

## MASTER'S DISSERTATION

### FROM COMMANDS TO CONNECTIONS: HOW VOICE ASSISTANTS SHAPE AND ARE SHAPED BY CONSUMER-BRAND RELATIONSHIPS

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CONSUMER-BRAND RELATIONSHIPS

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Dissertation submitted to IPAM, to meet the requirements for the obtention of the degree of Master in Global Marketing performed under the scientific supervision of Prof. Dr. Lama Al Imam and Prof. Dr. Mafalda Nogueira.

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## DECLARATION OF COMMITMENT TO ETHICAL WRITING

I, Francisca Santos Oliveira, declare on my honour that the work presented here to obtain a Master's degree in 2025 from the Instituto Português de Administração de Marketing is original, the result of research I have carried out, and that the use of contributions or texts by other authors is duly referenced, in accordance with the principles and rules of Copyright and Related Rights.

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## ABSTRACT

Voice Assistants (VAs) such as Amazon’s Alexa, Apple’s Siri, and Google’s Google Assistant are transforming the way consumers interact with brands. These voice-based technologies offer a convenient communication channel that influences Consumer-Brand Relationships (CBR). While their popularity grows, current literature reveals gaps in understanding the dynamics between technological advancements and CBR. This study seeks to address these gaps through two specific objectives: first, to Understand how Users’ Interactions with Voice Assistants Influence Brand Engagement; and second, to Investigate the Role of Brand Credibility in Mitigating Privacy Concerns with Voice Assistants. These goals respond directly to prior calls for research on the role of VAs in fostering consumer engagement and the limited understanding of whether brand credibility alleviates users’ privacy concerns with VAs. A mixed-methods approach was employed to investigate the research objectives. The first phase involved a quantitative survey designed to capture users’ experiences with VAs and recruit participants for further qualitative inquiry. A total of 79 individuals were surveyed, and 23 in-depth semi-structured interviews were conducted with users of VAs. This combination of methods enabled both the identification of usage patterns and a deeper understanding of users’ perceptions. Findings revealed an asymmetric, bidirectional influence between VAs and CBR. On one hand, the VA acts as an intermediary between the consumer and the brand, enabling personalised and convenient interactions that can enhance brand engagement. However, this effect is not consistent – some users feel more connected and engaged to the brand, while others view the VA as a purely technological tool, with no impact on brand engagement. On the other hand, brand credibility emerged as a consistent mitigator of privacy concerns with VAs. Users demonstrated greater trust in VAs from credible brands (e.g., Apple, Google), associating credibility and scale with data security – even in the absence of technical understanding. This study contributes a more differentiated view to the literature, showing that while VAs can foster engagement, the outcome depends on users’ subjective interpretations. In contrast, brand credibility consistently plays a reassuring role. As Artificial Intelligence (AI) technologies are transforming how brands interact with consumers, brands must adapt not only their technological offerings but also how they build and maintain relationships with consumers.

**Keywords:** Voice Assistants, Consumer-Brand Relationships, Interactions, Brand Engagement, Privacy Concerns, Brand Credibility, Artificial Intelligence.

## RESUMO

Assistentes de Voz, como a Alexa da Amazon, a Siri da Apple e a Google Assistant da Google, estão a transformar a forma como os consumidores interagem com as marcas. Estas tecnologias baseadas em voz oferecem um canal de comunicação conveniente, que influencia as Relações entre os Consumidores e as Marcas. Ao tornarem-se cada vez mais populares, a literatura atual revela lacunas na compreensão das dinâmicas entre os avanços tecnológicos e as Relações entre os Consumidores e as Marcas. Este estudo procura colmatar essas lacunas através de dois objetivos específicos: primeiro, compreender de que forma as Interações dos Utilizadores com Assistentes de Voz, Influenciam o Engajamento com a Marca; e segundo, investigar o papel da Credibilidade da Marca na Mitigação das Preocupações com a Privacidade associadas aos Assistentes de Voz. Estes objetivos respondem diretamente a apelos anteriores de investigação sobre o papel dos Assistentes de Voz no engajamento do consumidor com a marca; e à limitada compreensão do papel da credibilidade da marca, em reduzir as preocupações de privacidade que os utilizadores têm em relação aos Assistentes de Voz. Foi adotada uma abordagem de métodos mista para investigar os objetivos definidos. A primeira fase consistiu num questionário quantitativo com o intuito de compreender as experiências dos utilizadores com Assistentes de Voz e recrutar participantes para uma fase qualitativa posterior. Um total de 79 respostas foram obtidas através do inquérito, e 23 entrevistas aprofundadas foram conduzidas com utilizadores de Assistentes de Voz. Esta combinação de métodos possibilitou tanto a identificação de padrões de utilização de Assistentes de Voz, como a compreensão aprofundada das perceções dos utilizadores. Os resultados revelaram uma influência bidirecional assimétrica entre os Assistentes de Voz e as Relações entre os Consumidores e as Marcas. Por um lado, o Assistentes de Voz funciona como um intermediário entre o consumidor e a marca, facilitando interações personalizadas e convenientes que podem reforçar o engajamento com a marca. No entanto, este efeito não é consistente – alguns utilizadores sentem-se mais engajados com a marca, enquanto outros vêm a Assistente de Voz apenas como uma ferramenta tecnológica, sem impacto no seu engajamento com a marca. Por outro lado, a credibilidade da marca revelou-se um fator consistente na mitigação de preocupações com privacidade associadas aos Assistentes de Voz. Os utilizadores demonstraram maior confiança em Assistentes de Voz de marcas credíveis (p. ex., Apple, Google), associando a sua credibilidade e escala, à segurança dos dados – mesmo quando os utilizadores não possuem conhecimento técnico. Este estudo oferece um contributo

diferenciado para a literatura, ao demonstrar que, embora os Assistentes de Voz possam fomentar o engajamento com a marca, este efeito depende da percepção subjetiva dos utilizadores. Em contraste, a credibilidade da marca desempenha um papel consistente e tranquilizador. Tendo em conta que as tecnologias de Inteligência Artificial estão a transformar a forma como as marcas interagem com os consumidores, as marcas devem adaptar não só as suas ofertas tecnológicas, mas também a forma como constroem e mantêm relações com os consumidores.

**Palavras-chave:** Assistentes de Voz, Relações Consumidor-Marca, Interações, Engajamento com a Marca, Preocupações com a Privacidade, Credibilidade da Marca, Inteligência Artificial.

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## LIST OF ABBREVIATIONS

- AI: Artificial Intelligence
- AI-EVA: Artificial Intelligence-Enabled Voice Assistant
- CAGR: Compound Annual Growth Rate
- CBE: Consumer-Brand Engagement
- CBR: Consumer-Brand Relationships
- CCPA: California Consumer Privacy Act
- GDPR: General Data Protection Regulation
- ML: Machine Learning
- NLP: Natural Language Processing
- VA: Voice Assistant
- WOV: Word of Voice

## INTRODUCTION

*“I feel like Siri almost knows me. I’m with her every day. She even gives me suggestions for songs I want to play.” (P3, Student, 22).* These words were a real statement from a consumer describing their relationship with Siri. Siri could be their wife, sister or best friend, but, in reality, Siri is merely their Voice Assistant (VA). This is the goal for every brand – to create a communication with their consumers that allows the brand to know their preferences and become part of their daily lives, to the point in which the brand can even understand private aspects of the intimate home: *“Google knows exactly how often I open my fridge, how often I cook.” (P11, Professor, 56).*

Given the above reflection, this chapter introduces the empirical phenomenon under investigation, justifies its relevance, and presents the motivation for studying it.

VAs, such as Amazon’s Alexa, Apple’s Siri and Google’s Google Assistant, have emerged as important shopping assistants, influencing consumer behaviour (Klaus & Zaichkowsky, 2021). These systems behave similarly to real human assistants, providing the professional, technical, and social support that individuals need in their everyday lives (Yang & Lee, 2018). By enabling consumers to engage in various activities such as seeking information and shopping for specific items without the need for physical interaction with a user interface (e.g., no screen or keyboard touch), VAs offer a highly convenient channel that influences Consumer-Brand Relationships (CBR) (McLean et al., 2020).

VAs are software agents designed to operate on specialised speakers or smartphones. These systems process voice commands and provide responses based on those commands (Hoy, 2018). VAs are constantly listening for a specific trigger word (e.g., “Hey Alexa”; “Hey Siri”). Upon detecting the keyword, the device captures the user’s voice, interprets the language, and generates a response, all in real-time (McLean et al., 2020). VAs can also be incorporated into smart gadgets – physical devices, that require an internet connection and house the VA (Perry, 2022). The key difference lies in the fact that the VA can operate independently of a smart gadget – a smart gadget is just one way to access the VA (Perry, 2022). However, the reverse is not true: without internet access or activation through a trigger word, a smart gadget is essentially non-functional (Perry, 2022).

The global VAs market was valued at approximately US\$ 5,730.6 million in 2023 and is expected to exceed US\$ 47,366.3 million by 2032, growing at a compound annual growth rate (CAGR) of 26.45% from 2024 to 2032 (Analytica, 2024). This growing role of VAs is attracting

significant interest from both practitioners and researchers (Flavián et al., 2022) and is reshaping how consumers interact with brands (Melumad, 2023). In line with Zaki et al. (2024), the literature emphasises the importance of further investigating these relationships, underscoring the intricate dynamics between technological advancements and CBR.

