



UNIVERSIDADE CATÓLICA PORTUGUESA

“Harassment and Offenses to Conversational
Agents - the case of BIA, the Feminist Chatbot”

Joana Moreira Ferreira

Católica Porto Business School

July 2022



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Agents - the case of BIA, the Feminist Chatbot”

Master's Final Assignment

Submitted to Universidade Católica Portuguesa
to fulfill the requirements for the degree of MSc in Marketing

by

Joana Moreira Ferreira

Thesis supervision

Prof. Dra. Susana Costa e Silva | Prof. Dra. Carla Martins

Católica Porto Business School

July 2022

Acknowledgement

I would like to dedicate this dissertation to all of those who helped and guided me through its development and during my master's.

First of all, I would like to express my gratitude to Prof. Dra. Susana Costa e Silva and Prof. Dra. Carla Martins, who both were always present since the beginning of my dissertation and whose guidance was central and decisive for the success of my thesis.

Inevitably, I could not forget to thank all the people from Bradesco who participated in my study and took some of their time to conduct an interview, as well as all the other interviewees.

I would also like to thank my family and boyfriend for all the support and unconditional love, because without them it wouldn't be possible to get it, and for that I am eternally grateful.

Finally, I have to thank my friends for always being present, and for all the support and concern since the beginning; and, of course, Já T'Explico, that was a huge part of my academic path and that brought me so much strength, values and the development of new capabilities.

I cannot express all the gratitude I have towards all of you. Thank you.

Abstract and Keywords

Purpose: This investigation aims to understand if chatbots can effectively induce pro-social attitudes and behaviors in users, throughout the customer journey in order to effectively help to educate the society as a whole.

Methodology/Approach: This case study is about the specific case of BIA, a chatbot from Bradesco, with almost 1 million clients. A sample of 10 Brazilian people participated in this study. Thus, quantitative data was collected through interviews.

Findings: The results showed that, being used in many different areas, chatbots can actually be a source of inspiration and public opinion making, working as a digital influencer. In fact, it is possible to induce pro-social attitudes and behaviors in users, mainly on the pre-purchase and post-purchase phases of the customer journey. Thus, it was possible to conclude that it is possible to educate the population through a robot and that the population, in general, is available to learn in this way.

Originality/Value: We believe that this study adds a lot of value and has a huge amount of originality since, in fact, and to my knowledge, we are the first one deeply studying the social dimension of a chatbot, which is not, from the outset, expected. In fact, and by studying the case of BIA, this study was able to conclude that, as the process unfolds, Bradesco gained notion that BIA could effectively be a digital influencer, with the power to educate the (Brazilian) population on issues, and in a first phase, essentially related to harassment, bullying and which always end up intertwining with the empowerment of women.

Keywords: Artificial Intelligence, Chatbot, Conversational Agent, Agent Abuse, Services Management, Customer Journey, Digital Influencer.

Number of words: 10.105

Sumário Executivo

Propósito: Esta investigação pretende perceber se os chatbots podem efetivamente induzir atitudes e comportamentos pró-sociais nos utilizadores, ao longo da jornada do cliente, de forma a contribuir efetivamente para a educação da sociedade como um todo.

Metodologia: Este estudo de caso trata do caso específico da BIA, um chatbot da Bradesco, com quase 1 milhão de clientes. A amostra deste estudo foram 10 brasileiras/os. Assim, os dados quantitativos foram coletados através de entrevistas.

Resultados: Os resultados mostraram que, sendo utilizados nas mais diversas áreas, os chatbots podem realmente ser uma fonte de inspiração e formação de opinião pública, funcionando quase como influenciadores digitais. De fato, é possível induzir atitudes e comportamentos pró-sociais nos usuários, principalmente nas fases de pré e pós-compra da jornada do cliente. Assim, foi possível concluir que é possível educar a população através de um robô e que a população, em geral, está disponível para aprender desta forma.

Originalidade/Valor: Acreditamos que este estudo agrega muito valor e é bastante original na medida em que, de fato, e para nosso conhecimento, somos os primeiros a estudar mais ao pormenor a dimensão social de um chatbot, o que não é, à partida, esperado. De fato, e ao estudar o caso da BIA, este estudo pôde concluir que, à medida que o processo se desenvolve, a Bradesco ganhou noção de que a BIA poderia efetivamente ser uma influenciadora digital, com poder de educar a população (brasileira) sobre várias questões e, numa primeira fase, essencialmente relacionadas com o assédio, o bullying e, inevitavelmente, sempre relacionadas com o empoderamento feminino.

Palavras-chave: Inteligência Artificial, Chatbot, Agente Conversacional, Abuso de Agentes, Gestão de Serviços, Jornada do Cliente, Influenciador Digital.

Número de palavras: 10.105

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Introduction

The principal objective of this study is to understand if chatbots can effectively induce pro-social attitudes and behaviors in users, throughout the customer journey in order to effectively help to educate the society as a whole, regarding a case study in which we realized how the chatbot behaved, confirming and verifying this social function. This point will be explored further on in a supplementary way to the commercial function that, indeed, was already expected that a conversational agent would have.

Chatbots have been used in different domains. Thus, it is possible to use a chatbot regarding education, customer service, website help, and for entertainment (Shawar & Atwell, 2007). In today's society, chatbots are increasingly used. Consultants advocate that, with chatbots, it is possible to optimize service and create new sales channels. Thus, big companies such as Rock in Rio, Coca-Cola, Facebook, and many others, already take advantage of chatbots as a tool to take their business further. From a management point of view, companies also have concern in trying to anticipate the reaction of customers to the use of chatbots to ensure that they invest in technology that will pay off. On the other hand, and regarding a more academic point of view, most of the studies that have been conducted in the area of chatbots are not empirical studies. Not only that, but this is a recent topic that has not been fully explained and explored, despite being marketed. Until today, and to my knowledge, no one has ever studied chatbots in banking in all its aspects, including the social domain. Thus, this specific investigation is a case study with a major preoccupation on working with a real chatbot that already exists in the market, and effectively interview its users and managers, who were involved in its development, in order to ask them related questions about the development process, about its launch and also subsequent fine-tuning of the purpose of the chatbot. Taking into account the importance for management and for the academy, then, what we propose to do in this work is to answer the following research question: **“In which way may a chatbot have other functions besides commercial through the customer journey?”**

In the following chapters, the reader will be able to find, first of all, a complete literature review that covers the following topics: chatbots as conversational agents, chatbots in the customer journey, verbal abuse in interaction with conversational agents and the social role of a chatbot. The next chapter is the methodology and, posteriorly, there is a chapter dedicated to the context analysis; Before the discussion chapter, where all the main findings will be exposed,

a data analysis will be presented. To sum up all the work, the final chapter is dedicated to the conclusion, limitations and further investigations. At the end of this document, besides the references, it will be possible to find some attachments with information extracted from interviews, in order to give, to the reader, more complete and organized information and context.

1. Literature Review and Suggested Model

1.1 Artificial Intelligence and Chatbots

Back in time, when there were no computing systems, it was possible to distinguish any person from any non-person only by their ability to engage in a conversation. Nowadays, this is not a reality anymore, as we “have hybrids operating between person and non-persons with whom we can talk in ordinary language.” (Colby, 1999, pp. 6). Nowadays, people, and more specifically consumers, are constantly connected to each other and, most of the time, they are online (Stephen, 2017). In fact, social media is a way for those “voices” to speak up. Although, in reality, those may all not be real human voices, since Artificial Intelligence is the new reality (Thomas & Fowler, 2020). In fact, a recent study shows that 30% of user-generated content on Twitter is created by bots, pretending to be humans (Liu, 2019). “AI refers to the broad idea that computers, through the use of software and algorithms, can think and perform tasks like humans” (Kumar *et al.*, 2019, pp. 1-2). Hence, AI is capable of “learning, feeling and thinking” without any human interface (Rana *et al.*, 2021, pp. 2). According to (P K, 2021, pp. 65), “the history of Artificial Intelligence begins with some fantasies created by philosophers and fiction writers”, who brought up this concept to evidence the importance of human beings. For instance, the philosopher Descartes describes artificial intelligence as “mechanical man”. A study from Adobe (2018) shows that over 75% of consumers have already used any form of AI, which indicated that AI is now more a “necessity to be on the cutting edge”, then an option (Rodgers, 2021, pp. 1), since its presence extends to various aspects of today's society. Furthermore, AI is becoming increasingly embedded, in particular in diverse as customer service (Krämer *et al.*, 2017). Through history, one of the biggest steps in AI was the DSRPAI project, in which ELIZA was a computer program created with a natural language processing tool programmed to chat and have conversations with humans. This and so many other successful stories are the reason for many fundings received to keep and improve AI research, becoming an important component and helping in many digital areas. One outcome of AI are the Digital Assistants, such as Siri, Alexa, and others, and the Chatbots. According to Rana *et al.* (2021), there are many different types of AI, including: Augmented Reality, Virtual Reality, Mixed Reality, Voice Bot, Chatbots, and others.

