysis model
	Propostas de atos normativos dispondo sobre o Ambiente	Proposals for normative acts related to the Environment
ENT-HU2 (Human entities - Group 2)	Público muitas vezes não alcançado pelas instituições tradicionais	Public often not reached by traditional institutions
	Credores	Creditors
	Devedores	Debitors
	Pessoas naturais[1]	Non-legal persons[1]
	Pessoas naturais[2]	Non-legal persons[2]
	Diretoria Colegiada	Collegiate Board
	Investidores externos ao sistema	Investors outside the system
	Investidores em fintech	Fintech investors
	Partes na prestação de serviço fnanceiro	Parties to the provision of financial services
	Clientes com menor acesso a serviços financeiros	Customers with less access to financial services
	Agentes econômicos vulneráveis	Vulnerable economic agents
ENT-SERV2 (Service Entities - Group 2)	Serviços financeiros por meios eletrônicos	Financial services by electronic means
	Emissão de instrumento pós-pago, no caso de SCD	Issuance of a post-paid instrument, in the case of the SCD
	Cessão de crédito para FIDC ou securitizadora	Credit assignment to FIDC or securitizer organization
	operações de empréstimo, financiamento e aquisição de direitos creditórios	loans, financing and acquisition of credit rights
	Análise de crédito para terceiros	Credit analysis for third parties
	Cobrança de crédito de terceiros	Third-party credit collection
	Intermediar operações de crédito	Intermediate credit operations
	Conceder operações de crédito em nome próprio	Granting credit operations in your own name
	Emprestar recursos próprios	Lending own resources
	Adquirir direitos creditórios	Acquire credit rights
	Emitir moeda eletrônica	Issuance of electronic currency
	Ceder operações de crédito para outras instituições financeiras, companhias securitizadoras e fundos de investimento em direitos creditórios	Assigning credit operations to other financial institutions, securitization companies, and credit rights investment funds
	Operações de empréstimo direto entre pessoas	Direct loan operations between people
	Serviços de correspondentes no país	Correspondent services in the country
	Atuação como representante de seguros na distribuição de seguro relacionado com as operações por ela concedidas por meio de plataforma eletrônica	Acting as an insurance representative in the distribution of insurance related to the operations granted by it through an electronic platform
	Intermediação de empréstimos e de financiamentos no formato de portfólios	intermediation of loans and financing in the form of portfolios

	Prestar informações a seus clientes e usuários sobre a natureza e a complexidade das operações contratadas e dos serviços ofertados	Provide information to its customers and users about the nature and complexity of the contracted operations and services offered
	Serviços digitais inovadores	Innovative digital services
	Operações de crédito, por meio de plataforma eletrônica, com recursos próprios	Credit operations, through an electronic platform, with their own resources
	Atividades bancárias mais tradicionais	More traditional banking activities
	Processamento e armazenamento de dados e de processos e gestão	Data and process processing and storage and management
	Repassar recursos do BNDES	Transfer funds from BNDES
	Serviços de processamento e armazenamento de dados e de computação em nuvem	Data processing and storage and cloud computing services
	Securitizar seus créditos para um leque mais amplo de fundos de investimento	Securitize your credits to a wider range of investment funds
ENT-OTHER2 (Other entities identified in the collected data – Group 2)	Pandemia de Covid-19	Covid-19 Pandemic

NOTES: [1] Refers to the Creditors. [2] Refers to the Debitors. * Key-actor of the network