Motivated by the growing academic and practical interest in this emerging area, the general research objective of this study was to understand, “In what ways does the Use of Voice Assistants Shape and is Shaped by Consumer-Brand Relationships?”. To address this mutual influence, the specific research objectives aimed at exploring the influence between different dimensions of analysis of VAs with different dimensions of analysis of CBR.

To clearly demonstrate that the specific research objectives of this study were thoroughly developed to address gaps identified in the literature, a Table A1 – outlining each specific research objective, its pertinence, and the gap it sought to address – is provided in the Appendix A. This enables the reader to understand how the investigation is grounded in prior academic work.

Following the suggestion of Santos and Nogueira (2023), each specific research objective was designed to make a partial yet meaningful contribution to addressing the general research objective of this investigation. The first specific research objective was to understand how dimensions of analysis of VAs (specifically interactions) influence dimensions of analysis of CBR (specifically brand engagement), which corresponds to the first specific research objective – Understand how Users’ Interactions with Voice Assistants Influence Brand Engagement. The second specific research objective was to investigate how dimensions of analysis of CBR (specifically brand credibility) mitigate dimensions of analysis of VAs (specifically privacy concerns), which corresponds to the second specific research objective – Investigate the Role of Brand Credibility in Mitigating Users’ Privacy Concerns with Voice Assistants.

After presenting the general research objective and the two specific research objectives, it is important to note that interactions and privacy concerns are not the only dimensions of analysis of VAs, in the same way that brand engagement and brand credibility are not the only dimensions of analysis of CBR. However, based on the gaps in existing literature, identified in Table A1, Appendix A, these particular dimensions of analysis were selected for the current study.

It is important to position the scientific research within a less developed area of knowledge (Santos & Nogueira, 2023). In this context, identifying these gaps in the current literature supported the formulation of the two specific research objectives. By doing so, this study

reinforces its legitimacy, building a solid foundation in areas recognised as relevant for investigation.

This study adopted a mixed-methods approach to address the specific research objectives comprehensively. The first phase consisted of a quantitative survey aimed at exploring usage habits and perceptions of VAs. Additionally, the survey served to recruit eligible individuals for the second phase of data collection: qualitative semi-structured interviews. To be eligible, participants needed to be 18 years old or older and users of VAs. Those who met these criteria and expressed willingness to participate in follow-up semi-structured interviews, were invited to do so. The second phase of data collection involved qualitative semi-structured interviews, designed to provide a deeper understanding of complex and subjective factors – aspects that cannot be fully captured through a survey alone. This phase aimed to explore in greater depth how the use of VAs shapes and is shaped by CBR. Participants were selected through purposive sampling to ensure relevance and richness of the data collected. Combining quantitative and qualitative data added significant value to this study, by demonstrating how the two methods complement each other: while the survey data provided an overall view of users' perceptions, the semi-structured interviews offered deeper insights into their experiences, opinions, and the reasons behind these perspectives. This combined approach is essential to any scientific investigation seeking to explain behaviour patterns.

To facilitate the reader's understanding, the structure of this study will be briefly outlined. The chapter 2 presents a review of the literature related to VAs, CBR and their reciprocal influence. Chapter 3 introduces the model of analysis applied in this study. Chapter 4 outlines the methodology, including the participants, data collection instruments, and data analysis procedures. The research results are detailed in Chapter 5, organised by the four dimensions of analysis of this study – (1) Interactions between Users and Voice Assistants; (2) Consumer Engagement with Brands through the Use of Voice Assistants; (3) The role of Brand Credibility in the Use of Voice Assistants; (4) Privacy Concerns with Voice Assistants. Chapter 6 discusses the findings in relation to the two specific research objectives and the general research objective. Finally, Chapters 7 and 8 provide the conclusion, study limitations, and recommendations for future research.

## 2. LITERATURE REVIEW

The Literature Review is structured into three main sections, each offering a solid theoretical foundation to support the specific research objectives. According to established research practices, a well-organised literature review not only synthesises existing knowledge – and existing gaps – but also aligns its structure with the specific aims of the study to ensure clarity and coherence (Bem, 1995; Watson & Webster, 2020; Santos & Nogueira, 2023).

The general research objective is to understand “In what ways does the Use of Voice Assistants Shape and is Shaped by Consumer-Brand Relationships?” and the specific research objectives aim to explore the influence between different dimensions of analysis of VAs – interactions and privacy concerns – and different dimensions of analysis of CBR – brand engagement and brand credibility. This focus reflects the underlying logic of examining the relationship between two broad constructs (A and B) by analysing the interplay between their specific dimensions.

Each section includes subsections that align with the specific research objectives. This structure was intentionally designed to include only the sections and subsections that are relevant to the specific research objectives avoiding dispersion and maintaining a clear focus. Table B1, in the Appendix B, provides a detailed overview of how the Literature Review is structured in relation to the two specific research objectives.

To conclude the Literature Review chapter, a section with final considerations was included. This section synthesises the key insights presented throughout the chapter and offers a smoother conceptual transition into the following chapter – the Model of Analysis.

Articles were sourced from academic platforms such as B-ON, ResearchGate, ScienceDirect, Sage Journals, Scopus, and the SDU library website. It is important to acknowledge that, while VAs is a relatively recent phenomenon (Flavián et al., 2022), requiring the inclusion of newer studies, the theme of CBR is long established in the field of marketing (Fetscherin & Heinrich, 2014). Consequently, this study combines both recent sources and foundational literature, ensuring a thorough exploration of both topics – VAs and CBR – and its characteristics. On one hand, recent studies are essential for understanding the benefits and privacy concerns with VAs. On the other hand, seminal works provide the theoretical basis for understanding the significance of CBR and its key elements. This combination ensures a balanced and academically robust perspective that supports the analysis of the interplay

between VAs and CBR. Additionally, studies with objectives similar to those of this study, were also included in the literature review. During the exploration of each article, the author carefully examined the reference lists to trace the development of knowledge.

Based on the insights from Santos and Nogueira (2023), a Table C1 developed by the author is provided in Appendix C, outlining practical research steps taken during the collection of scientific articles for the literature review. It presents the search strategies used, such as database selection, the use of Boolean Operators, term combinations, and refinements such as singular and plural forms, exact terms, language variations, and considerations regarding publication timeframe. Additionally, examples of keywords used in the search process are included. These strategies were designed to ensure a relevant selection of scientific articles for the literature review chapter.

## **2.1. Voice Assistants**

Artificial Intelligence (AI) is transforming how brands interact with consumers (Azevedo et al., 2024), offering innovative tools for personalisation, consumer interaction, and experience enhancement (Deryl et al., 2023). According to Ortega and Lucia-Palacios (2023), VAs – AI-powered intelligent products designed to assist consumers in daily activities through voice control (Fernandes & Oliveira, 2020) – are at the forefront of this transformation, enabling more personalised and interactive communication between brands and consumers. Studies estimate that over 27% of the global online population regularly uses voice search, and its influence on consumer habits is expected to expand (Jain et al., 2023).

Recognising their potential, major global technology companies have launched their own VAs, such as Apple’s Siri, Amazon’s Alexa, and Google’s Google Assistant (Kang & Shao, 2022), extending their functionality beyond mobile devices to smart cars, speakers, and televisions (Hoy, 2018).

The origin of VAs, from a technical perspective, dates back to 2010, with the release of Apple’s Siri (Hoy, 2018). However, the cultural acceptance of voice-interactive technologies extends far beyond (Leblebici, 2024). According to Humphry and Chesher (2020), earlier innovations such as the phonograph from the 19th century, together with technologies such as the telephone and radio, laid the groundwork for public familiarity with voice technologies.

These inventions, along with the influence of popular science fiction, have greatly shaped the development and design of today's VAs (Hoy, 2018; Humphry & Chesher, 2020; Natale, 2021).

Apple's Siri assistant – first released as a separate app in 2010 before being integrated into iOS in 2011 – is the longest available VA (Hoy, 2018). Microsoft quickly followed with the launch of Cortana in 2013 (Hoy, 2018). In 2014, Amazon introduced Alexa alongside its Echo-connected home speaker, marking the shift to independent smart home devices that required separate purchases (Hoy, 2018; Humphry and Chesher, 2020; Natale, 2021). In 2016, Google's Assistant was announced, along with the home speaker (Hoy, 2018). Although each assistant – Apple's Siri, Microsoft's Cortana, Amazon's Alexa, Google's Assistant – has distinct characteristics, the fundamental functions are the same (Hoy, 2018).

VA is a software programme that allows users to interact with devices by speaking to them (Hoy, 2018). The software constantly listens for a trigger word to activate it. Once it hears that key word, it records the user's voice and sends it to a central computing system which analyses and interprets the user's voice commands and provides the assistant with the proper response (Hoy, 2018). Some VAs are integrated into smartphones (Hoy, 2018; Leblebici, 2024). For instance, Siri is built into all Apple devices, including iPhones, MacBook, iPads, Apple Watch (Hoy, 2018; Leblebici, 2024). At the same time, VAs can also operate through smart gadgets, which are physical objects – such as smart speakers (Amazon Echo) and smart home devices (lights and locks) – controlled by VAs (Leblebici, 2024). Essentially, the VA is the software that processes voice commands, and the smart gadget is the physical object one uses to communicate with the VA (Leblebici, 2024). According to Leblebici (2024), a key marketing promise is the ability to control various smart gadgets – such as lights, alarms, locks – simply by using voice commands.