Chatbots as Conversational Agents

A chatbot is a “software system” that is able to interact and, also, chat with a human in ordinary language (Colby, 1999), such as Portuguese, English, Italian, as many others. The need for chatbots has become more serious with the intention of using it for the purpose of communication and the desire of “their makers to provide natural language interfaces” (Wilks, 1999, pp. 8). Nevertheless, chatbots were created in the 1960’s (Schuetzler *et al.*, 2021) and, in the beginning, chatbots weren’t neither sophisticated nor very intelligent. Over time, chatbots started being programmed to learn from previous interactions and conversations with users (Molnár & Szüts, 2018). Nowadays, and according to Shawar and Atwell, there are different measurement metrics created in order to evaluate the system of a chatbot. As mentioned before, ELIZA was, indeed, the first attempt to build a chatbot based on keyword matching, in the 60’s, by Joseph Weizenbaum. ELIZA was a trigger for the development of many other chatbots. Some chatbots may also be agents to generate public opinion or even in approaching sources of inspiration with a a strong meaning, since they have been used in different domains. Thus, it is possible to use a chatbot for education purposes, customer service, website help, or even for entertainment (Shawar & Atwell, 2007), being able to even replace human workers on their own jobs, which includes “online customer service agents and educators” (Io & Lee, 2017). As claimed by many different authors, chatbots may be known by many different terms, such as virtual agent, machine conversation system, dialogue system or even chatterbot (Suhel *et al.*, 2020)

Over time, Chatbots have become even more intelligent (Io & Lee, 2017, pp. 1). Therefore, it has become easier to understand and create a relationship with the human users through a chatbot. Furthermore, these agents are a great tool to interact with users, in a fast and more eficiente way (Dahiya, 2017). Authenticity is also used as “currency of realness” (Genz, 2016, pp. 545), since robots can seem so real and human that users may feel related and connected to them and even share “insecurities, ambitions and vulnerabilities” (Drenten & Brooks, 2020, pp. 3). According to Smutny & Schreiberova (2020, pp. 4), as instant messaging becomes more and more attractive, “chatbots and pedagogical agents have motivated educators to integrate messaging tools in teaching and learning”. Even though chatbots do not make strong and rich chatting partners, there is a visible improvement in terms of its performance, according to a study of (Coniam, 2014). Nowadays, there are many options for chatbots, since they are not associated with a single category anymore. Smutny and Schreiberova proposed

two kinds of classifications - by input or by messaging channels (2020). Regarding input, chatbots may be button-based, keyword recognition-based, contextual and voice-enabled. Regarding the classifications by messaging channels, there are standalone applications (desktop or mobile), web-based service (integrated on the web or individual) and integrated (instant messaging apps or communication and collaboration platforms). When interacting with a chatbot, especially in messaging apps, people tend to expect to always get an appropriate answer. However, that is far from today's reality. For example, Regarding Facebook Messenger Chatbot, Weinberg (2017) reports a percentage of 70% of failed interaction, concluding that AI is not totally ready and explored at its maximum potential, since it is not possible to always understand what users are saying and answer correctly. Analytic Hierarchy Process is a quality method recommended by Radziwill and Benton (2017), in order to evaluate the quality of chatbots and, consequently, their intelligence, concluding that the main quality attributes include efficiency, satisfaction and effectiveness. "Although web-based chatbots have been available for several decades, a big step forward comes from chatbots moving to an instant messaging environment" (Smutny & Schreiberova, 2020, pp. 14), since people tend to download more of these types of apps without a single-purpose. The authors also consider that to successfully maintain a dialogue between the chatbot and the human user, it is important for the chatbot to match the following personalities critical: "conversational style, tone and attitude" (pp. 15). This way, a chatbot with more personality will be able to create a more enjoyable and immersive conversation with the human, who will feel more engaged. Chatbots may also be used as a "useful tool in education" (Shawar & Atwell, 2007, pp. 40) According to Colby (1999, pp. 6) "we need not take human-human conversation as the gold standard for conversational exchanges. If one had a perfect simulation of a human conversant, then it would be human-human conversation and not human computer conversation with its sometimes odd but pertinent properties". Recently, there are a lot of studies that explored the application of chatbots in many different areas, such as education (Ferrell & Ferrell, 2020), business, and public-service (Chin *et al.*, 2020), tourism and health (Calvaresi *et al.*, 2021). However, conversational agents, more specifically chatbots, have not been fully explored and studied in the harassment field.

Chatbots in the Customer Journey

AI, and more specifically conversational agents, may have an important role in improving customer journey (Malodia *et al.*, 2021), since a blending between marketing services and AI should simplify the customer journey and help predict the behavior of consumers. This will be reflected in the customer, since the main objective of this blending is to cause “customer retention and loyalty caused by the wholesome experience gathered during the purchase process” (Rana *et al.*, 2021, pp. 2). By choosing chatbots as its primary service of choice, AI reaches a whole new “level” for the consumer (Libai *et al.*, 2022; Huang & Rust, 2020), since the presence of chatbots in the retail sector brings a positive influence on external values of the customer experience (Rai, 2020). Regarding the customer journey, it will be divided into three different phases: pre-purchase, purchase and post-purchase. Hence, it is possible to relate the role of a chatbot during all those stages. Rana *et al* (2021) presented a framework of AI embraced customer journey:

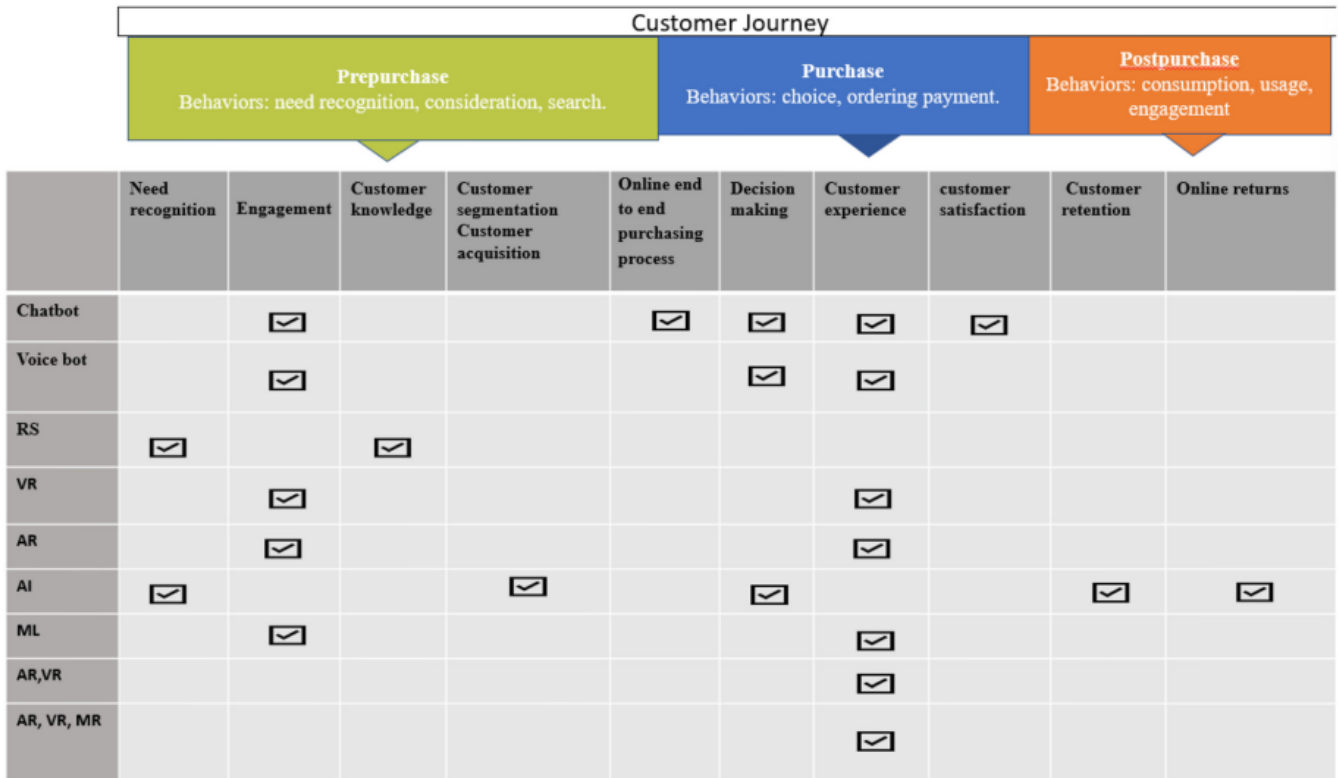


Figure 1. Framework of AI embraced customer journey (Rana *et al.*, 2021)

Thus, it is possible to conclude that chatbots essentially intervene in the purchase phase of the customer journey: “online end to end purchasing process”, “decision making”, “customer experience” and “customer satisfaction”. Another touchpoint is on the pre-purchase, on the “engagement”.

According to Bonchek and France (2014, pp. 2), “prospects don’t come in the top and out the bottom, but move through an ongoing set of touchpoints before, during, and after a purchase”. In fact, these 5 touch points previously highlighted have a major importance regarding the role of a chatbot through the customer journey. Venkatesan *et al.* (2017) states that engagement is a priority for practitioners, gaining a lot of attention from academics. Not only that but, regarding its importance, customer engagement is now a imperative strategy for many firms (Venkatesan *et al.*, 2017). Some other authors define customer engagement as the set of all interactions of customers with a specific company besides the customers’ transaction behavior (Van Doorn *et al.*, 2010). Regarding “online end to end purchasing process”, in fact, and according to Yen and Ching (2020), chatbots may be very helpful in solving real time problems and, this way, help customers with their purchasing process. Decision making is

another fulcral touch point whose importance is reflected in how social influence affects the journey. Furthermore, new technologies, including AI and chatbots, have significantly altered how consumers' purchases may be influenced by others (Hamilton *et al.*, 2020). Customer experience is, according to Lemon *et al.* (2016), critical for firms: “Customers now interact with firms through myriad touch points in multiple channels and media, and customer experiences are more social in nature” (Lemon *et al.*, 2016, pp. 69-96). In fact, according to a study by Accenture, improving and bet on a pleasure and positive customer experience received the most number one rankings regarding their priorities in a one year period. Customer experience is directly related to customer satisfaction, since service quality is directly related to customer satisfaction. Thus, the more engaged the client is, more likely they are to have a high degree of satisfaction (Lemon *et al.*, 2016). Research shows that the level of customer satisfaction is directly influenced by the degree of customer co-creation behaviors (Grissmann and Stokburger-Sauer, 2012; Hunt *et al.*, 2012). By adopting chatbots in e-retailing, the influence on “extrinsic values of customer experience” will tend to be positive (Rai, 2020). An important and possible decisive factor for a customer is its level of trust. As a matter of fact, Yen and Chiang (2020) state that there is a positive relationship between the level of trust in chatbots, in sellers and, also, the purchase intention from a customer’s perspectives and that chatbots are even more helpful, since they have the capability of problem solving in real-time. Regarding the customer journey, chatbots can effectively help initiate online interactions, by engaging customers with the first brand image (Kull *et al.*, 2021).

However, and regardless of the importance of chatbots on the customer's journey, there is an aspect of the study of chatbots that has not been studied before. This is related to harassment and how it manifests itself differently in relation to chatbots, which is going to be explored more deeply in the next chapter.