APPENDIX F – TABLE CONTAINING THE TYPES OF DATA COLLECTED FROM THE SCD AND SEP INSTITUTIONAL WEBSITES

INSTITUTION	DATA COLLECTED FROM THE DOCUMENTS
BMS SCD S.A.	Privacy policy, details of services provided, and general details about the organization.
QI SCD S.A.	Details of services provided, general details about the organization, technological documentation of APIs, and technologies used.
CREDITAS SCD	Privacy policy, condition terms, details of services provided, details about the organization, and technical documentation about upload of data to the application.
LISTO SCD S.A.	Privacy policy, cybersecurity policy condition terms, code of ethics, details of services provided, and details about the organization.
ÓTIMO SCD S.A.	Report of Pilar 3, details of services provided, details about the organization.
BÔNUSCRED SCD S.A.	Details of services provided, details about the organization.
COBUCCIO SCD S.A.	Details about the organization.
SUMUP SCD S.A.	Financial reports, technical documentation about cookies and data collection technologies, technical documentation about SDK (Software development kits), details of services provided, and details about the organization.
CORA SCD S.A.	Privacy policy, independent auditor's financial statements, service use terms, details of services provided, and details about the organization.
CARTOS SCD S.A.	Cybersecurity policy, details of services provided, details about the organization.
FINERGY SOCIEDADE DE CRÉDITO DIRETO S.A.	n/a
STONE SOCIEDADE DE CRÉDITO DIRETO S.A.	Contract, technological documentation about used technologies, technical documentation about the APIs, and security policy.
Trinus Sociedade de Crédito Direto S.A.	Details about the organization.
Zipdin Soluções Digitais Sociedade de Crédito Direto S.A.	Cybersecurity policy, risk policies, terms, and conditions of services provided, details of services provided, and details about the organization.
Gerencianet Sociedade de Crédito Direto S.A.	Financial reports, independent auditor's financial statements, risk policies, cybersecurity policy, risk structure, terms and conditions of provided service, technical documentation about used technologies, and their integration to the SCD systems.
Solução Finanças Sociedade de Crédito Direto S.A.	n/a.

Marú Sociedade de Crédito Direto S.A.	n/a.
Multicred Sociedade de Crédito Direto S.A.	n/a.
NBRS Sociedade de Crédito Direto S.A.	Details about the organization, and independent auditor's financial statements.
Cred-System Sociedade de Crédito Direto S.A	Cybersecurity policy, privacy policy, details of services provided, and details about the organization.
Credifit Sociedade de Crédito Direto S.A.	Use terms for the service, privacy policy, and details about the organization.
Platacred Sociedade de Crédito Direto S.A.	Details about the organization.
FFCRED Sociedade de Crédito Direto S.A	Details of services provided, details about the organization.
Giro Socieadade de Crédito Direto S.A.	Details of services provided, details about the organization.
Stark Sociedade de Crédito Direto S.A.	Technical documentation about the APIs used documentation about the sandbox environment, details of services provided, and details about the organization.
TANGER SOCIEDADE DE CRÉDITO DIRETO S.A.	Privacy policy, details about the organization.
BRCard Sociedade de Crédito Direto S.A.	n/a.
DMCARD Sociedade de Crédito Direto S.A.	Privacy policy, terms, and conditions of services, financial reports, details of services provided, and details about the organization.
Work Sociedade de Crédito Direto S.A	Privacy policy, use terms of the platform, details of services provided, and details about the organization.
Geru Sociedade de Crédito Direto S.A.	Details of services provided, details about the organization.
Delcred Sociedade de Crédito Direto S.A.	Details about the organization.
Fincapital Sociedade de Crédito Direto S.A	n/a.
J17 Sociedade de Crédito Direto S.A.	n/a.