Academic literature offers two main perspectives on VAs (Leblebici, 2024). From one perspective, a VA is regarded as an advanced AI system, also known as “*conversational agent*”, designed to process natural language and generate responses that facilitate user interaction (Griol et al., 2013). In contrast, another perspective humanizes these technologies, considering them as entities capable of holding conversations similar to humans (Leblebici, 2024). Hoy (2018) emphasises this perspective, describing VAs as a realisation of science fiction fantasies where humans communicate with machines. Rather than seeing these perspectives as opposites – either as simple input-output systems or as humanlike agents – it is important to recognise VAs as complex technologies (Leblebici, 2024).

Combining the perspectives of Rauschnabel et al. (2018), McLean and Osei-Frimpong (2019), and Loan et al. (2024), there are four categories that motivate individuals to use VAs:

(1) Utilitarian Benefits – individuals use a VA to find information, learn about a topic or to complete a task – (2) Hedonic Benefits – individuals use a VA for enjoyment or entertainment – (3) Symbolic Benefits – individuals use technology to reaffirm their social status, for example some individuals may want to appear technologically advanced through using a VA – and (4) Social Benefits – individuals use VAs to feel socially connected.

Advancements in natural language processing (NLP), also referred to as computational linguistics, have enabled VAs to generate meaningful responses more efficiently (Hoy, 2018). Hirschberg and Manning (2015) attribute these improvements to four key factors: significant growth in computing power; access to extensive linguistic data; the advancement of effective machine learning (ML) techniques; a deeper understanding of human language structure and its use in social contexts. As personal computers have become increasingly powerful and the amount of online text available for analysis has grown, researchers have leveraged these data to train VAs to respond more naturally and meaningfully (Hoy, 2018). VAs are now able to interpret requests made in various ways and understand the user’s intended meaning. For instance, and using the valuable example provided by Hoy (2018), when asking Google Assistant to remember where a car was parked, a user can phrase the request in different ways, such as: *“I left the car on 6th street”* or *“The car is in the south lot”*. In all cases, Google will store this information and be able to recall it when asked later. This flexibility is made possible by advancements in NLP, which reduces user frustration by allowing for more intuitive interactions (Hoy, 2018).

As a result, and building the bridge to the following subsection, VAs have transformed traditional human-computer interactions by eliminating the need for physical touch through their advance voice-recognition capabilities (Hoy, 2018; Pagani et al., 2019). In this sense, the following subsection – 2.1.1 Users’ Interactions with Voice Assistants – explores users’ interactions with VAs, highlighting how VAs have become an integral part of everyday life (Hu et al., 2020; Poushneh, 2020).

### **2.1.1. Users’ Interactions with Voice Assistants**

VAs have become an integral part of everyday life (Hu et al., 2020; Poushneh, 2020), assisting consumers with a range of daily tasks (Canziani & MacSween, 2021). VAs are often used for entertainment purposes, such as telling jokes and engaging in playful conversations

(Oranç and Ruggeri, 2021). Besides this, users tend to use VAs for tasks requiring quick, straightforward responses, such as setting reminders and alarms, checking weather updates, playing music, requesting information, making phone calls, and managing smart home devices (Hoy, 2018; Kim & Choudhury, 2021). While these tasks can also be performed through traditional app interfaces (Hoy, 2018), VAs, through their use of spoken language, offer a more natural and convenient form of interaction, compared to typing on a keyboard or phone (Canziani & MacSween, 2021), which improves the consumer experience (Daugherty et al., 2018). The hands-free convenience of VAs during conversations (Jampala et al., 2024) enables multitasking (Huh et al., 2022), allowing consumers to complete tasks effortlessly (Strayer et al., 2017). This is particularly evident in the automotive environment: driving demands attention to surroundings, and VAs help manage tasks with less effort, attention, and manual intervention (Liu et al., 2023). Additionally, information provided by VAs, such as traffic updates or driving directions, can assist drivers in making more accurate decisions (Liu et al., 2023).

VAs' ability to manage complex requests and interact effectively with users (Lucia-Palacios & Pérez-López, 2021; McLean & Osei-Frimpong, 2019), has contributed to their growing popularity among online shoppers (Kautish et al., 2023). VAs collect users' voice interactions, which companies like Google use to infer personal attributes and preferences. These inferences contribute to user profiling and enable more personalised advertising and service recommendations (Ma & Chen, 2024). Besides this, users' interactions with VAs generate engagement signals – such as corrective actions – which are used to automatically create training data. By learning from both successful and failed interactions, the system identifies where improvements are needed and updates its models accordingly. This process enhances the assistant's accuracy and ultimately leads to better user experience (Muralidharan et al., 2019).

In the past, companies such as Google, Microsoft, Amazon, and Facebook primarily relied on text-based interactions to strengthen their relationships with consumers (Rawool et al., 2024). However, with the introduction of omnichannel – the management of different shopping channels to ensure a seamless consumer experience and optimise performance across all of them (Verhoef et al., 2015) – purchasing tools like AI-powered VAs, consumers now consider voice-based communication to be much more effective (Maroufkhani et al., 2022), with VAs increasingly recognised for facilitating more seamless consumer interactions (Badghish et al., 2023). In a study conducted by McLean et al. (2020), one participant highlighted this sense of convenience and ease of use of their smart gadget – Echo from Amazon – and its integrated VA

– Alexa – stating: *“The beauty of my Echo is how easy it is to use. Most things are done hands-free. I don’t have to try and find one of hundreds of apps on my phone or search online, I just ask Alexa something, and that’s it. I don’t need to pick up my phone, tablet, or laptop and go through all of the hassle to get to the end information, I speak, and I get a response”*, quote from participant Kate, cited in McLean et al. (2020, p. 318). In line with this, studies indicate that the attractiveness of VAs enhance brand interaction (Zaki et al., 2024). According to Hernandez-Ortega and Ferreira (2021), VAs play the central role in interactions, moving beyond being mere intermediaries by engaging consumers in real-time, human-like conversations and gradually learning their preferences. As a result, consumers form emotional connections with their SVA, interacting with it as if it were a person, even while recognising it as a machine (Van Der Loos, 2014; Louie et al., 2014; Han & Yang, 2018; Xu, 2020). This is supported by other authors such as Weidmüller (2022) – who notes that humans who interact with VAs often do not perceive them merely as machines but rather attribute to them social and human-like qualities – Cerekovic et al. (2016) and Song et al. (2022) – who suggest that users can develop a sense of closeness and passion for an AI application, similar to their experiences with human beings

Ortega and Lucia-Palacios (2023) provide a complementary perspective by exploring the concept of Word of Voice (WOV) – the act of VAs verbally interacting with consumers and guiding them with tailored suggestions during the purchasing journey. Unlike traditional forms of advertising or recommendation – such as word of mouth and electronic word of mouth – WOVI interactions are inherently personal and conversational. The nature of WOVI is driven by three key dimensions of AI capabilities (Ortega and Lucia-Palacios, 2023):

- 1) Cognitive, which refers to VAs’ ability to effectively accomplish goal-oriented tasks, relying on advanced analytical skills (Lopatovska et al., 2018) to interpret and process data successfully (Song et al., 2022; Ortega & Lucia-Palacios, 2023).
- 2) Emotional, which refers to VAs’ capacity to recognise and interpret consumers’ emotions, offering empathetic responses and emotional reassurance (Sundar et al., 2016; Lv et al., 2021; Song et al., 2022; Ortega & Lucia-Palacios, 2023).
- 3) Social, which is defined as the VA’s ability to engage with consumers in a personalised way, creating the perception of interacting with another social entity, making interactions feel familiar and human-like (Heerink et al., 2009; Fernandes & Oliveira, 2020; Ortega & Lucia-Palacios, 2023).

Together, these attributes not only enhance the perceived value of recommendations but also strengthen the CBR by making interactions feel personal and responsive (Ortega & Lucia-Palacios, 2023).

Over the past decade, the performance of VAs has improved consistently in areas such as answer quality, voice clarity, response time, and recognition, encouraging users to engage more with these devices (Berdasco et al., 2019). Based on these interaction qualities, users may begin to distinguish between brands and recognise the unique personality of each VA (Jain et al., 2021). In line with this, previous research has demonstrated that the tone, age, and gender of a voice can affect how persuasive a speaker is perceived during interactions (Goodman & Mayhorn, 2022; Pias et al., 2024). According to a study conducted by Pias et al. (2024), some participants perceive middle-aged male voices to convey confidence, expertise, and experience, while others were more influenced by the sound of a younger female voice, which they associated with a calming and youthful quality. Similarly, Guha et al. (2022) suggests that users typically prefer VAs with a friendly and engaging tone over those that sound robotic or monotone. People are more likely to connect with machines that reflect their own identity (Piercy et al., 2024). Three years before, S. K. Lee et al. (2021) had already observed this phenomenon with Siri, where users reported feeling more trust when Siri's voice matched their gender identity. In this sense, VA designers should offer users the possibility to easily customise VA's voices with different tones, ages, and genders (Pias et al., 2024).

As an important note of reflection, and considering this subsection focuses on the interactions with VAs, it is crucial to recognise that, VAs, as an AI technology, may elicit different reactions across different age groups, due to variations in digital literacy, cognitive preferences, and perceived utility (Kim & Choudhury, 2021; R. Kang & Rau, 2024). According to Kim and Choudhury (2021), older adults, aged 66 and above (R. Kang & Rau, 2024), often approach VAs with initial scepticism, but their usage improves with familiarity. This aligns with research conducted by Jones et al. (2021), which highlights the anthropomorphic features of VAs – the attribution of human characteristics to non-human entities (Epley et al., 2007) – as pivotal in reducing loneliness among older adults, suggesting that older adults can successfully use VAs and may benefit from its interactions as a form of companionship (Jones et al., 2021).