Verbal Abuse in interaction with Conversational Agents

According to the Computer-Are-Social-Actor (CASA) paradigm (Nass *et al.*, 1994), people tend to respond to and interact with a computer system similarly to how they interact with people (Reeves & Nass, 1996), namely in regards to inappropriate social behavior. Even though this topic has not been fully explored, there are some studies that prove the verbal abuse

towards Conversational Agents. According to some empirical studies, (De Angeli & Brahnam, 2008; Veletsianos *et al.*, 2008), it is estimated that about 10 to 44% of the interactions with Conversational Agents reflect “abusive language, including sexually explicit expressions” (Chin *et al.*, 2020, pp. 1). Nonetheless, people tend to devalue this type of threats and harassment, since chatbots are not human beings and do not have feelings and emotions, not even when verbally abused (Brahnam *et al.*, 2005), even regarding the fact that this type of attitude may be transferred to “real-life social relationships” (Chin *et al.*, 2020, pp. 1), if not properly addressed. Thus, without any type of restrictions, this type of behavior may be reflected in a society that considers abuse and harassment as normal and acceptable. When debating questions related to abusive behaviors regarding conversational agents, there may be different motivations of users. De Angeli and Brahnam’s (2006) states that agent gender may play a role in this topic. As a matter of fact, there is evidence that gender “sets up expectations that have an impact on user experiences with agents” (Brahnam & De Angeli, 2012, pp. 1), since female agents are more likely to suffer abuse than male or gender-neutral agents. On the other hand, whenever the chatbot pictures "non-human life forms as humans" (Veletsianos *et al.*, 2008), it may induce varied responses from users, from negative to strong (De Angeli *et al.*, 2001). Another reason for agents abuse, may be that Internet lowers human inhibitions (Hudson & Bruckman, 2002; Suler, 2004), and, consequently, enables not only the level of intimacy, but also the level of aggressiveness (Veletsianos *et al.*, 2008).

Some authors explored the way chatbots answered abusive messages from users. According to Brahnam (2005) chatbots mostly respond with a defensive approach. However, in some cases, conversational agents use humor and counter attacking. Regarding sexual harassment, it has been proved that some AI systems, such as Siri, try to, in a first approach, avoid those topics (Curry & Rieser, 2018). In these specific cases, the avoidance strategy is also a very well commonly used tactic, even though it is not well seen by the users. Chin *et al.* (2020) examined whether conversational agents' response styles influence emotions like anger and guilt – that are known to influence peoples' aggressive behaviors. With that purpose, they tested consumer responses under varying abuse types (insult, threat, swearing) and three response styles (avoidance, empathy, counterattacking). The results show that the agent's response style has a significant effect on user emotions, in a way that participants were less angry and more guilty with the empathy agent than the other two agents.

Social Role of a Chatbot

“The increasing need to approximate conversational interaction styles raises expectations for chatbots to present social behaviors that are habitual in human–human communication” (Chaves & Gerosa, 2020, pp. 729-758).

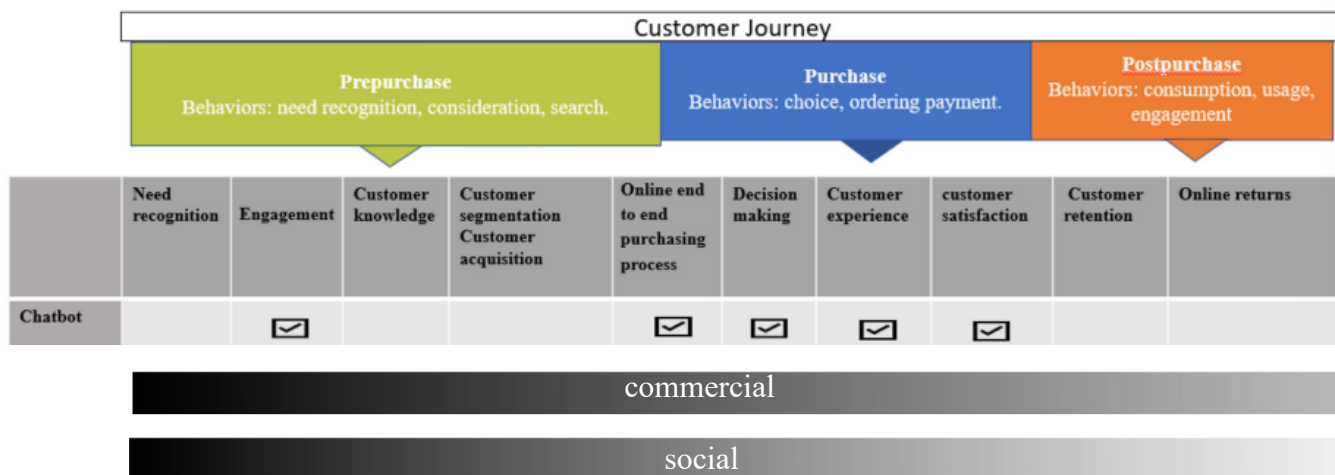


Figure 2. Social and Commercial Dimensions in the Zoom in of the Framework of AI embraced Customer Journey (Rana *et al.*, 2021)

Thus, it is possible to analyze the commercial role of the chatbot through the customer journey, in parallel as the social role. As represented in the previous figure, both social and commercial have more weight regarding a pre-purchase phase rather than a post-purchase phase, demonstrating the importance and relevance of using chatbots at this stage, where the purchase is not finished: the gradation from black to gray symbolizes the presence of chatbots throughout the customer journey. Nevertheless, the commercial dimension of a chatbot has more prominence and impact during the purchase phase than the social dimension.

1.2 Suggested Model

In this case study, the proposed model is that a chatbot, in addition to its commercial dimension, can have other functions, derived from its attributes, such as its ability to "talk" and interact with users. This way, this study will explore and conclude which other(s) function(s) a chatbot has, that have not been already explored, regarding its attributes.

2. Research Methodology

The objective of this investigation is to mainly understand if chatbots can effectively induce pro-social attitudes and behaviors in users, in both the pre-purchase and post-purchase stages, in order to effectively help to educate the society as a whole. That is, we intend to analyze if the touch points where the chatbot is present with a commercial role, also have any additional dimension, in particular a social dimension, where it is possible to complement its action. Thus, in this context, the following research question was prepared: “In which way may a chatbot have other functions besides commercial through the customer journey?”. In order to provide an answer to the previously presented research question, the study will be conducted by qualitative research, using interviews for data collection previously prepared. Thus, this case study is regarding a bank in order to understand how it operates with the chatbot. This will be an exploratory study. Even if some authors defend that quantitative research is more objective and rigorous, case studies may also represent an important research track in organizational science (Patton & Appelbaum, 2003), beginning with a Research Question, in order to present the case, as the present study. The choice of this case study was due to the fact that there are preferential contacts with the bank in question, which, being a large bank, already has a chatbot, implemented in 2016, that masters the language in which the interviews could be carried out.

Any research method has a really high level of importance. Qualitative methodology has the major concern of understanding of meaning (Wilson & Sharples, 2015). Not only that, but qualitative research is also attacked for biased, small-scale, anecdotal, lacking rigor. On the other hand, “when it is carried out properly it is unbiased, in-depth, valid, reliable, credible, and rigorous” (Anderson, 2010, pp. 2). This methodology has the main objective to work as an extension to understand the problem proposed.

2.2 Research Method

The interviews were structured in order to understand the relation and opening of the Brazilian population with chatbots in general and, in specific, with BIA. Not only that, but also to understand if chatbots could actually have this social role, beyond the commercial role, regarding the different stages of the customer journey. This way, it was possible to find a pattern of thought and opinion through the answers given by the interviewees, regarding

chatbots and its potential social role. After collecting the data and identifying patterns in the responses, an analysis will be performed. In order to facilitate the data work, an authorization was requested from all participants to record the interviews, which were later transcribed and worked on in excel, through the creation of categories and subcategories that would highlight the patterns of respondents' responses. The questions asked throughout the interviews were adapted depending if the participant was a Bradesco Worker (B) or a Former/Current Bradesco Client that already has or doesn't have previous contact with BIA (C and N) - *Table 2*. In either case, it was evaluated the experience/contact with AI and chatbots, and more specifically with BIA. While interviewing the three workers of Bradesco, more detailed information was given about the company - Bradesco - and about BIA's campaign, which will be exposed in a later chapter of this study.

Justification of the Case Study

The election of Bradesco's chatbot, BIA, for this case study was induced by many different reasons. First of all, this is a very representative case: Bradesco has almost 1 million clients and BIA has exceeded 1.3 billion interactions since its debut, according to *Digital Channels*. With a high level of representativeness, this case study will be able to embrace a much generic and global approach. Not only that, but it has also been on the market for a long time, since BIA was officially released in 2016, building trust and proximity to the client in an increasing way. Bradesco has also been in the market since 1943, being, at the moment, a brand full of recognition and trust for its clients. Furthermore, it is also possible to consider its ease of market, promising a high economy with a higher level of attraction. To my knowledge, the positioning of Bradesco regarding this social approach is justified by the brand being already connected to causes of female empowerment. General public will give added recognition to the bank, since in a point of view of its current users and clients, it is already expected to happen.

2.3 Data sources and collection

Qualitative data dominate exploratory research (Eisenhardt & Graebner, 2007). Thus, some interviews were conducted. The study sample included Bradesco professionals and workers and some of their clients or Brazilians citizens, with a total of 10 participants.

B1	Bradesco Asset Management	Brazilian	Works with BIA
B2	Bradesco Marketing and Social Media Manager	Brazilian	Works with BIA
B3	Bradesco Legal Director	Brazilian	Works with BIA
C1	Bradesco Client	Brazilian	Already interacted with BIA
C2	Bradesco Client	Brazilian	Already interacted with BIA
C3	Former Bradesco Client	Brazilian	Already interacted with BIA
N1	Not a Bradesco Customer	Brazilian	Never interacted with BIA
N2	Not a Bradesco Customer	Brazilian	Never interacted with BIA
N3	Not a Bradesco Customer	Brazilian	Never interacted with BIA
N4	Not a Bradesco Customer	Brazilian	Never interacted with BIA

Table 1. Data of Interviewed

Therefore, this research reflects a context-specific based analysis, regarding the case of BIA. The contacts were made via email and social media, since all participants are from Brazil. The interviews were developed based on some topics and concepts previously explored in the literature review. All the interviews were formulated and developed in portuguese and the extracted data was translated to english.