N26 Sociedade de Crédito Direto S.A.	Details about the organization.
HB Capital SCD S.A	Financial reports, independent auditor's financial statements, cybersecurity policy, contingency policy, details about the organization details of services provided.
BMP Money Plus SCD S.A	Privacy policy, user terms of the platform, Brazilian GDPR, use terms of the services, details of services provided, and details about the organization.
Starcred SCD S.A.	Cybersecurity policy, privacy policy, independent auditor's financial statements, details of services provided, and details about the organization.
Bigcash SCD S.A.	Privacy policy, user terms of the platform, Brazilian GDPR, use terms of the services, details of services provided, and details about the organization.
Lamara SCD S.A.	Cybersecurity policy, details of services provided, details about the organization.
Valor SCD S.A.	Privacy policy, user terms of the platform, risk policies, cybersecurity policy, organizational structure, details of services provided, and details about the organization.
UP.P SEP S.A.	Cybersecurity policy, use terms, privacy policy, data protection policy, details about customer rating, financial reports, details of services provided, and details about the organization.
Crednovo Sociedade de Empréstimo entre Pessoas S.A.	Privacy policy, terms, and conditions of the platform, details of services provided, and details about the organization.
Fido Sociedade de Empréstimo entre Pessoas S.A.	n/a.
Emcash Serviços Financeiros Sociedade de Empréstimo entre Pessoas S.A.	Details about the organization.
Mova SEP S.A.	Privacy policy, terms, and conditions of the platform, details about the peer-to-peer lending operations performed, cybersecurity policy, details of services provided, details about the organization.
Nexoos SEP S.A.	Cybersecurity policy, privacy policy, financial reports, details of services provided, details about the organization.
Bulla SEP S.A.	Privacy policy, use terms of the platform, details of investments received by the platform, information about rating for the platform, details of services provided, details about the organization.
QI SEP S.A.	n/a.

APPENDIX G – TABLE CONTAINING THE ENTITIES IDENTIFIED IN THE DOCUMENTS COLLECTED FROM THE SCD AND SEP INSTITUTIONAL WEBSITES

ENTITY CODE	ENTITY NAME (CODE ORIGINAL LANGUAGE	ENTITY NAME (TRANSLATED)
ENT-INS3 (Institutional entities - Group 3)	Prestadores de serviços	Service providers
	Bureaus de crédito cadastrais e/ou restritivos	Registered and/or restrictive credit bureaus
	Empresas terceirizadas especializadas	Specialized outsourced companies
	Sistema Financeiro Nacional (SFN)	National Financial System (SFN)
	Sistema de Pagamentos Brasileiro (SPB)	Brazilian Payment System (SPB)
	Banco Central do Brasil (BCB)	Central Bank of Brazil (BCB)
	Conglomerado financeiro	Financial conglomerate
	ABCD - Associação Brasileira de Crédito Digital	ABCD - Brazilian Association of Digital Credit
	PESSOA JURÍDICA	Non-legal person
	Conselho Monetário Nacional (CMN)	National Monetary Council (CMN)
	Tomador da dívida	Borrower
	CIP (Câmara Interbancária de Pagamentos)	CIP (Interbank Payments Chamber)
	Amazon	Amazon
	Clientes	Customers
	Grandes camaras de liquidacao do pais	Large liquidation chambers of the country
	Correspondente Bancário	Banking correspondent
	Prestadores de serviço de tecnologia	Technology Service Providers
	ANPD	ANPD - National Data Protection Authority
	WhatsApp	WhatsApp
	GAFI/FATF	GAFI / FATF - Financial Action Task Force
	REGULADORES/FISCALIZADORES	REGULATORS / SUPERVISORS
	UNIDADE DE INTELIGÊNCIA FINANCEIRA (UIF)	FINANCIAL INTELLIGENCE UNIT (UIF)
	Empresa de auditoria especializada independente	Independent specialized audit firm
	Instituto Brasileiro de Governança Corporativa	Brazilian Institute of Corporate Governance
	Facebook	Facebook
	Google	Google
	Hotjar	Hotjar
	Taboola	Taboola
	Quality Unit	Quality Unit
	Zanox	Zanox
	Twitter	Twitter
	PostAfliatePro	PostAfliatePro
	Salesforce	Salesforce
	Fintech	Fintech