Jones et al. (2021) identify four dominant themes in anthropomorphic interactions with VAs. Table 1, created by the author, presents these four themes, along with a brief description and an example. All the information in the table is derived from Jones et al. (2021).

**Table 1**

*Dominant Themes in Anthropomorphic Interactions with VAs*

<b>Theme</b>	<b>Description</b>	<b>Example</b>
(1) Relational greetings	Expressions to greet Alexa, similar to how one would typically greet a human companion.	<i>“Hello, Alexa”</i> <i>“Alexa, I’m home”</i> (Jones et al., 2021, p. 4)
(2) Comments/questions	Interactions where the user directly communicates with the VA, asking about it or addressing it as a real person.	<i>“Alexa, how old are you?”</i> <i>“Alexa, I have been ignoring you, I’m sorry”</i> (Jones et al., 2021, p. 4)
(3) Polite behaviours	User requests or commands, that follow politeness norms commonly used in human conversations.	<i>“Alexa, please play some lullabies”</i> <i>“Alexa, please let me know when it is four o’clock”</i> (Jones et al., 2021, p. 4)
(4) Reactions	User verbal reactions to Alexa’s responses.	<i>“Alexa, that’s enough”</i> <i>“That was fun, thank you”</i> (Jones et al., 2021, p. 4)

Source: Self-elaboration with information from Jones et al. (2021)

While some authors approach VAs from a more emotional perspective – such as Hernandez-Ortega and Ferreira (2021), Song et al. (2022) and Weidmüller (2022), who emphasise users’ emotional bonds and perceptions of human-likeness – others adopt a more functional view – such as McLean and Osei-Frimpong (2019), Canziani and MacSween (2021), and Hu et al. (2020), who focus on utility, autonomy, and task efficiency. Yet, one point remains clear: users are not just interacting with VAs in functional ways, but are also engaging with them in emotional and social ways, which enhances their everyday experiences. VAs combine emotional connection with technological interaction, creating a dynamic and ever-evolving subject of study (Zaki et al., 2024).

Nevertheless, the same intelligent features that enhance user experiences can also give rise to concerns, highlighting the need to examine the existing concerns related to VAs, an issue addressed in the next subsection (Kang & Shao, 2022; Lucia-Palacios & Pérez-López, 2021).

### **2.1.2. Users' Privacy Concerns with Voice Assistants**

With the rapid advancement of AI technology and the increasing popularity of intelligent products in consumers' daily lives, concerns have emerged regarding the intelligence level of these products (Chi et al., 2020; Kang & Shao, 2022).

While various concerns exist surrounding VAs, such as the potential for misinterpretation (Jain et al., 2023), this study will focus specifically on privacy concerns (Mou & Meng, 2023). Therefore, the following subsection will present general concerns as contextualization but will primarily focus on privacy concerns. The justification for focusing on privacy concerns lies in the constant data collection by VAs, which contributes to consumer resistance, as many express discomfort over the perceived invasiveness of these systems (Mou & Meng, 2023).

A key issue pertains to the misinterpretation of user input by VAs, which can lead to user frustration and technology irritation (Jain et al., 2023) – users often encounter service gaps, such as misinterpretation of commands, incorrect responses or technical failures, leading to frustration and avoidance behaviours (Y. Lee & Kim, 2018; Niu et al., 2020; Jain et al., 2023). Jain et al. (2023), noted that many users report that VAs often fail to recognise accents or understand commands correctly, resulting in irrelevant or repeated responses. This may result in a frustrating experience, causing the user to feel discouraged and discontinue the interaction with the VAs, ultimately abandoning the intended task (Jain et al., 2023). Building on this concern, Brewer (2023) points out that users tend to have low expectations of voice recognition and AI when it comes to responding to complicated questions.

In the health-related contexts, in some cases, the misinterpreted information provided by VAs, may result in serious harm (Bickmore et al., 2018; Brewer et al., 2022). Still, and according to Brewer et al. (2022), many users express a desire for this technology to have access to their health and medical history, including details about their physicians and medical records, to provide personalised recommendations. Rather than viewing VAs as standalone solutions, Zhan et al. (2024) noted that users believe that healthcare VAs are unlikely to replace doctors, emphasising instead that these technologies – that provide valuable support in medical diagnosis (Wienrich et al., 2021) – should serve as a supportive tool alongside medical professional (Ermolina & Tiberius, 2021).

Beyond technological performance, privacy concerns have become a central issue affecting user adoption of VAs (Mou & Meng, 2023) and have been the focus of public discussion (Bolton et al., 2021). Privacy concerns refer to the individual's apprehension regarding the potential misuse, unauthorised access, or improper disclosure of their personal information by

external entities or organisations (Mou & Meng, 2023). Examples of such concerns include conversations being recorded without users' knowledge (Chalhoub & Flechais, 2020), the continuous collection of voice data (Park et al., 2020), and the misuse or inappropriate handling of personal information (Huang et al., 2020). In line with these concerns, consumers question whether VAs appropriately collect, process and safeguard their personal data (Huang et al., 2020)

The intelligent attributes of VAs (Kang & Shao, 2022), including autonomy (Hu et al., 2020; Pitardi & Marriott, 2021) and interactivity (Lucia-Palacios & Pérez-López, 2021) play a significant role in shaping consumers' perceived usefulness (McLean et al., 2020) – the degree to which a consumer believes that using a smart product enhances their personal efficiency, such as improving organisation and productivity (Chuah et al., 2016). However, previous studies have indicated that the autonomy of VAs, can lead to a significant sense of intrusiveness (Benlian et al., 2019; Mani & Chouk, 2019). This perceived intrusiveness occurs because, to meet consumers' needs, VAs must continuously listen their surroundings (Voorveld & Araujo, 2020; Lucia-Palacios & Pérez-López, 2021; Kang & Shao, 2022; Seymour et al., 2023). Even when waiting for a wake word – such as “Alexa” – the VA is constantly listening for a trigger (Mou & Meng, 2023). Although it remains inactive until it hears the wake word, the continuous listening might feel invasive to some users, as these technologies are always “on” and processing audio in the background (Voorveld & Araujo, 2020; Lucia-Palacios & Pérez-López, 2021). The constant data collection by VAs contribute to resistance, with consumers expressing discomfort over perceived invasiveness (Mou & Meng, 2023). This intrusiveness stems from privacy concerns that VAs may share personal data without explicit consent, making their constant data collection – essential for their interactive features – a key vulnerability that sets them apart from static web platforms (Kang & Shao, 2022; Mou & Meng, 2023).

Given that VAs continuously collect, process, and store personal information to deliver personalised interactions (Lopatovska et al., 2018), regulations have been established to protect users' rights and ensure responsible data handling practices. In the European Union, the General Data Protection Regulation (GDPR) imposes strict obligations on companies, requiring transparency about data collection, explicit user consent, and giving individuals the right to access, rectify, or erase their personal data (Voigt & Von Dem Bussche, 2017). Similarly, in the United States – a country home to some of the most prominent brands in the VA space, such as Apple with Siri and Google with Google Assistant – frameworks such as the California Consumer Privacy Act (CCPA) provide consumers with rights over their personal information, including the right to know what data is collected and to request its deletion (Bukaty, 2021).

These regulations seek to mitigate privacy concerns by promoting corporate accountability and strengthening consumers' rights (Martin & Murphy, 2016).

In a different context, VA technology is also being explored as a tool with valuable applications. For instance, several banks in the United Kingdom have explored the adoption of VAs for banking, achieving varying levels of success (Vassilev et al., 2020). Similarly, leading banks across the globe have already begun adopting VAs and voice biometric systems, achieving varying levels of success (Khan & Aithal, 2024).

While privacy concerns with VAs persist, brands are perceived as a sign of the product's quality which reduces the perceived risk for consumers (Jain et al., 2021). In this sense brand credibility serves as an important mitigating factor (Jain et al., 2021).

## **2.2. The Relationship between Consumers and Brands**

Consumers develop relationships with brands similar to those they form with other individuals, and these connections can vary between individuals (Fournier, 1998; Muniz & O'Guinn, 2001). Cuesta-Valiño et al. (2021) add to this perspective by suggesting that consumers form committed relationships with brands that provide happiness and positive experiences. Existing literature suggests that an emotional connection with an object influences the desire to maintain proximity to it (Thomson et al., 2005). Consequently, when consumers feel intimate with a brand, product, or service, they strongly resist ending the relationship, fostering intentions to repurchase (Bügel et al., 2010; Sarkar et al., 2012; Dong et al., 2019).

Building and maintaining relationships with consumers, lies at the heart of marketing practices (Fournier et al., 2012). Marketers have long maintained a strong interest in understanding relationships between consumers and brands – what defines these relationships, the reasons why they are formed, and how they influence consumer behaviour (Fournier et al., 2012).