3. Context Analysis

To better understand this study and its implications, these sections will provide a better context analysis of the background of the situation of Brazil in the launch of BIA and in the period of change of approach, as well as the positioning of Bradesco.

The Social-Cultural and Economical Context of Brazil

Brazil is one of the biggest countries in the whole world. Its population was formed by the interactions of european, african and indigenous natives nations, justifying its wide diversity. The state of São Paulo is located in the Southeast and is the most populous city proper in Brazil. Nowadays, the Brazilian economy has been presenting evident signs of recovery, according to some data from 2021 (Portal da Indústria). In 2018 it was considered the “Ninth World Economy” and “First in Latin America”, according to IMF (International Monetary Fund) data, and the estimate of the Brazilian GDP is 2.14 trillion dollars (Bezerra). According to OECD (2018), and regarding the Pisa Exams, Brazil has had bad results that are, in the last decade, stagnant and far from reaching other middle- and high-income countries. The debate on regional inequalities in Brazil, prevailing in the 1990s (Neto, 2014). “The relationships between the different indicators of the demographic transition and the per capita household income show that social differences lead, in Brazil, to “demographic inequalities” greater than those observed between different regions” (Brito, 2008, pp. 1). As a matter of fact, and according to the HDI’s (Human development Index), the regions most affected by social problems in Brazil are the North and Northeast of the country (Bezerra). According to the Gini Coefficient, developed by Corrado Gini, in 1912, it is possible measure the inequalities of a society. Thus, in Brazil, in 2011, the Gini index in the social area was 0.527, the lowest value since 1960 (0.535). It should be noted that the closer to zero, the lower the inequality. However, the quotient increased again in 2017, because of the serious economic crisis. Furthermore, the social aspect was affected and inequality was even more evidente.

OECD states that reading comprehension problems may limit opportunities for new generations in a digital world that is increasingly volatile. According to the OECD general secretary, Angel Gurría, “without adequate education, young people will languish in society, unable to meet the challenges of the future world of work. Inequality will continue to rise”. As a matter of fact, social discrepancies, in Brazil, are evident. According to recent studies, almost half of the Brazilian women, mostly with low income, have already suffered from sexual harrasement, in particular at work, but only 5% use the company's HR to report the case

(Cavallini, 2020). This illustrates that, in fact, women were often unaware of what harassment was and that they could be suffering from it.

The Case of Bradesco Bank

Bradesco is a Brazilian Bank, founded in 1943 and based in São Paulo, and was initially called *Banco Brasileiro de Descontos*. Currently, the bank already has almost 1 million customers and 9.899 branches, of which only 6514 are active, according to the Directory of Brazilian Companies. According to Bradesco's website, its main purpose is to "create opportunities for the fulfillment of people and the sustainable development of companies and society". They indeed share some values that are fundamental, such as transparency, the client being, quoting their website, the "reason of the organization", "respect for human dignity and diversity", "socio-environmental responsibility", and others. Over the time, Bradesco has been the protagonist of major events, such as one of the biggest acquisitions in its history: HSBC Bank Brasil S. A. – Banco Múltiplo, expanding their base. In the 10's, Bradesco celebrated its 60th anniversary, positioning the Foundation as a reference for social inclusion. According to the Organization's Website and aggregate to its objective of bank inclusion, "we drive local development and add value to our business, which is only possible due to investments in technology". An article of "g1" quotes Bradesco's executive president, Octavio de Lazari, who states that, in 2021, the Organization reached "practically all the guidance estimates" for that same year. Indeed, according to the same article, the bank's recurring net income was R\$ 26.215 billion in 2021 (G1, 2022).

The Launch of BIA by Bradesco

The project of BIA started in 2015, but it was only officially in progress in 2016. At this point, and for a year, BIA only existed to support store managers, clear up some doubts, in a process of interactions and adjustments made depending on the feedback that was given. In situations where the feedback was negative, the work would be developed in order to understand the reason why what BIA answer did not meet what was asked, thus, a constant improvement of the artificial intelligence was made. Above all, the answers that BIA gave were compared to what a human operator would give. When the accuracy level was about 87% similar, then, in this case, it was released to the market. This mechanism was made with the aim of helping purchasing managers. However, already in 2017, it opened to customers with

its own curatorship, which has, since then, been improving the intelligence of the chatbot. This year, accuracy was considered sufficient, reaching 87.90%, and that was when the Organization felt safe to finally open BIA in the app for customers. At this stage it was the app where BIA worked first hand. However, still in 2017, BIA moved to WhatsApp, Business Enterprise version, justified by the fact that, according to secondary data obtained through the interviewee B2, one of the heads of the project, about 98% of Brazilian smartphones have WhatsApp installed. Later, BIA also migrated to Apple Business Chat, Google Assistant and Alexa.

BIA's Additional Role

“The offenses are real and are happening everyday” - Bradesco Comercial

As a matter of fact, BIA's great advantage began with being just a conversational agent that assisted and supported salespeople in order to later reach the public and its clients. Thus, at the end of 2019, there was a UNESCO campaign - “Hey, update my voice” - about female harassment. Bradesco came to the conclusion that, in fact, BIA exhibition somewhat reflected the female exposure of women in Brazil - an exposure and a very submissive position that said nothing to his interlocutors when he was a victim of verbal abuse/violence. In 2020 there were more than 95 thousand offenses, inappropriate expressions and harassment towards BIA. It was in this year that the company decided to take a stand on this issue, creating an initiative to change the feedback that BIA gave, starting this more active campaign of female empowerment. Indeed, at the beginning BIA responded cordially to violence, because the BIA persona is cordial and therefore only responds cordially even when it is violated. Immediately, Google started to do computed searches for the word “harassment” and, because of the campaign, there was a 190% growth only during the first tv commercial, which reflects the importance and concern of this subject in the society. Entering this campaign it was aimed for BIA to have stronger and more assertive answers. The next step was exactly to change the tone to follow this more assertive and stronger path. Thus, the Department of Digital Channels enters, which becomes part of the plan, being the owner of the UX, of the written experience of BIA. To validate the tone, the Marketing Department also appears. However, the company needed to make some internal changes to make this campaign effective. Taking that into account, HR and the Training Area were destined to make the first mappings, improving control and training mechanisms for the entire staff, although they weren't able to map all of the

controlling tools. The Project Control Area later took action with the objective of surveying some internal issues, before effectively acting externally. Even Though, at the time, this was no longer a Department in the Organization, the Call Centers of Bradesco were also the target of some changes, since the scripts were changed and improved, in order to make women feel more secure and empowered. Bradesco was now part of some other compromises, such as the movement “He For She” (Onu) and “Unstereotype Alliance”, urging employees to respect all these humanitarian issues, which include gender equality issues, racial equality, LGBTQI+ issues and people with disabilities. So, the Bradesco understood that if BIA, who was “only” artificial intelligence, was a target of violent speeches, probably the telebank would also be. And, in fact, there were many calls of very explicit and literal sexual harassment. In order to do that, they had to retrain the centers, since it entailed a change in procedures and the way of serving, and, later on, they also extended the training to the entire staff. In fact, this whole process took a whole year: the whole year of 2020: starting even before the pandemic. The communication of the campaign on TV and on Social Media only came out in March 2021, which, indeed, caused a lot of discussion to the outside and it was, indeed, one of the Bradesco Campaigns with more dislikes. However, and regarding the hate and the aggressivity, the campaign stayed on the air. Bradesco ended up receiving thousands of messages and thanks from women, admiring the position the company was taking in bringing such an essential and important topic to the table, through BIA. In terms of numbers, there were a total of 1,5 million visits to de campaigns site, 168 million views on YouTube and more than 32.600 comments on social media. Indeed, BIA and this campaign were able to make society aware of this reality. Consecutively, the number of interactions with BIA exponentially increased: 31.920%. BIA was improving its answers with real-time curation, which led BIA to be able to respond to many other topics. Now, Bradesco is known not only for being a Bank, but for being the bank that boost internal action fronts to legitimize the discourse, talk about something relevant in the current context, not give in.

4. Data Analysis

In this chapter, data analysis is presented, as we tested and validated the suggested model: at this point, all the data collected was analyzed. The most relevant and pertinent content was extracted from the interviews, since the text is extensive, and is presented and distributed in three tables, grouped regarding the interviewees (B's, C's or N's, as previously identified), in the attachments, according to the different themes and questions presented. It is crucial to mention that, despite the fact that all the interviews were carried out with the same base of concepts and themes, they were adapted according to the interviewee: Bradesco worker (B) or Former/Current Bradesco Client that already has or not previous contact with BIA (C and N) - in order to collect more precise and valuable information.

In order to simplify the analysis of the results a list of abbreviations for the constructs used in this study was elaborated, as presented in the following table.

Abbreviation	Meaning
RS	Remote Sensing
AR	Augmented Reality
AI	Artificial Intelligence
MR	Mixed Reality
ML	Machine Learning
VR	Virtual Reality

Table 2. Abbreviations for AI terms

To have a preview of the topics covered in the interviews and compare some results, a table was created, using categories and sub-categories. Whenever the interviewee spoke of a certain sub-category in their speech, the corresponding square appears with a certain color. The color code - green or red - depends on whether or not the respondent agrees with the mentioned sub-category. So, in case when the interviewee says the exactly same as the subcategory, the color code will be green; if their mention the subcategory but don't agree with it, the color code

will be red; and, finally, if the category/sub-category is not mentioned at all, the square remains blank.