	Gertec	Gertec
	Pax	Pax
	Cisco	Cisco
	UniFi Controller	UniFi Controller
	Empresas de micro, médio e pequeno porte	Micro, medium and small companies
	Fornecedor responsável pela gestão da segurança	Supplier responsible for security management
	Serasa Experian	Serasa Experian
	Boa Vista	Boa Vista
	QCERTIFICA	QCERTIFICA
	CRDC	CRDC
	Comissão de Valores Mobiliários (CVM)	Securities and Exchange Commission of Brazil (CVM)
	ProScore	ProScore
	TW Solutions	TW Solutions
	Mundivox	Mundivox
	Conselho de Controle de Atividades Financeiras(COAF)	Financial Activities Control Board (COAF)
	Sociedade de Crédito Direto	Direct Credit Company
	RBM WEB – SISTEMAS INTELIGENTES	RBM WEB – SISTEMAS INTELIGENTES
	CLEAR SALE S/A	CLEAR SALE S/A
	Iugu Serviços na Internet S/A,	Iugu Serviços na Internet S/A,
	Sociedade de Empréstimo entre Pessoas	Peer-to-Peer Lending Company
E+A59:A122NT-IS3 (Information System entities - Group 3)	API para integração	Integration API
	App mobile	App mobile
	Páginas de sites ou APPs	Websites or APPs
	Cookies	Cookies
	Tags	Tags
	Scripts	Scripts
	Webviews	Webviews
	Iframes	Iframes
	Controle de IP	IP Constrol
	SCR BACEN	SCR BACEN
	Banco de dados	Database
	Sistema de Pagamento Instantâneo (SPI)	Instant Payment System (SPI)
	Cartão magnético múltiplo	Multiple Magnetic cards
	Terminais de autoatendimento	Automated teller machine
	Dados de geolocalização	Geolocation data
	Pixel tags	Pixel tags
	Beacons	Beacons
	Local shared objects	Local shared objects
	Dados biométricos	Biometric Data
	Cookies de Autenticação	Authentication cookies

Cookies de Segurança:	Security Cookies
Cookies de Pesquisa, Análise e Desempenho	Research, Analysis and performance cookies
Cookies de Propaganda	Advertising Cookies
Métodos padrões de mercado para criptografar os dados	Industry standard methods for encrypting data
E-mails	E-mails
Webhooks	Webhooks
Plataforma eletrônica	Electronic platform
Criptografia	Encryption
Algoritmo de encriptação ES512	ES512 encryption algorithm
JSON	JSON
CNAB	CNAB
Token de segurança	Security Token
Fontes de dados públicas e privadas	Public and private data sources
Capacidade de processamento	Processing capacity
API de análise de crédito	Credit analysis API
Algoritmo de rating	Rating Algorithm
Protocolo HTTPS	HTTPS Protocol
Assinatura assimétrica	Asymmetric signature
Website	Website
Google Play Store	Google Play Store
Apple App Store	Apple App Store
Tecnologias de monitoramento	Monitoring Technologies
PIX	PIX
PDV Móvel	Mobile POS
Sistema operacional	Operating system
Software de proteção antivírus	Antivirus protection software
Cartão de crédito	Credit Card
Sistema RISKDRIVER	RISKDRIVER System
Sistema LINE	LINE system
Transação em POS e TEF/MOBILE	Transaction in POS and TEF/MOBILE
Chip 3G	3G Chip
NFC	NFC
Android	Android
iOS	iOS
Bluetooth 4.0	Bluetooth 4.1
SDK	SDK
Hardware EMV certified	Hardware EMV certified
OAuth 2.0 authorization framework	OAuth 2.0 authorization framework
Identifcador do dispositivo	Device ID
Endereço IP	IP Address
Identifcador para publicidade (IDFA)	Advertising identifier (IDFA)
PHP	PHP
Load Balancing	Load Balancing