To properly ground this discussion, it is first necessary to address a recurring ambiguity in the literature: the interchangeable use of the terms "Consumer" and "Customer". Therefore, subsection 2.2.1 focuses on clarifying this distinction and justifying the use of the term "Consumer" throughout this study. Following this clarification, subsection 2.2.2 delves into the theoretical foundations of Consumer-Brand Relationships, presenting key perspectives from the literature over time. Finally, subsection 2.2.3 examines two central constructs within the

theme of CBR – brand engagement and brand credibility – that play a pivotal role in shaping the strength and quality of these relationships (Sweeney & Swait, 2007; Kumar, 2020).

### **2.2.1. The terms “Consumer” versus “Customer” in Brand Relationships**

As an introductory note for this subsection, although “customer” and “consumer” have different meanings, much of the academic literature tends to use both terms interchangeably, often without a clear distinction.

While the term “customer” typically refers to an individual who purchases a product or service (Datta, 2016), “consumer” denotes the person who actually uses or experiences the product (Datta, 2016). To illustrate this distinction with an example created by the author of this study: in the case of a child’s toy, the consumer is the child who plays with the toy (the person who experiences the product) and the customer may be the mother or father (the person who purchased the product). As Abboud et al. (2020) note, the term “consumer” is much broader and may include “customers”.

Although some authors, such as So et al. (2016) and Cheng and Jiang (2021), focus on the notion of Customer-Brand Relationships; others, such as Fournier (1988), Fournier et al. (2012), McLean et al (2020) and Zaki et al. (2024), emphasise Consumer-Brand Relationships; and others, such as Kumar (2020), mix the two terms (customer-brand relationships and consumer-brand relationships); in this study, the term “Consumer-Brand Relationship” will be adopted. This choice is justified for two main reasons. First, to emphasise emotional bonds: since consumers are the ones who experience the product (Datta, 2016), the concept of “Consumer-Brand Relationship” better captures the emotional and psychological aspects of the connection between individuals and brands, beyond mere transactions. Second, due to its academic prevalence: the study conducted by Fournier (1988) on Consumer-Brand Relationships laid the foundation for much of the current knowledge exploration in this field, making it a dominant framework in current branding research. Fournier (1998) played a pioneering role in exploring the relationship between consumers and brands (Loureiro, 2012).

### **2.2.2. Conceptualising CBR: Consumer-Brand Relationships**

The concept of CBR has been extensively discussed in the marketing field, with its origins believed to date back to the end of the 20th century (Loureiro, 2012). Although early research on consumer relationship marketing considered brands mainly as facilitators of transactions (Grönroos, 1997; Coviello et al., 2002), later studies have acknowledged the significant role of brands in building and maintaining enduring CBR (Loureiro & Sarmento, 2019; Thomson et al., 2005). CBR offer various advantages to both brands (e.g., enhanced brand reputation) and consumers (e.g., lower perceived risk) (Kumar, 2020).

It is acknowledged that CBR may take several forms, influenced by factors such as consumer personality and situational context (Fournier, 1998). Aaker et al. (2004) conceptualise brand relationships as a multidimensional construct encompassing commitment – a lasting desire to maintain a relationship, along with a willingness to put in the effort to make it work (Morgan & Hunt, 1994) – intimacy – a deep understanding between relationship partners, developed through the sharing of personal information (Altman & Taylor, 1973) – satisfaction – individuals' happiness within the relationship (Spanier & Lewis, 1981) – and self-connection – how strongly a relationship connects to and reflects a person's sense of who they are (Aron et al., 2000). On the other hand, Esch et al. (2006) offer a different perspective, identifying satisfaction, attachment – a deep, long-term emotional connection between the brand and the consumer (Esch et al., 2006) – and trust – a feeling that arises from a mutually built relationship with a brand (Esch et al., 2006) – as the core components of brand relationships. In line with this, Eggers et al. (2012) noted that when consumers trust a brand, they are more likely to purchase additional products from it and recommend it to others. Taking a distinct approach, Veloutsou (2007) draws from the human relationship paradigm, emphasising communication as a fundamental aspect of a relationship.

Brand trust is a widely studied concept – with contributions from scholars such as Morgan and Hunt (1994), Chaudhuri and Holbrook (2001), Wang and Emurian (2004), Pavlou et al. (2007), Gecti and Zengin (2013) – and is acknowledged as a key factor influencing human relationships across all levels (Zaidun et al., 2020). Back in the 80s, trust was already conceptualised as a sense of confidence and satisfaction, as it helps reduce the perceived risk involved in the purchasing process (Dwyer et al., 1987; Anderson & Narus, 1990). Later, Matzler et al. (2008) argued that brand trust functions as a psychological mechanism through which consumers minimise uncertainty and feelings of vulnerability (Chaudhuri & Holbrook, 2001).

Brand relationships serve as meaningful tools to support and manage consumers’ daily lives (MacInnis et al., 2014). These relationships function as enablers rather than ultimate goals in themselves (MacInnis et al., 2014). Consumers can develop meaningful relationships with everyday products (Fournier & Yao, 1997; Fournier 1998; Fournier & Mick, 1999). These relationships vary in intensity, ranging from casual connections to deeply intimate bonds (MacInnis et al., 2014) – sometimes even reaching a level of passion typically reserved for close friends and family (Aggarwal, 2004). Whether marketers can expect CBR to lead to behaviours such as brand loyalty depends largely on how the consumer feels about the brand (MacInnis et al., 2014).

According to Fournier (1998), brand loyalty research is very helpful when it comes to understanding CBR. Brand loyalty is a dynamic and multifaceted construct (Javalgi & Moberg, 1997) that has been defined and redefined through various theoretical lenses over the decades. Broadly, it has been defined from two main theoretical perspectives – the behavioural perspective and attitude-behaviour perspective (Bandyopadhyay & Martell, 2006). Table 2 was developed by the author as a comprehensive comparison tool between some of the definitions and perspectives of brand loyalty that have shifted and evolved over time. While the scholars listed below may not have been the first to introduce these concepts, they are among the key contributors to the ongoing development and refinement of brand loyalty theories.

**Table 2**

*The Evolution of the Concept of Brand Loyalty*

Year	Author	Focus	Characteristics	Critiques & Key notes
1964	Tucker		<ul style="list-style-type: none"> <li>Repeated purchasing patterns are sufficient to define loyalty.</li> </ul>	Critique: Behavioural approach is practical for measuring loyalty through observable metrics like purchase frequency, but it fails to capture the underlying psychological and emotional factors that often drive consumer behaviour (Jacoby & Chestnut, 1978).
1974	Blattberg & Sen			
1986	Kahn et al.	Behavioural	<ul style="list-style-type: none"> <li>Consistent buying patterns alone reflect consumer allegiance.</li> </ul>	Critique: Behavioural brand loyalty approach neglects the cognitive and emotional dimensions that play a significant role in fostering deeper consumer commitment (Rundle-Thiele & Bennet, 2001).
1990	Ehrenberg et al.			

1973	Jacoby and Kyner	Composite (behavioural + psychological)	<ul style="list-style-type: none"> <li>• The psychological commitment consumers feel toward a brand (positive emotions, preference, attachment) rather than solely purchasing behaviour.</li> <li>• Loyalty as a non-random behavioural response grounded in decision-making and evaluative processes.</li> <li>• Loyalty requires a strong positive attitude toward the brand.</li> </ul>	<p>Keynote: Day (1976) suggested that “<i>spuriously loyal customers</i>” – individuals who consistently purchase a brand, not because of a strong emotional connection or genuine preference, but due to external factors like convenience, lack of alternatives, or habitual behaviour – have no real connection to a brand’s attributes and can be easily swayed by competitors offering more attractive deals. Dick and Basu (1994) suggested that a favourable attitude and repeat purchase were required to define loyalty.</p>
1995	Schouten and McAlexander	Consumer subcultures	<ul style="list-style-type: none"> <li>• Loyalty extends beyond individual preferences to encompass shared consumption experiences and a sense of social belonging.</li> <li>• Loyalty in these subcultures is driven by shared consumption experiences and a sense of group identity.</li> </ul>	<p>Keynote: Belk and Tumbat (2005) examined “<i>brand cults</i>” where extreme loyalty emerges from quasi-religious devotion rooted in shared myths, rituals, and symbolic consumption.</p>

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Source: Self-elaboration

Since the study conducted by Fournier (1998), the field of CBR has gained significant attention, becoming a central focus for both marketing scholars and industry professionals (Alvarez et al., 2023). Fournier (1998) emphasises that brand relationships are purposive – playing meaningful roles in consumers’ lives – and complex – encompassing a wide range of forms. These relationships can be positive, neutral, or even negative (MacInnis et al., 2014; Alvarez et al., 2023). These differences are important because these range of forms shape how individuals think, feel and behave within relationships (Koerner, 2018).

The following references, drawn from the book “*Consumer-Brand Relationships: Theory and Practice*” (Fournier et al., 2012), were incorporated in this section to illustrate the importance of the relationship between brands and consumers. These contributions, written by industry leaders, offer valuable real-world perspectives. Each of the following professionals emphasises the central role that CBR play in successful branding, reinforcing its significance not only in academic theory but in real-world practice:

*“The consumer-brand relationship is a delicate dance that when properly choreographed can create material value for both the customer and the organisation.”* **Michael Simon**, Chief Marketing Officer, Panera Bread.

*“There are few concepts in marketing as illuminating as the consumer-brand relationship.”* **Baba Shetty**, Chief Strategy Officer, Hill Holliday.