Category	Codes (sub categories)	Total	Total	Total	B1	B2	B3	C1	C2	C3	N1	N2	N3	N4
Easy of Use	it is easy to use	5	5	0										
	It creates difficulties while using it	2	1	1										
	It uses aduated and adapted language	1	0	1										
	It uses simples language	2	2	0										
	It is difficult to understand	3	2	1										
	It helps to solve the problem easily	5	2	3										
	It predicts users' responses	1	0	1										
Main Interaction Possibilities	It is able to map all interaction possibilities	2	0	2										
	Difficulty mapping all interaction possibilities	6	6	0										
	It can map some interaction possibilities	2	2	0										
	Autonomous reasoning	4	0	4										
	Standardized answers to more expected questions	5	5	0										
	very limited understanding and responsiveness	3	3	0										
	Difficulties on predicting users' responses	4	4	0										
Educational Approach	Possibility to educate society	7	5	2										
	Possibility to educate society depending on the society's group	4	4	0										
	Chatbot's educational purposes work in short term	2	1	1										
	Chatbot's educational purposes work in long term	3	1	2										
	Aim to educate users and society	6	5	0										
Efficiency and Effectiveness	Operating in a fast, direct and efficient way	6	6	0										
	Lack of effectiveness for more specific issues	5	5	0										
Overall Experience of Use	Negative experience	1	1	0										
	Positive experience	1	1	0										
	Positive experience, but needs adjustments	3	3	0										
	Internal teams working on conjoit solutions	3	3	0										

Internal Procedures and Impact	Review of company ethics and standards	2	2	0													
	Review of the Service Protocol	2	2	0													
	High number of harassing messages against BIA	3	3	0													
	Tracking and monitoring of attributes according to people's perception of the campaign	2	2	0													

Table 3. Interviews Content Analysis

B2 Interview Guide

1. BIA's purpose has changed over the years and has developed a lot. Thus, it was only in 2018 that the contact between BIA and Bradesco's customers emerged. Only more recently, BIA has been adapted to address issues related to harassment and bullying.
 - 1.1 In an even more experimental first phase, before the BIA was launched, how were the tests conducted?
 - 1.2 Had bullying and harassment issues been considered at this early stage of testing or did they not anticipate that this could happen to the extent that it eventually did? (ask to explain further if necessary)
2. What were the main departments involved prior to launch?
 - 2.1. Are they currently the same? If not, which departments were later involved and why?
3. Despite the impact that BIA is having, this is just a “virtual channel” created by Bradesco. The truth is that, no matter how much the accuracy level is improved and no matter how similar and close BIA presents to a human being, it will never be able to be one hundred percent.
 - 3.1. Can the fact that BIA is “just” a robot prevent or hinder the creation of a relationship of trust and seriousness with users? If so, in what way?
 - 3.2. In general, what problems has Bradesco faced in developing and improving BIA?

3.3. Regarding BIA's skills and ability to respond to hateful and harassing messages, can these still be improved? How do you think this can be done?

4. Considering all the harassment, bullying and hate speech that BIA has been targeting, how did the idea of developing a campaign linked to the social cause of female empowerment come about? *(This question was asked in order to understand the link between the additional service channel to the cause of women's empowerment).*

5. What was the impact that BIA had on the entire company, namely on physical channels? *(This question was asked to deeply understand the impact of BIA inside Bradesco and regarding the staff).*

5.1. Do you consider that BIA had an effect of integrated adaptation in the company?

5.2. Has this impact also been extended to the entire Brazilian society? Was it positive?

(The following questions are regarding BIA's future)

6. Increasingly gaining visibility and reach, what are the next steps for BIA?

7. Currently, BIA is associated with a female figure. However, despite having a voice, it is not associated with any image or face. Could this be a future step for Bradesco?

7.1. Do you consider that there could be advantages for the user - BIA relationship if it had a defined physical appearance, easily recognized by any user?

Regarding the data collected from **B1**, **B2** and **B3**, it was possible to gather a lot of information about the operation, pre-launch and future intentions of BIA, as well as all the aggregate implications. That is, they gave a more internal and professional point of view of what BIA is and what is expected by Bradesco, internally. It was possible to conclude, through the answers given by interviewee B3, that the **initial purpose** of the BIA was, essentially, through an AI mechanism, to have a more or less standardized set of answers to questions that were expected at that stage, as it is possible to conclude from what interviewee B2 said (*"when we went on the air, this whole mapping was quite extensive and we already knew that we would*

have questions that were not foreseen there (...) Sometimes we leave it as a generic answer”). Thus, with this, it was aimed to give more support (especially to store managers), since this sector has a considerably complex process. **Before the launch**, interviewees highlighted the “Hey, update my voice” as the project that helped to conduct tests for BIA. B2 also refers to “the worry of preparing and training the staff”, before AI, controlling policies and procedures for when a case of harassment happens - control of the internal team in the first instance. B3 refers that BIA “*only passed to the app when the accuracy level reached 97/90%*”. As a matter of fact, B1 and B2 affirm that, even though a lot of questions asked to BIA were predicted, they were not prepared for some others, since the campaign was the object of a lot of **negative reactions** and messages. With that, a lot of themes began to emerge that had **not been mapped** and that was one of their biggest difficulties. **This is when all the insults and harassment begin to happen.** The impact of BIA is visible not only in society but, at first, internally, since it induced the **review of all policies** (including ethic policies) and all the service protocol. Not only that, but B2 states that “*the scripts from the attendants were changed and adapted*”. B2 also relates that BIA is criticized for “*not being a human being*” but “**only a robot**”. This may express the fear and lack of trust regarding the population towards a chatbot like BIA. B2 also differentiates the reaction of “**conservative**” users, who have more difficulty in trusting and understanding the role of the BIA, and of more “**progressive**” users. Regarding the **Women’s Empowerment Campaign**, also the interviewed B2 stated that Bradesco tried to influence and **promote discussion in society**. And that was only possible with BIA, so, in this line of thought, there is an **increased value of influence**. As B1 said, they tried to give BIA a more straightforward but rigorous and educational tone of voice, in order to avoid aggression (“*(...) Bia responded in an affirmative, empowered, more rigorous way and avoiding aggression*”). However, that didn’t stop the harassment and bullying from users, as B3 stated (“*regarding people’s reaction, in general, they were very intolerant and had a very easy cursing*”). A Market Research was carried out in order to monitorise BIA’s campaign, which had, according to B2, many variations, but, overall, there’s a “*positive outcome*” (90%, “*one of the most positive Bradesco’s campaigns*”). This way, and regarding all the 3 interviews, it is possible to conclude that all of them believed that **BIA actually did make a difference and influenced not only Bradesco’s staff, but the Brazilian population.**

C's and N's Interview Guide

1. Are you a Bradesco customer?
2. Do you know about BIA, Bradesco's chatbot?

(For those who didn't know BIA, a context was given. The following sub-questions were only asked according to the interviewees knowledge).

- 2.1 Have you ever interacted with BIA?
 - 2.2. What was the purpose of your interaction with this chatbot?
 - 2.3. Did you interact with BIA in an attempt to talk about issues exclusively related to the campaign?
 - 2.4 Did you find BIA's approach correct and adjusted to your needs as a customer/user?
 - 2.5 Did BIA always have an answer to all the questions asked?
 - 2.6 What words do you associate with BIA and with this women's empowerment campaign created by Bradesco?
3. The purpose of BIA has changed over the years and has developed a lot. Thus, it was only in 2018 that the contact between BIA and Bradesco's customers emerged. Only more recently, BIA has been adapted to address issues related to harassment and bullying and, consequently, female empowerment.
 - 3.1 Therefore, do you think it is possible for a "robot" to contribute positively to the education, in this case, of the Brazilian people, alerting and educating about issues related to sexual harassment, bullying and other forms of oppression such as racism and homophobia?
 - 3.2 Do you think society is prepared for this type of intervention?
 - 3.3 The truth is that BIA had and is having a great impact, despite being just a "virtual channel" created by Bradesco. Do you think that the fact that BIA "is just a robot" can make it difficult or prevent the creation of trust and seriousness

with users? Do you feel that this has happened to you in previous contacts? In what way?

4. In which way do you think BIA could improve its approach and competence?
5. Do you consider that, through BIA and its campaign, Brazilian women, in general, are more likely to become aware of what harassment is?
6. With the implementation and positioning of BIA, how do you think Bradesco has positioned itself? Do you think the impact was mostly positive, negative or neutral?
7. To what extent did BIA and the entire campaign contribute to making changes in your behavior pattern?

7.1 What about the behavior pattern of the Brazilian population in general?

Then, the answers of respondents **C1, C2, C3, N1, N2, N3** and **N4** were also analyzed. C1, C2 and C3 were the only ones who already had previous contact with BIA and all of the three affirmed that that contact was exclusively to solve **problems related to their bank accounts**. The general balance was that BIA was helpful, straightforward and effective whenever the questions were standardized. However, they also experienced more negative scenarios, since BIA was not able to help with all the bank related questions, as C1 said (*“BIA didn't understand most of the questions, and doesn't always have an answer to everything”*). The more general knowledge of N1, N2, N3 and N4 argues that, in fact, chatbots can be a precious help, as they are more **direct** (*“for protocol questions, chatbots were good, because questions are more standard”*, said N2). However, N1 and N2 highlight the same problem mentioned by the Cs, when the protocol isn't followed: **difficulty from the chatbot to answer more specific and not standardized questions**. N1 even says that *“the experiences were mostly negative”*. Giving a detailed context of how BIA works, all of the respondents were able to answer the following questions. The answers for the question “Can the fact that BIA is “just” a robot prevent or hinder the creation of a relationship of trust and seriousness with users?” were divergent: 1/7 of the interviewees said “no” the statement; 2/7 weren't able to respond and, the last 4 say “yes”. N2 also pointed out that Brazil, being a very *“heterogeneous country”*, divided in several groups, may lead to *“different reaction”* towards BIA's campaign - which was, indeed, what happened (division between conservative and progressive groups).

Also, all of them believes that BIA and chatbots in general can have the **ability to educate the population**, with the exception of C2 who, despite admitting the ease of use of a chatbot and the symbolic importance of BIA, in the long term does not believe it to be an effective and efficient campaign (*“the impact, in the long term, is neutral, because it will never educate a total or significant number of users”*). Thus, in general, respondents believe it is **possible to change patterns and educate society through a chatbot**, based on prior knowledge acquired through BIA (*“the idea of daring/innovation is very well seen by Brazilian society”*, says C2; *“society is not prepared for this type of intervention”*, says C3)). C1 and C2 also agree that **the impact is more meaningful and noticeable in the short term**. C3 points out that Bradesco shouldn't “mix” matters so much: as a bank should not be that concerned with educational purposes (*“people will only look for BIA to solve problems related to the bank”*).