	Notifcações (push)	Notifications (push)
	Aplicativos de mensagens	Messaging apps
	Peer-to-peer lending (P2P)	Peer-to-peer lending (P2P)
	Malware	Malware
	Assinatura Eletrônica	Electronic signature
	BOT	BOT
	Inteligência Artifcial	Artificial intelligence
	Link de Pagamento	Payment Link
	Pinpad	Pinpad
	Deeplink (intent)	Deeplink (intent)
	Sandbox	Sandbox
	Ferramenta Auth2	Auth2 Tool
	Backup	Backup
	Protocolo OAuth 2.0	OAuth 2.0 protocol
	VPN	VPN - Virtual Private Network
	Tecnologias digitais	Digital Technologies
	Código ID (IMEI) do aparelho mobile	ID code (IMEI) of the mobile device
	Java	Java (programming language)
	INTELIGÊNCIA DE DADOS	Data Intelligence
	Advanced Analytics	Advanced Analytics
	Machine learning	Machine learning
	SAS	SAS
	R	R (programming language)
	Python	Python (programming language)
	Inteligência de crédito	Credit intelligence
	ERP	ERP
	BR Codes	BR Codes
	DICT	DICT
	Headers de autenticação assinados com ECDSA	Authentication headers signed with ECDSA
	ECDSA	ECDSA (algorithm)
	Bitcoin	Bitcoin
	Ethereum	Ethereum
	Open banking	Open banking
	FIREWALL	Firewall
	META DADOS	Metadata
	ASSINATURA DIGITAL	Digital Signature
	PABX	PABX
	Capturas de assinaturas	Signature capture software
	“Robôs” de investimento	Investment "Robots"
	Certificado SSL	SSL certificate
	Cloud Computing	Cloud Computing
ENT-REG3 (Regulatory Entities - Group 3)	Normativas do BACEN	BCB regulations
	Lei Geral de Proteção de Dados (LGPD)	General Data Protection Regulation (GDPR)

	Artigo 13 do Decreto nº 8.771/2016	Article 13 of Decree No. 8771/2016
	Lei Complementar nº 166/2019	Complementary Law No. 166/2019
	LEI Nº 12.414/2011	Law No. 12.414/2011
	Resolução 4.656/2018	Resolution No. 4656/2018
	Resolução 3.919/2010	Resolution No 3919/2010
	Resolução nº 4.720/19	Resolution No. 4720/19
	Circular nº 3.959/19 do BACEN	Circular No. 3,959/19 of BCB
	Resolução 4.567/17 do Bacen	BCB Resolution No. 4567/17
	Resolução BACEN nº 4.745	BCB Resolution No. 4745
	Resolução BACEN nº 4.557	BCB Resolution No. 4557
	Resolução Banco Central nº 4.658	BCB Resolution No. 4658
	Padrão de Segurança de Dados da Indústria de Cartões de Pagamento	Payment Card Industry Data Security Standard
	Resolução 3.658 do BACEN	BCB Resolution No. 3658
	Resolução CMN nº 4.893/2021	CMN Resolution No. 4.893/2021
	Resolução BCB nº 85/2021	BCB Resolution No. 85/2021
	Circular nº 3.909/2018	Circular No. 3909/2018
	Decreto n. 8.771/2016	Decree No. 8.771/2016
	Resolução 4.553/2007	Resolution No. 4553/2007
	12.965 de 2014 (Marco Civil da Internet)	Law 12.965 of 2014 (Internet Civil Mark)
	Resolução CMN 4.606/17	CMN Resolution No. 4.606/17
	Resolução do Conselho Monetário Nacional (CMN) nº 3.954	CMN Resolution No. 3.954
	Know Your Client (KYC)	Know Your Client (KYC)
	MP 2.200-2 de 2001	MP 2200-2 of 2001
ENT-DOC3 (Documental entities - Group 3)	Politica de Privacidade	Privacy Policy
	Termo de confidencialidade	Term of confidentiality
	Documentos eletrônicos	Electronic documents
	Código de Ética	Code of ethics
	Boleto registrado em PDF	Bank Slip registered in PDF
	Score de bureau fornecido pelo parceiro	Bureau score provided by the partner
	POLÍTICA DE SEGURANÇA CIBERNÉTICA	Cyber Security Policy
	POLÍTICA DE SEGURANÇA DA INFORMAÇÃO	Information Security Policy
	TERMOS E CONDIÇÕES DE USO	Terms and Conditions of use
	POLÍTICA DE PREVENÇÃO A LAVAGEM DE DINHEIRO E COMBATE AO FINANCIAMENTO DO TERRORISMO	Policy For Prevention Of Money Laundering And Fighting The Financing Of Terrorism
	Demonstrações financeiras	Financial Reports
	Modelos de crédito próprios	Proprietary Credit Models
	PLANO DE AÇÃO E DE RESPOSTA A INCIDENTES	Action and Incident Response Plan
	Certifcação compatível com o PCI-DSS	PCI-DSS Compliant Certification
	Política de Cookies	Cookies Policy