In recent years, brand engagement has emerged as a critical factor in the development and strengthening of CBR. The growing attention to Consumer-Brand Engagement (CBE) is driven by the benefits it offers to firms, including enhanced CBR (Ndhlovu & Maree, 2022). As Kumar and Pansari (2016) note, an individual’s engagement with a brand often reflects an emotional bond. Consumers who engage with brands in this way become valuable assets, as their engagement contributes to the value of a firm (Kumar et al., 2017). Equally important, brand credibility emerges as a relevant concept in CBR, as it represents the cumulative effect of brand-to-consumer and consumer-to-brand communication over time (Sweeney & Swait, 2007). This is because consumers can form relationships with the brand, and the brand, in turn, communicates with the consumer (Sweeney & Swait, 2007). These dynamics underscore the importance of exploring engagement and credibility more deeply – particularly its role in shaping and sustaining CBR – which will be the focus of the following subsection.

As a note of conclusion, although it is acknowledged that the CBR is built on several key characteristics such as trust (Esch et al., 2006) and loyalty (Fournier, 1998), this study will specifically focus on engagement and credibility. This focus is justified by the growing relevance of engagement, particularly as interactions between consumers and brands have grown considerably in recent years (Kumar, 2020). Brand credibility, on the other hand, already incorporates a dimension of trustworthiness (Erdem et al., 2002; Erdem & Swait, 2004; Sweeney & Swait, 2007).

Establishing a connecting thread, the following subsection will further develop these two dimensions, offering a detailed review of the literature on engagement and credibility in CBR.

### 2.2.3 Engagement and Credibility in Consumer-Brand Relationships

In recent years, interactions between consumers and brands have expanded significantly (Kumar, 2020). Successful organisations have recognised the value of these interactions and are therefore prioritising consumer engagement to achieve a sustainable, long-term, competitive advantage (Costa & Loureiro, 2019).

The role of CBE is vital in developing and maintaining lasting CBR (Kumar, 2020). Brodie et al. (2011) define consumer engagement as a psychological state that arises from a consumer's interactive experiences with a focal entity, such as a brand or organisation. Expanding on this foundation, L. Hollebeek (2011) defined CBE as a consumer's positive thoughts, feelings, and actions related to a brand, which occur during, or, as a result of interactions with that brand. Offering another empirical perspective, Dwivedi (2015) described engagement as consisting of three key elements: vigour – the consumer's energy, mental strength, and willingness to put effort into interacting with a brand (Schaufeli et al., 2002) – dedication – the feeling of meaning, enthusiasm, pride and a sense of challenge (Schaufeli et al., 2002) – and absorption – the feeling of being completely focused and deeply engaged in brand interactions, where time seems to pass quickly (Schaufeli et al., 2002).

Overall, although researchers have presented various definitions of CBE, there is a shared consensus that it offers significant value to organisations, making it a critical area of focus (Kumar, 2020). Engaged consumers are expected to form long-term relationships with brands, reflecting their trust, commitment, satisfaction or loyalty (Bruneau et al., 2018; Harrigan et al., 2016; Jahn & Kunz, 2012; So et al., 2012). Engagement has emerged as a key strategy for enhancing CBR (Kumar, 2020).

The idea of interpreting CBE in terms of consumers' relationships with brands, has been frequently proposed and consistently supported in the literature (MacInnis et al., 2014). Literature suggests that highly engaged consumers form long-lasting relationships with brands and demonstrate positive behaviours towards them (Bowden, 2008; Gummerus et al., 2012; France et al., 2016). In other words, when consumers are deeply engaged with a brand, they develop emotional connections and actively interact with it through two-way communication (Kumar, 2020). Therefore, consumers engagement is considered a reliable indicator of a strong CBR (Carter, 2008; Sashi, 2012).

While brand engagement reflects the consumer's active involvement with the brand (Harrigan et al., 2017), brand credibility has been conceptualised as the relationship between the consumer and the brand over time (Sweeney & Swait, 2007; Y. K. Dwivedi et al., 2017).

From this viewpoint, the brand emerges as a symbol of credibility (Erdem & Swait, 1998; Erdem & Swait, 2004), which can only be developed and strengthened over time through repeated consumer-brand interactions (Sweeney & Swait, 2007). However, it can be quickly lost if trust is violated, making brand credibility a responsibility that must be always maintained (Sweeney & Swait, 2007).

Brand credibility provides remarkable benefits to both consumers and brands (Baek et al., 2010), by serving as a trusted signal of a brand's reliability and consistency (Tirole, 1988; Erdem & Swait, 1998). In environments where consumers feel uncertain, brand credibility emerges as an important factor that helps them make their choice (Erdem et al., 2002). This conceptualisation highlights that brand credibility is built through an ongoing relationship, where both the brand and the consumer engage in continuous communication (Sweeney & Swait, 2007).

Defined as the extent to which consumers perceive a brand to be capable and committed to fulfilling its promises (Erdem & Swait, 2004), brand credibility encompasses two essential components: trustworthiness and expertise (Erdem et al., 2002; Erdem & Swait, 2004; Sweeney & Swait, 2007). Trustworthiness reflects a brand's intention to fulfil its promises (McKnight et al., 2002; Erdem & Swait, 2004), whereas expertise refers to the brand's actual ability to deliver on those promises (Baek et al., 2010).

Previous studies have indicated that brand credibility has a positive influence on consumers' intention to purchase a brand (Baek et al., 2010). From a consumer perspective, a credible brand reduces perceived risk – the uncertainty consumers experience when they are unable to predict the outcomes of their purchasing decisions (Schiffman & Kanuk, 2004) – saves information costs – reduces the time, money, and mental effort needed to gather and process information (Erdem & Swait, 1998) – and enhances the perceived quality of a product – the consumer's judgement about how excellent the product or service is (Zeithaml, 1988). When consumers believe a brand consistently delivers what it promises, they are more likely to form lasting relationships with it, reinforcing repeat purchases and even referrals (Baek et al., 2010).

This subsection lays the foundation for understanding engagement and credibility as integral components of CBR. In the context of VAs, these dynamics both shape and are shaped by specific characteristics, such as interactions and privacy concerns. This sets the stage for the next section, which reviews the existing literature on two aspects: first, how the use of VAs – for instance through ongoing interactions – can strengthen the relationship between the user

and the brand behind the VA; and second, how the relationship between the user and the brand affects the acceptance and use of that brands' VA.

### **2.3. The Bidirectional Influence of Voice Assistants and Consumer-Brand Relationships**

According to Maroufkhani et al. (2022), there is a significant and positive relationship between brands and individuals' continued usage of VAs – creating memorable and efficient interactions with the VA becomes a key strategy for maintaining users' preference for the brand.

VAs have transformed the way individuals access information, carry out tasks, search for content, make purchases, and interact with brands and companies (Hoy, 2018; Guzman, 2018; Jain et al., 2021).

Drawing on insights from various researchers, this section reviews the existing literature on the mutual influence between VAs and CBR. It is divided into two subsections.

- (1) The first subsection focuses on the role of VAs in fostering CBR. It reviews existing literature on how specific characteristics of VAs – such as their ability to create meaningful interactions (Zaki et al., 2024) – can enhance key aspects of CBR – such as brand engagement (Kumar, 2020).
- (2) The second subsection shifts the focus to the influence of CBR on the use of VAs. It reviews existing literature on how key aspects of CBR – such as brand credibility (Sweeney & Swait, 2007) – can impact key aspects related to VAs – such as privacy concerns (Jain et al., 2021).

Together, these subsections provide a comprehensive view of the bidirectional relationship between VAs and CBR.

#### **2.3.1. The Role of Voice Assistants in fostering Consumer-Brand Engagement**

Enhancing consumer well-being – the overall assessment of how products or services positively impact an individual's quality of life (Ryan & Deci, 2001) – is the primary goal pursued by enterprises (Chiu et al., 2013). In today's market, consumers are not solely focused

on the functional intelligence of products, they increasingly seek offerings that contribute meaningfully to their personal well-being (Chi et al., 2020).

Effective communication between consumers and VAs can foster close relationships, such as a sense of belonging, and fulfil consumers' essential psychological needs, ultimately boosting their overall well-being (Kang & Shao, 2022). These interactions enable the brand to refine and develop its personality, helping to create stronger identification and deeper connections with its target audience (Deryl et al., 2023). In line with this, Marinova et al. (2016) suggest that the growing frequency of consumer-to-machine interactions, provide brands with a valuable opportunity to enhance and deepen CBE – the psychological state that involves a person's thoughts, feelings, and behaviours during ongoing interactions with a brand (McLean et al., 2020). Poushneh (2020) and McLean et al. (2020) also support this by suggesting that the friendly relationship that consumers often form with their VAs benefits brands, as the VA becomes an active player in driving consumer engagement with the brand. As a result, VAs features – such as engagement – significantly increases consumers' intention to use the brand again in the future (McLean et al., 2020).

According to Deryl et al. (2023), the quality of an AI service is vital in shaping the relationship between brands and consumers – when AI performs well, offering reliability, speed, and personalisation, it enhances consumers' perception of the brand and fosters a deep connection with it. This enhanced level of personalisation not only makes users feel more valued but also leads to increased brand engagement (Zaki et al., 2024).

VAs play a crucial role in fostering consumer engagement with brands (e.g., Amazon) (McLean et al., 2020). Through personalised interactions, VAs become deeply integrated into consumers' daily lives – private spaces and moments that are usually inaccessible to marketers. This personal space at home presents brands with a unique opportunity to connect with consumers in a smooth, helpful manner, providing value exactly when it's needed – whether it's waking up to an alarm, asking Alexa to turn off lights, or setting reminders in the evening (McLean et al., 2020).