5. Discussion

As a matter of fact, chatbots have an important and significant role on the customer journey, with a special enphase on the purchase phase and regarding a more commercial area. Until today, authors have only studied the chatbots regarding a more commercial dimension, as expected, and through all the three stages of the customer journey: pre-purchase, purchase and post-purchase. Therefore, to my knowledge, I'm the first one studying the social dimension of chatbots in this context, regarding the case study of BIA. Furthermore, even if this case study covers this social area, it will not embrace all the customer journey phases - only the pre-purchase and the post-purchase, since BIA only covers those stages.

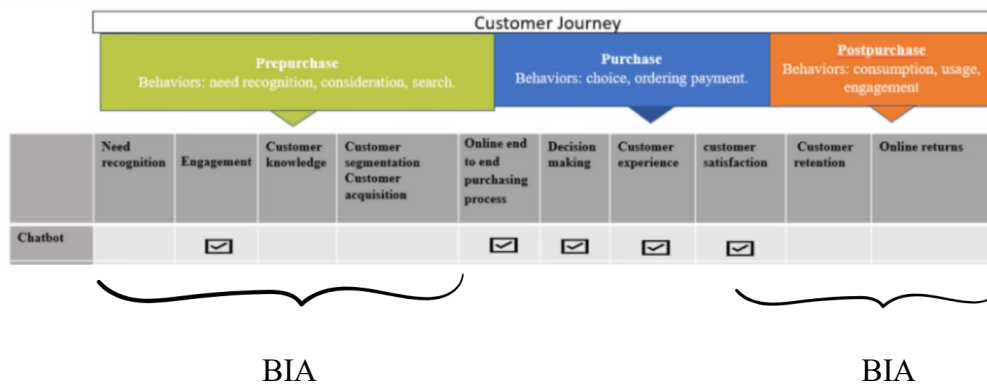


Figure 3. Framework of AI embraced customer journey(Rana *et al.*, 2021) and BIA's performance

According to the interviews and data collected and analyzed about BIA, this chatbot is effective and important in the mentioned phases. Thus, this case study explores the importance of a chatbot in those two different phases of the customer journey, regarding not only a commercial, but also a social area.

Regarding the analysis of the interviews and according to my knowledge acquired throughout this master, it is a matter of fact that chatbots can, indeed, have an important role in society and influence people. As a matter of fact, some chatbots, such as BIA, may be agents in approaching meaningful sources of inspiration or even in public opinion making.

As Dahiya (2017) said that, for having a quick interaction with the users, chatbots are a good bet, we also verified this through this case study. In fact, interviewees concluded that chatbots, and in this specific case study, BIA, are an easier, straightforward and quicker way to watch their questions and need to be attended. However, Weinberg (2017) affirmed that AI is not totally ready and explored at its maximum potential, since it is not possible to always

understand what users are saying and answer correctly and, as a matter of fact, this case study came to the same conclusion. Regarding the customer journey, Malodia et al., (2021) affirmed that conversational agents have an important role which, once again, was improved by this case study. Even Though, and as mentioned before, this study explored more deeply the pre-purchase and post-purchase of the customer journey, since those are the stages with a more fulcral role and activeness regarding the social dimension of a chatbot. The level of trust and a positive relationship between chatbots and users is, according to Yen and Chiang (2020) essential to determine the purchase intention of the customer. In fact, interviewees of this case study proved that this level of trust and confidence is important to proceed with the purchase. However, this is not always a reality, since some users still don't fully rely on “machines” and “robots”, because of the fact that they are not human beings. BIA was, as many other chatbots, a target of various messages of harassment, hate and bullying. Regarding that, we concluded that BIA adopted, in a later stage, a firm stance, in defense of women's rights, and with an educational tone, which doesn't quite fit with what Brahnam (2005) affirmed: that chatbots mostly respond with a defensive approach or, in some cases, they use humor and counter attacking. Either way, it was possible to conclude that this approach has significant consequences on the user.

The social role of chatbots has not been, as said before, deeply explored by other authors. Based on the data collected as analyzed, the present case study of BIA shows that not everyone is open minded enough to receive “moral lessons” from a “robot”. However, this study proves that this social dimension is effectively important and that conversational agents can actually act as “digital influencers” for society, as a way to educate them on certain topics. In fact, a lot of people that interacted with BIA search for terms such as “harassment” on Google, which means a potential increase in the search for related terms and an increase in knowledge about it by the Brazilian population. According to data previously presentent, it is possible to conclude that this chatbot indeed induced pro-social behaviors on the population (clients and non-clients of Bradesco), regarding the pre-purchase and post-purchase phases of the customer journey.

6. Findings

The main objective of this research was to understand if chatbots could effectively induce pro-social attitudes and behaviors in users, throughout the customer journey in order to effectively help to educate the society as a whole. Nowadays, when AI and conversational agents are gaining more and more importance each day, it is becoming more common for companies to explore and bet on these areas even more. With this study, it was possible to conclude how conversational agents - chatbots - can effectively induce those pro-social attitudes and behaviors in society. In this specific case of Bradesco, and in relation to its chatbot - BIA -, it was possible to conclude how the social dimension is present throughout the customer journey, in both pre and post-purchase phases. Chatbots, and regarding BIA's example, can help a company to communicate and defend a cause, provoking actions in users and even in the society as a whole: researching more about the topic, changing behaviors and opinions, among others.

Nowadays, and, as mentioned before and as reviewed by Weinberg (2017), we still have a long way to go, since AI is not fully explored and ready yet, which means that it would not always be possible to fulfill customers/users needs. Anyways, it was confirmed that, in fact, conversational agents have a crucial role in society, according to Malodia et al., (2021), since they help customers in the commercial dimension of the customer journey, specially on pre-purchase and post-purchase phases, as explored previously. The social dimension, not so explored and expected to be studied, turns out to be one area with an extreme importance.

In the specific case of BIA, the Brazilian population became more aware of what harassment is, in many different forms, and about feminism empowerment. Even though there was presented evidence for this conclusion and are, indeed, significant for this research, it is important to highlight that these results are limited by contextual factors, such as the sample size and origin. Regarding the harassment toward conversational agents, we believe that contradicting abuse of conversational agents, in particular verbal abuse, should be handled and discouraged. Furthermore, chatbots like BIA, that have more assertive and educational responses, can - as observed - have a positive outcome in society.

We believe that this case study may be pertinent and important for other companies, in order to give more relevance and highlight to conversational agents and to its potential role as "digital influences". Our society is even more ready to deal with the type of technology, and it

may be a way to prevent harassment, abuse, and bullying through chatbots and women, in a generic scenario.

For further researchers, it would be interesting to analyze the social role of chatbots (regarding pre-purchase and post-purchase phases of the customer journey) but with a more varied sample in terms of geographic location, as this can be a factor that conditions the results of the case study, even Brazil is considered a very heterogeneous country. Not only that, but it would be interesting to understand if the fact that BIA is seen as a more feminine presence (even though its creators tries to work with neutral language and approaches) may affect the way users interact: Since it has been proven that the female personality and voice have a tendency to calm down and reduce aggression, if the chatbot wasn't a "woman", would there be more or less cursing and harassment cases? Finally, future studies could also be made across different retail sectors, showing the application of AI in the retailing industry for customers' purchasing processes. It would also be interesting, for future studies, to collect quantitative data through a survey directed to clients. Not only that, but it would be interesting to analyze and collect data from companies related to this topic.

Taking into account the results of this study, we propose the use of chatbots as a way to encourage more conscious and pro-social behaviors, in order to educate and form society. Chatbots can, in fact, be a tool for companies and organizations to go further in the defense of social ideals in favor of the community.

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Appendices

Appendix 1

Content Extracted from Interviews B1, B2 and B3

		B1	B2	B3
Experience/Contact with AI (with BIA and in general)	What is the purpose of the interaction?			
	Was it a positive interaction/experience?			
Initial purpose of BIA		-	-	<p>- Through an AI mechanism, having more or less standardized answers to questions that were more or less expected</p> <p>- It emerged to provide support, as this is a sector with a complex associated process, in which many forms are required, many</p>

				procedures, and there are many questions - Support store managers
Before Campaign Launch	How were the tests conducted?	- They joined the " Hey, update my voice " project: a way to educate , when it comes to female personalities	- Project took 1 year to be planned - They joined the project " Hey, update my voice " - Before AI , they prepare their purpose through the staff : review training, control policies and procedures for when a case of harassment happens - Analysis of real examples with some type of violence/harassment - Control with an internal team (newsroom, more focused on technology and customer experience) + external team (consulting "Think Eva", more technical and specialized and feminist content)	- BIA passed to the app only when the accuracy level reached or 87/90%
	Had bullying and harassment issues been considered at this early stage of testing or did they not anticipate that this	- BIA was prepared for some answers (help from the consultant Think Eva to write the messages)	- "We've been killing each other on digital for a while": these people are organized - These groups gain notoriety through insults and	-

	<p>could happen to the extent that it eventually did?</p>	<p>- The campaign was the object of authentic barbarities, negative reactions, which were not expected and which were difficult to read/assimilate for those who do this screening</p>	<p>interactions with BIA, later shared through screenshots on their social media</p> <ul style="list-style-type: none"> - The company was already known for approaching humanistic themes, and already expected to receive a large volume of attacks when approaching these themes - Bradesco did not always have an answer for all interactions, so sometimes the answers were more generic - Other themes began to emerge that had not been mapped (namely "Is BIA Nazi?") 	
	<p>Who made these kinds of comments to the BIA?</p>	<p>- To establish contact with BIA it was not necessary to be a bank customer</p>	<ul style="list-style-type: none"> - Usually they were always conservative groups and, in general, they would be "white men, between 15 and 30 years old" - There's no information if they were Bracesco customers, because anyone can talk to BIA (especially via whatsapp, where the volume was higher) 	<p>-</p>