	Política de Gerenciamento de Risco de Crédito	Credit Risk Management Policy
	Política de Gerenciamento de Risco Operacional	Operational Risk Management Policy
	Novo Modelo das Três Linhas do IIA	The IIA's New Three-Line Model
	Relatório de Auditoria Independente	Independent Audit Report
	Demonstrações contábeis	Accounting statements
	Rating	Rating reports
	Índice de Inadimplência	Default Rate
	Log do Sistema	System Log
ENT-HU3 (Human entities - Group 3)	Usuário	User
	Pessoas previamente autorizadas	Previously authorized persons
	PESSOA FÍSICA	Non-Legal person
	Sacador avalista	Guarantor
	Tomador da dívida	Borrower
	Clientes	Customers
	Colaboradores	Employees
	COMITÊ DE GESTÃO DE RISCO	Risk Management Committee
	Diretor responsável pela política de segurança cibernética	Director responsible for cybersecurity policy
	Encarregado de Proteção de Dados	Data Protection Officer
	Auditor independente	Independent auditor
	CREDOR	Creditors
	Acionistas	Shareholders
ENT-SERV2 (Service Entities - Group 2)	Conta Digital	Digital Account
	Produtos de crédito	Credit products
	Crédito consignado	Payroll loans
	Cofres inteligentes	Smart safes
	Seguros	Insurance
	BaaS – Bank as a Service	BaaS – Bank as a Service
	Gestão de clientes	Client management
	Emissão de dívidas e estruturação de ativos	Debt issuance and asset structuring
	Cobrança	Collection
	Coleta, uso, armazenamento, tratamento, proteção, compartilhamento e exclusão de dados	Data collection, use, storage, treatment, protection, sharing, and deletion
	Análise de crédito	Credit analysis
	Serviço de registro/emissão de boletos	Registration service / payment slips
	Serviço de Tecnologia da Informação (TI)	Information Technology (IT) Service
	Capital de giro	Working capital
	Serviços em nuvem	Cloud services
	Pagamentos on-line	Online payments
	Processamento de dados	Data processing
	Armazenamento de dados	Data storage
	Infraestrutura de redes	Network infrastructure

	Suporte tecnológico	Technological support
	3rd party risk and anti-fraud solutions	3rd party risk and anti-fraud solutions
	Amazon AWS	Amazon AWS
	TRANSFERÊNCIA INTERNACIONAL DE DADOS	International Data Transfer
	Hospedagem dos Sites	Website Hosting
	Tratamento de dados	Data processing
	Ambiente de Sandbox	Sandbox environment
	Serviços terceirizados	Third-party services
	Emissão de moeda eletrônica	e-currency issuance
	Gestão de conta de pagamento pré-paga	Prepaid Payment Account Management
	Operação de Securitização	Securitization Operation
ENT-OTHER3 (Other entities identified in the collected data - Group 3)	Coronavírus (COVID-19)	Coronavirus (COVID-19)