Technologies that can genuinely engage in personalised social interactions and build relationships with consumers on cognitive, emotional, and behavioural levels are expected to impact CBE (McLean et al., 2020). Hedonic benefits (mentioned in the first section of the literature review) of VAs can encourage consumers to continue interacting with the brand, as they associate it with pleasure and playful engagement (McLean et al., 2020). Several brands are using VAs to share brand-related information: for instance, Alexa's ability to inform users of their *Amazon.com* delivery status (McLean et al., 2020). In this case, the VA is facilitating

consumer engagement with the Amazon brand (McLean et al., 2020). As an example, in their study, McLean et al. (2020) describe one participant's experience, stating:

*“Alexa gives me updates on news from all of my favourite outlets. I am also able to get information about my Amazon order or place another order without having to do anything other than speak... it's amazing. I actually feel that Amazon.com is my pantry, and they are part of my home, ready to supply me with whatever I need”*, quote from participant cited in McLean et al. (2020, p. 318).

Consumers form perceptions and emotional responses based on every interaction they have with a brand – starting before they make a purchase and continuing through their use of the product or service (Agbemabiese et al., 2024). Negative experiences often lead consumers to stop engaging with the brand, while positive ones encourage them to return or recommend it to others (Agbemabiese et al., 2024). And this is where VAs play a key role in shaping those experiences, offering benefits (Agbemabiese et al., 2024; Rawool et al., 2024) – such as ease of use and convenience (McLean & Osei-Frimpong, 2019). As such, brands can focus on improving the experience provided by VAs to strengthen their connection with consumers (Agbemabiese et al., 2024).

The chatbot – software programmes designed to replicate human-like interactions, engaging users in dynamic and realistic dialogues (Casheekar et al., 2024) – industry provides a strong foundation for introducing and exploring VAs and the connections they build with their consumers (Ki et al., 2020; Kautish et al., 2023). Furthermore, since AI is viewed as an emerging technology (Rawool et al., 2024), Cheng and Jiang (2021) argued that it has played a key role in shaping an environment that encourages brand innovation and supports the development of competitive advantages. In this sense, brands that focus on enhancing user experience can stand out in the market – when their products offer a superior user experience, consumers are more inclined to keep using them (Agbemabiese et al., 2024).

VAs are widely recognised for playing a key role in significantly reshaping how brands deliver value to consumers by addressing their needs through personalised products and services (Kumar et al., 2019; Badghish et al., 2023). Kumar et al. (2019) found that consumers tend to change their preferences when interacting with brands that offer a poorly organised online experience. Maroufkhani et al. (2022), suggested that VAs can help improve this by enabling brands to provide more relevant and personalised offerings, which can build stronger, long-term relationships with consumers.

By allowing consumers to engage in various activities such as seeking information and shopping for a specific item without physically interacting with a user interface (e.g., without

touching a screen, keyboard), VAs provide consumers with a highly convenient channel that influences CBR (McLean et al., 2020). VAs create brand-related interactions that have the potential to become a new way for consumers to engage with brands (McLean et al., 2020). In this context, the attractiveness of a VA significantly influences how consumers engage with a brand (Zaki et al., 2024).

Following the perspective of Zaki et al. (2024), the literature highlights the need for deeper exploration of these relationships, stressing the complex interplay between technological innovation and CBR. According to Moriuchi (2019) and McLean et al. (2020), research on VA technology deserves academic attention. In line with this, Hernandez-Ortega and Ferreira (2021) point out that, despite its significant potential to influence consumer choices, this phenomenon remains underexplored in current research, with only a few studies having examined how consumer interactions with smart technologies evoke emotions and foster positive responses such as engagement. More recently, Huh et al. (2023) reinforced this line of thought by noting that only a limited number of studies have explored the role of VAs in brand engagement. Therefore, future studies should delve deeper into the mechanisms and implications of this emerging communication paradigm (Hernandez-Ortega & Ferreira, 2021). This presents a valuable opportunity for this study to address a significant research gap and expand the understanding of how interactions with VAs influence brand engagement within this emerging communication paradigm.

### **2.3.2. The Influence of Brand Credibility on the Use of Voice Assistants**

As discussed in the previous subsection, Poushneh (2020) and McLean et al. (2020) have demonstrated how interactions with VAs impact brand engagement – a key aspect of CBR (Kumar, 2020). Having established this relationship, this subsection takes the opposite direction by exploring the effect of key aspects of CBR – particularly brand credibility (Sweeney & Swait, 2007) – on shaping consumers’ use of VAs, with an emphasis on how these factors help mitigate privacy concerns (Jain et al. (2021).

The perceptions an individual has in their mind regarding a specific brand significantly shape their opinions about a product and influence their subsequent behaviour toward its use (Ryu et al., 2008) – previous research highlights the advantages of using branded products over

off-branded ones, as branded products are more prominent in marketing messages, easier for consumers to recall, and generally better liked (Prendergast & Marr, 1997; Dawar & Lei, 2008).

While much of the existing literature has focused on the significance of brand names for tangible goods, service researchers have started exploring how brands impact consumer behaviour in intangible service contexts (Aghekyan-Simonian et al., 2012). Although several Artificial Intelligence-Enabled Voice Assistants (AI-EVAs) are available on the market, consumers tend to choose well-known brands such as Amazon's Alexa, Apple's Siri and Google's Google Assistant for everyday use (Cai et al., 2022) – since consumers are more inclined to purchase and use products with well-established brand names (Aghekyan-Simonian et al., 2012), the brand of a product (e.g., Amazon's Alexa) significantly shapes their perceptions of using AI-EVAs (Cai et al., 2022). In this sense, brands positively impact the perceived value of VAs and support their continued use (Maroufkhani et al., 2022). Choosing a branded AI-EVA over an off-brand option can alleviate consumers' anxiety about the service, fostering a sense of relational connection often found in service contexts (Cai et al., 2022). Moreover, providing branded devices (e.g., Google Assistant) is recommended, as brand familiarity fosters trust and enhances perceptions of usefulness, thereby encouraging consumer adoption (Cai et al., 2022).

Recent literature has focused extensively on how users adopt and interact with VAs (Jain et al., 2021). Usage has been explored through various lenses, such as ease of use, privacy concerns, human-machine communication (Fernandes & Oliveira, 2020; Jain et al., 2021; Rawool et al., 2024; Zaki et al., 2024). Despite the many benefits, concerns have emerged regarding the security and privacy risks associated with AI-powered digital assistants (Vimalkumar et al., 2021). This creates two contrasting premises: on one hand, users perceive increased value from the interactive capabilities of the technology, while on the other, they remain concerned about privacy risks (Jain et al., 2021). In such cases, it can be argued that consumers' trust may be gained if the product is offered by a well-established brand – such as Alexa by Amazon or Siri by Apple (Jain et al., 2021).

The issue of brand credibility in the field of VAs is a crucial area (Jain et al., 2021; Maroufkhani et al., 2022), as users may still seek assurance about the reliability and trustworthiness of the technology, even if it meets their social and psychological needs (Hasan et al., 2020).

The Signalling theory has been widely used to explain how brand credibility influences consumer perceptions (Erdem & Swait, 1998; Erdem & Swait, 2004). The theory suggests that there is information asymmetry between firms and consumers – meaning that firms have more

knowledge about the quality of their products or services than consumers do (Jain et al., 2021). This information imbalance makes it difficult for consumers to distinguish between high and low-quality offerings before making a purchase (Akdeniz et al., 2012). To address this, firms use signals – actions taken by the seller to credibly convey details about a product’s quality that are not immediately visible to the buyer (Rao et al., 1999) – to communicate the quality of their products or services (Erdem & Swait, 1998). In this context, a brand acts as a signal of the credibility of a product, serving as an indicator of quality (Dawar & Parker, 1994), while also reducing the risks associated with consumers’ lack of knowledge (Sweeney & Swait, 2007). In the context of intelligent technologies such as VAs, brands can be perceived as signals that reflect the trustworthiness and expected quality of the product, thereby lowering perceived risks (Jain et al., 2021). Earlier studies have shown that brands can be used to reduce perceived risk (Peter & Ryan, 1976), build trust, and improve comfort (Davis et al., 2000). Expanding on this perspective, Jain et al. (2021), revealed that brand credibility reduces users’ perception of privacy risks associated with VAs, enhances their perception of the overall value of VAs and increases their confidence in continuing to use it, driven by conviction that “*my brand won’t let me down*” (Jain et al., 2021, p.714). In this sense, brand credibility has a significant impact on how individuals interact with VAs (Maroufkhani et al., 2022).

According to Erdem and Swait (1998), brand credibility can enhance perceived quality, decrease perceived risk, and increase the expected value consumers derive from a product or service. Building on this, Jain et al. (2021) argue that VAs devices from known brands are perceived as more valuable and have a positive impact on consumers’ intentions to use those VAs in the future.