<p>Involved Departments</p>	<p>What departments were involved before the launch?</p>	<p>- Currently there is a full executive committee - There was the involvement of many people, including customer service, corporate projects, etc</p>	<p>- Digital Channels, Marketing, HR, Training Area, Project Control, Call Centers</p>	<p>- The first involved was the Innovation Department (which has many contacts of technology companies that helped in the creation of the BIA) that works a lot with the experience - BIA had its own curatorship: with people who passed through call centers and management positions (+ experience with potential doubts): that is, a new department where people worked to improve BIA - I work closely with scientists who analyze the data</p>
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	<p>Are they currently the same? - INTERNAL IMPACT</p>	<ul style="list-style-type: none"> - Bradesco reviewed all the service protocol - Revised procedures to maintain a more firm stance across all departments that had contact with customers; a video was made for employees that demonstrated the impact of BIA's attitude changes - They took advantage of the campaign to review the company's regulations and ethics policies 	<ul style="list-style-type: none"> - After the campaign, the service scripts were changed - The thought was: "if BIA, which is artificial intelligence, receives, then our telebank also receives, our teleservice" 	<p>-</p>	
<p>People VS Robots</p>	<p>Can the fact that BIA is "just" a robot prevent or hinder the creation of a relationship of trust and seriousness with users?</p>	<p>If so, in what way?</p>	<p>-</p>	<ul style="list-style-type: none"> - Yes - BIA is heavily criticized for "not being a human being"; "It's just a robot" - Considers that this is a superficial understanding, therefore, they tried to "go down a layer" in the content published on social networks: because violence still happens and affects women everywhere - BIA was used only as message vector - , As BIA is a robot, the deepest message was passed 	<p>-</p>

				<p>through content creators</p> <ul style="list-style-type: none"> - Bradesco created a web page where he also tried to describe the decisions that were being taken, so that people would know that the concern was violence (and not the machine) 	
	<p>User reaction <i>(Can BIA, a chatbot, have an educational and social role?)</i></p>		<ul style="list-style-type: none"> - went from 100,000 "swearing"/sexual messages/etc in one week to over 1 million the following week - after the campaign went live: there were a lot of people testing the BIA - Google Brazil search for the word "harassment" increased 	<ul style="list-style-type: none"> - Progressives: understood and started to understand (especially because the content creators were real people who were not part of Bradesco; Bradesco gained more legitimacy) - Conservatives: greater difficulty in understanding speech; more closed people; not so open to discussion 	<ul style="list-style-type: none"> - It was found that her exhibition somewhat reflected the female exposure of women in Brazil - People were very intolerant and had a very easy cursing - Many of the aggressions to which the BIA was a victim were made as a joke: they tested BIA with trick questions - Currently: there is less cursing, as people are not so curious about the

					reaction to harassment - In Brazil , people culturally trivialize harassment and it is a society with tremendous social abyss (society divided by groups and there are behavioral differences)
	Tendency		-	- Over time, this ceases to be an issue and people stop discussing it	-
BIA development and improvement	Problems associated with BIA improvement	In general, what problems has Bradesco faced in developing and improving the BIA?	- BIA was not prepared to answer many questions , namely about Nazism, about political issues, about racism, xenophobia.	- 1st difficulty: mapping all the possibilities of interaction (there were many people asking questions whose answers had not been thought out/programmed); solution: a "war room" was set up with people from the newsroom, development and marketing and the interactions were updated as they appeared on Twitter; this difficulty was more pronounced in the first 24 hours of the campaign (then it	- Some say that BIA "eliminates jobs" (despite having created new ones: less operational, more strategic)

				was possible to synchronize) - 2nd difficulty: coordinated attack to take down the server; solution: another "war room" was set up with people from infrastructure and technology to load the server	
	Future Improvements	Regarding your skills and ability to respond to hateful and harassing messages, can these still be improved? How do you think this can be done?	-	- Yes - Two paths: path one is from the machine point of view , as the Watson version used is always lagging behind the IBM update; path two is curation , working on issues that were not initially addressed and working on new issues/interactions to evolve in the BIA field of knowledge + mapping of important themes	-
Women's Empowerment Campaign		Considering all the harassment, bullying and hate speech that BIA has been targeting, how did the idea of developing a campaign linked to the social cause of female empowerment come about?	-	- First there was technology: updating BIA to have a firmer and more assertive tone (giving BIA a persona); to understand this tone, they joined marketing and, later, HR , to train the team and ensure that everyone was aligned, ensuring good internal practices ; then the control areas	-

			<p>- Only later they move on to the campaign (since UNESCO's proposal is for companies to influence the entire ecosystem)</p> <p>- So, to create more impact, Bradesco managed to influence and promote discussion in society: at the launch of the campaign, searches for "harassment" on Google Brazil grew almost to 200% (unassociated from Bradesco)</p> <p>- role of influence</p>	
	<p>Has any study been carried out to try to understand to what extent the answers ended up allowing Brazilian women, in general, to become aware of what harassment was?</p>	-	- No	-

Impact	Impact on Brazilian Society	-	-	-
	What was the impact that BIA had on the entire company, namely on physical channels?	-	- It was easier to measure the impact of BIA - It was the first time they spoke to 100,000 employees about violence against women: they created a campaign “Violence against women is our business” , encouraging people to act in the presence of violence against any woman (themselves or co-workers)	-
Next Steps	Increasingly gaining visibility and reach, what are the next steps for BIA?	-	- Anti-racism and against homophobia: but not through major campaigns - only from	-

				<p>the point of view of functioning and internally</p> <ul style="list-style-type: none"> - The focus of AI is always the "financial world", so, to maintain this core of information of ability/skill, BIA will not go into too much detail in the other fields 	
BIA	BIA Image	<p>Currently, BIA is associated with a female figure. However, despite having a voice, it is not associated with any image or face. Could this be a future step for Bradesco?</p>	-	<ul style="list-style-type: none"> - No (and BIA is not considered a female persona) - In the future, BIA will eventually need to respond in audio - Bradesco wants to ensure, through technology, that people can establish empathy quickly - In the past they believed that a female voice could be more empathetic, but the hypothesis was excluded due to structural sexist reasons - However, nowadays, people also don't identify with a voice that represents with more than one gender (they couldn't create a connection) - BIA does not has a face, as it would be difficult to choose what would best represented the Brazilian woman 	-

				- It's all still under discussion	
BIA tone	What was BIA's approach before and after the campaign?	- before the Campaign, BIA gave more passive responses - after she was trained: she started to respond more firmly (this is harassment", "I didn't like it", "you don't talk like that to me or anyone", "this is a crime"), in a more empowered, rigorous way and avoiding the aggression"		- One day BIA may have a voice: it is proven that female personality and voice tend to calm down and reduce aggression; will never be a "human" voice	-
	How does BIA avoid the issue of using words in its speech that have an implicit gender?	-		- It was possible most of the time , but not always: there are interactions that end up "falling" in the female gender - However, there is an ongoing review process to try to take the gender out of the speech , using formal Portuguese - They don't use neutral pronouns, because a lot of people wouldn't understand	-
Market Research	Has any market study been carried out at Bradesco in	-		- Yes, tracking was carried out: the attributes that interest	-

	<p>general? Have there been any positive or negative impacts that you have already identified after this campaign?</p>		<p>them to affect people's perception of each campaign are monitored.</p> <ul style="list-style-type: none"> - BIA campaign had many variations, but, in general, people's perception was positive - 90% positivity (people who liked it), 83% agreeableness (people who wanted to see it again) - It was one of Bradesco's most positive campaigns - However, there was a "scare" with the comments and violence on the Youtube channel: 70% of the comments were negative, but they did not stick to these groups 	
<p>Present</p>	<p>What is the behavior pattern of people at the moment when they interact with BIA? Is different?</p>	-	<ul style="list-style-type: none"> - Never went back to the pre-campaign period (in quantity and volume) - In 2020, BIA had received 95,000 messages of harassment and currently it is far from that scenario 	-

Appendix 2

Content Extracted from Interviews N1, N2, N3 and N4

		N1	N2	N3	N4
Experience/Contact with AI (with BIA and in general)	What is the purpose of the interaction?	- besides BIA, used other chatbots related to customer service	- Travel context	- To facilitate the resolution of issues related to your insurance - To make reservations	- To help with processes and payments
	Was it a positive interaction/experience?	- The chatbot was often unable to solve their problems or forward them directly to someone in the company - The experiences were mostly negative	- For protocol questions, chatbots were good, because questions are more standard - The opposite has already happened and they had bad experiences: the chatbot not being able to answer and understand what was being asked (it ended up having to talk to a real human person)	- Believes that the use of chatbots is efficient for this type of service - It's easier and more straightforward	- It was straightforward and effective

			- Believes that, when the chatbot has a good structure, the use of the chatbot can be efficient		
Initial purpose of BIA					
Before Campaign Launch	How were the tests conducted?				
	Had bullying and harassment issues been considered at this early stage of testing or did they not anticipate that this could happen to the extent that it eventually did?				
	Who made these kinds of comments to the BIA?				
Involved Departments	What departments were involved before the launch?				
	Are they currently the same? - INTERNAL IMPACT				
People VS Robots	Can the fact that BIA is “just” a robot prevent or hinder the creation of a	If so, in what way?	- Believes that BIA has more credibility knowing that it is not passive	- Considers that Brazil is very heterogeneous and divided into several groups,	- Yes - Thinks that there are a lot of people who don't believe in technology and see
					- Not for certain subjects, when it's something more technical

	<p>relationship of trust and seriousness with users?</p>			<p>which leads to different reactions and behaviors towards the BIA</p> <ul style="list-style-type: none"> - Believes you have enough skills to teach and educate <hr/> <ul style="list-style-type: none"> - Yes - Believes that many women are still not ready to talk about harassment issues, for example, unlike robot like BIA that is, hence its importance - It will always make people reflect on the themes " 	<p>robots and AI as a stigma</p> <ul style="list-style-type: none"> - Feels confident and secure regarding chatbots/robots, because of the fact that is a human being who made it: there is only a robot because there is a human behind the development 	<ul style="list-style-type: none"> - But yes, regarding about more critical issues
	<p>User reaction <i>(Can BIA, a chatbot, have an educational and social role?)</i></p>	<ul style="list-style-type: none"> - Yes, sees the robot as an "individual" - Thinks it is very 	<ul style="list-style-type: none"> - Believes that BIA can contribute positively to the education of 	<ul style="list-style-type: none"> - Believes that it is possible for BIA (and chatbots in general) to contribute 	<ul style="list-style-type: none"> - Believes that it is possible for BIA to contribute to the education of 	

		<p>positive and that society is prepared</p> <p>- AI can be a way to raise awareness and educate the population</p>	<p>society</p> <ul style="list-style-type: none"> - Has call center experience and knows how complicated it was sometimes to have to deal with certain "abusive" customers - Believes that someone who is going to insult the chatbot is because that person is "ignorant" and lacks information <p>- It is possible for BIA and AI in general to have an educational and formative role in society</p>	<p>positively to the education of society</p> <ul style="list-style-type: none"> - Harassment exists everywhere - In addition to being a more objective chatbot, education can be "observed" - Believes that a robot like BIA can change people's mindsets and behavior patterns <p>Overall:</p> <ul style="list-style-type: none"> - Affirms that construction and conceptualization of the chatbot is very important for user response - Thinks that most Brazilians are "impressed" <p>Gave example of another chatbot (7zoom)</p> <ul style="list-style-type: none"> - There were a lot of people who would talk to her, they had 	<p>society and the empowerment of women</p> <ul style="list-style-type: none"> - Thinks that it is interesting that it is programed in that sense - Thinks it's possible to create awareness through BIA
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					a speech of hate and harassment - She gave him emotional support	
	Tendency		-	- In the long term, believes that BIA may contribute to changes in user behavior patterns	-	- Believes that it is possible to change behavior patterns in the population
BIA development and improvement	Problems associated with BIA improvement	In general, what problems has Bradesco faced in developing and improving the BIA?	- Not having the ability to answer all the questions proposed	-	-	-
	Future Improvements	Regarding your skills and ability to respond to hateful and harassing messages, can these still be improved? How do you think this can be done?	- Believes that BIA should be monitored by a team essentially composed of women to talk about these issues of harassment and empowerment of women	-	- Improve the responses to those topics and questions that people ask that BIA is not prepared to answer yet	-
Women's Empowerment Campaign		Considering all the harassment, bullying and hate speech that BIA has been targeting, how did the idea of developing a campaign linked to the social cause of female				

	empowerment come about?				
	Has any study been carried out to try to understand to what extent the answers ended up allowing Brazilian women, in general, to become aware of what harassment was?				
Impact	Impact on Brazilian Society	- Believes that society is prepared for this type of intervention and establishment of limits	-	-	<ul style="list-style-type: none"> - Believes that the Brazilian population needs these lessons from BIA - Believes that it is possible for BIA to help raise awareness among the population, as this topic has been increasingly spotlighted - Thinks it is possible to help educate the population

		What was the impact that BIA had on the entire company, namely on physical channels?	-	- BIA can be a way to help prepare women who work at Bradesco	-	-
Next Steps		Increasingly gaining visibility and reach, what are the next steps for BIA?				
BIA	BIA Image	Currently, BIA is associated with a female figure. However, despite having a voice, it is not associated with any image or face. Could this be a future step for Bradesco?	- Believes that if BIA had a face/appearance this would contribute to a more defined personality and a greater approximation between user and brand	- Believes that if BIA had a face , the impact would be mostly positive - However, thinks that a face could affect the interaction of people, as there could be a greater judgment associated with the image and appearance of the BIA	- Believes that if BIA had a face , the impact would be greater and more positive	-
	BIA tone	What was BIA's approach before and after the campaign?	-	-	-	-
		How does BIA avoid the issue of using words in its speech that have an implicit gender?	-	-	-	-

Market Research	Has any market study been carried out at Bradesco in general? Have there been any positive or negative impacts that you have already identified after this campaign?				
Present	What is the behavior pattern of people at the moment when they interact with BIA? Is different?				

Appendix 3

Content Extracted from Interviews C1, C2 and C3

		C1	C2	C3
Experience/Contact with AI (with BIA and in general)	What is the purpose of the interaction?	- Used BIA because of an emergency accessing his bank account (in 2021)	- Used BIA to help carry out tax payment (first time used was in 2018 and last time was in 2022) - Used other chatbots to service pay TV channels	- used BIA because, being a Brazilian living in Portugal, it was easier to contact Bradesco through BIA
	Was it a positive interaction/experience?	- Doesn't like to interact with artificial	- Most of the time no - it was a bad experience - BIA had difficulty	- For specific questions, yes

		<p>intelligence in general, because of the limitations</p> <ul style="list-style-type: none"> - BIA didn't understand most of the questions, and doesn't always have an answer to everything - Highlights that BIA gave him a "leadership lesson" (gave him some tips) - Highlighted BIA's quick response and quick issue resolution - Despite not having an answer to everything, he managed to see all his questions answered (had to ask the questions another way to be understood) 	<p>understanding the questions raised and giving the intended answer</p> <p>(all questions asked were bank related)</p> <hr style="width: 10%; margin-left: 0;"/> <p>- When using the other chatbot, the experience was very positive, fast and effective</p>	<p>- For more complex issues, it was not an effective interaction, so he had to call Bradesco</p>
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Initial purpose of BIA					
Before Campaign Launch		How were the tests conducted?			
		Had bullying and harassment issues been considered at this early stage of testing or did they not anticipate that this could happen to the extent that it eventually did?			
		Who made these kinds of comments to the BIA?			
Involved Departments		What departments were involved before the launch?			
		Are they currently the same? - INTERNAL IMPACT			
People VS Robots	Can the fact that BIA is “just” a robot prevent or hinder the creation of a relationship of trust and seriousness with users?	If so, in what way?	<p>- Not exactly</p> <p>- There is already a long tradition in Brazil of contact with technology; Affirms that Brazilians are one of the most "connected" people</p> <p>- Believes that, especially for</p>	-	- Never thought about it

			younger people, it is not a problem		
			<p>- Compared the issue of users "playing" with BIA with other situations that happened with other robots, such as Siri</p> <p>- Considers that a good job is being done in giving this "moral lesson" to people</p> <p>- Thinks it has a pedagogical character</p>	<p>- Don't think it's possible to educate the population with BIA</p> <p>- Admits to be useful to use chatbots for the speed of response</p> <p>- Believes that BIA had little visibility as a chatbot that empowered woman</p> <p>- Symbolically it is important to place BIA in this context of female empowerment, but it is not an effective long-term campaign</p> <p>- Considers that older people will be able to "listen" to BIA because they think it is a person with a "legitimate concern"; understanding that it is a robot, the educational effect and role is no longer significant (there is an intensionality in the narrative)</p> <p>- Values Bradesco's concern about the issue of harassment,</p>	<p>- Thinks that BIA cannot educate in this sense, because most people will not go to the BIA for this purpose</p> <p>- Believes that Bradesco did not reposition itself even with this campaign</p> <p>- Believes that AI does not have the capacity to educate the population in general</p>

User reaction
(Can BIA, a chatbot, have an educational and social role?)

				but thinks that it does not really have an impact	
	Tendency		-	-	-
BIA development and improvement	Problems associated with BIA improvement	In general, what problems has Bradesco faced in developing and improving the BIA?	<ul style="list-style-type: none"> - Has limitations in understanding some phrases and expressions - May be inefficient 	<ul style="list-style-type: none"> - To improve, believes that they should statistically look at the answers BIA can't give (to have a more comprehensive repertoire) - Believes that BIA should promote meaningful user experiences 	<ul style="list-style-type: none"> - There are questions that the BIA does not have the ability to answer because it is a robot and because it is not programmed in this sense
	Future Improvements	Regarding your skills and ability to respond to hateful and harassing messages, can these still be improved? How do you think this can be done?	<ul style="list-style-type: none"> - Mentions that an improvement should be made in the answers related to bank questions (however, C1 does not have a fundamented opinion regarding the hateful and harassing messages) - Adjustments in the language of the BIA, since in Brazil there are many slang, depending on the region 	<ul style="list-style-type: none"> - There is a high frequency of questions asked that end up unanswered (BIA does not yet have a great capacity for understanding) - Do you think that the team behind BIA should be more concerned with learning from the relationship with the consumer - Bradesco should show data on the impact of BIA on society - Thinks BIA should focus only on bank-related issues 	<ul style="list-style-type: none"> - When the BIA detects that it cannot resolve the issue, it should automatically pass the issue on to an attendant - Emotional intelligence

<p>Women's Empowerment Campaign</p>	<p>Considering all the harassment, bullying and hate speech that BIA has been targeting, how did the idea of developing a campaign linked to the social cause of female empowerment come about?</p>			
	<p>Has any study been carried out to try to understand to what extent the answers ended up allowing Brazilian women, in general, to become aware of what harassment was?</p>			
<p>Impact</p>	<p>Impact on Brazilian Society</p>	<p>- For the population, C1 believes that the impact, in the long term, is neutral (because it will never educate a total or significant number of users); in the short term it is more noticeable</p>	<p>- Thinks that Bradesco is very attentive to technological innovations - Believes that the idea of daring/innovation is very well seen by Brazilian society - In the long term thinks it has no effect (educational role) - believes that the fact that the BIA takes a stand on issues of harassment/bullying/etc ends up not having a long-term impact on the population - Believes that a well-provided stimulus can change behaviors;</p>	<p>- Because it is a robot and as Brazil is still a very sexist country, thinks that BIA will not have a significant impact on society - Society is not prepared for this type of intervention (because it is a robot and the topic itself)</p>

			if the BIA is well designed and has a good control group it is possible to have these results	- Values the awareness that Bradesco is trying to create in people, but believes that it should not "mix" matters so much: it will only look for BIA to solve problems related to the bank
		What was the impact that BIA had on the entire company, namely on physical channels?		-
Next Steps		Increasingly gaining visibility and reach, what are the next steps for BIA?		
BIA	BIA Image	Currently, BIA is associated with a female figure. However, despite having a voice, it is not associated with any image or face. Could this be a future step for Bradesco?	- The relationship of trust is with the institution and not with BIA itself, the fact of not having a face is not an impediment	-

	BIA tone	What was BIA's approach before and after the campaign?	-	-	-
		How does BIA avoid the issue of using words in its speech that have an implicit gender?	-	-	-
Market Research		Has any market study been carried out at Bradesco in general? Have there been any positive or negative impacts that you have already identified after this campaign?			
Present		What is the behavior pattern of people at the moment when they interact with BIA? Is different?			