As this subsection draws to a close, it is worth underscoring the future research suggestions proposed by existing literature. As pointed out by Jain et al. (2021), the concept of brand credibility has been extensively discussed in marketing literature (Erdem & Swait, 1998; Erdem & Swait, 2004; Baek et al., 2010). Similarly, as noted by (Vimalkumar et al., 2021), several studies have investigated the privacy concerns linked to the usage of VAs (Lucia-Palacios & Pérez-López, 2021; Jain et al., 2023; Rawool et al., 2024). However, there is limited understanding of the effect of brand credibility on individuals’ overall perception of value and their ongoing use of intelligent technologies such as VAs Jain et al. (2021). There remains a notable gap in the literature concerning whether users’ privacy concerns are mitigated by the perceived credibility of a brand (Jain et al., 2021; Maroufkhani et al., 2022). This reinforces the significance of this study, as it aims to fill this gap by exploring how brand credibility mitigates users’ privacy concerns with VAs.

## **2.4. Final Considerations**

In order to prevent the reader from being immediately confronted with the following chapter – the Model of Analysis – this final section of the literature review aims to present some final considerations.

Among these final considerations, it is important to highlight that the process of writing the literature review chapter involved continuous reading, writing, and revision, with a critical approach applied throughout to enhance the quality of the review. This iterative process aimed to identify the foundational elements of the research and to establish the theoretical framework that underpins the objectives defined for this study.

This literature review has examined the complex interplay between VAs and CBR, focusing on how user interactions with VAs influence brand engagement and how brand credibility helps mitigate privacy concerns with VAs. The first section explored dimensions of analysis of VAs – such as interactions and privacy concerns – showing how these tools have evolved from functional assistants to emotionally resonant, interactive platforms. The second section delved into dimensions of analysis of CBR – particularly engagement and credibility – highlighting their importance in building long-term connections. And the third section brought these perspectives together, demonstrating the reciprocal influence between VAs and CBR. Together, these insights provide a solid theoretical foundation for the objectives of this study, while also revealing a gap in current research – with few studies exploring the role of VAs in brand engagement (Huh et al., 2023) and the lack of research on whether users' privacy concerns with VAs, are mitigated by the perceived credibility of the brand (Jain et al., 2021). These gaps not only highlight the relevance of the present research but also guide the development of the Model of Analysis in the next chapter, which integrates the main concepts and relationships discussed throughout this literature review into a coherent analytical framework.

### 3. MODEL OF ANALYSIS

To introduce this chapter, it is important to remind the reader of the general research objective that guides this study – “In what ways does the Use of Voice Assistants Shape and is Shaped by Consumer-Brand Relationships?” – and the specific research objectives – (1) Understand how Users’ Interactions with Voice Assistants Influence Brand Engagement; (2) Investigate the Role of Brand Credibility in Mitigating Users’ Privacy Concerns with Voice Assistants.

Considering that the literature review has been completed and before data collection begins, it is essential to identify the main concepts and relationships between them that will be explored in this study. The model of analysis, by offering a visual representation, aims to illustrate how these concepts are interconnected in the operationalisation of the study, ensuring rigor in the research process (Santos & Nogueira, 2023).

The model of analysis consists of two phases. The first phase – conceptualisation – as shown in Table 3, presents the concepts included in the model of analysis, their definitions, the sections or subsections of the literature review where these concepts were discussed, and the key references that support these definitions.

**Table 3**

*Conceptualisation of the Model of Analysis*

<b>Concept</b>	<b>Definition</b>	<b>Section/Subsection in Literature Review</b>	<b>Key Reference</b>
Voice Assistants	AI-powered intelligent products designed to assist consumers in daily activities through voice control.	2.1. Voice Assistants	(Fernandes & Oliveira, 2020)
Interactions with Voice Assistants	VAs play the central role in interactions, moving beyond being mere intermediaries by engaging consumers in real-time, human-like conversations and gradually learning their preferences.	2.1.1. Users’ Interactions with Voice Assistants	(Hernandez-Ortega & Ferreira, 2021)
Privacy Concerns with Voice Assistants	The individual’s apprehension regarding the potential misuse, unauthorised access, or improper disclosure of their personal information by external entities or organisations.	2.1.2. Users’ Privacy Concerns with Voice Assistants	(Mou & Meng, 2023)

Consumer-Brand Relationships	These relationships are purposive – playing meaningful roles in consumers’ lives – and complex – encompassing a wide range of forms.	2.2.2. Conceptualising CBR: Consumer-Brand Relationships (Fournier, 1998)
Brand Engagement	The consumer’s active involvement with the brand.	2.2.3. Engagement and Credibility in Consumer-Brand Relationships (Harrigan et al., 2017)
Brand Credibility	The extent to which consumers perceive a brand to be capable and committed to fulfilling its promises	2.2.3. Engagement and Credibility in Consumer-Brand Relationships (Erdem & Swait, 2004)

Source: Self-elaboration

With the conceptualisation completed, the next phase of the model of analysis – operationalisation – follows. The operationalisation of this study’s model – including its concepts and how they were applied in the empirical study – will be presented in the Methodology chapter: in subsection 4.3.1, through the defined categories of analysis, and in subsection 4.3.2, through the interview script developed. The interview questions were designed to decode each concept and each relationship (arrow) of the model of analysis. As additional background information, Table D1 in the Appendix D – developed by the author – illustrates how other researchers have previously operationalised the same concepts in their studies.

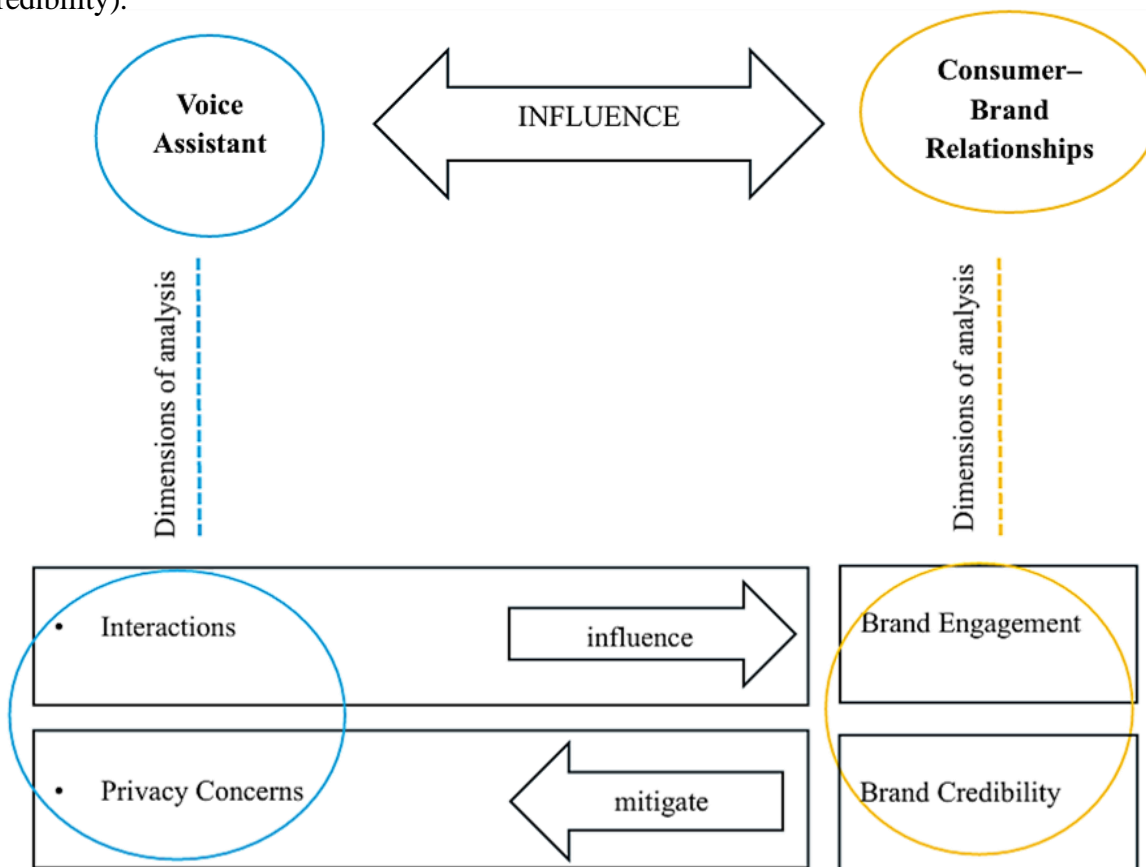
After completing the conceptualisation stage, and with the operationalisation to be detailed in the Methodology chapter – subsection 4.3.1 *Survey* and subsection 4.3.2 *Interview Guide* – the model of analysis is presented in Figure 1. This model visually synthesises both the general research objective and the specific research objectives of this study. At the top of the model, the bidirectional arrow between “Voice Assistant” and “Consumer-Brand Relationship” represents the mutual influence between these two constructs. This directly reflects the general research objective: “In what ways does the Use of Voice Assistants Shape and is Shaped by Consumer-Brand Relationships?”. Beneath these two core elements, there are the dimensions of analysis:

- On the left side, in blue, under the “Voice Assistant” component, there are two dimensions of analysis of VAs: Interactions and Privacy concerns.
- On the right side, in yellow, under the “Consumer-Brand Relationship” component, there are two dimensions of analysis of CBR: Brand Engagement and Brand Credibility.

And the specific research objectives:

- (1) The first horizontal block (upper rectangle) represents the first specific research objective: “Understand how Users’ Interactions with Voice Assistants Influence Brand Engagement”. This is visually represented by the direction of the arrow from “Interactions” to “Brand Engagement”, indicating that the interactions individuals have with VAs influence their engagement with the brand.
- (2) The second horizontal block (lower rectangle) reflects the second specific research objective: “Investigate the Role of Brand Credibility in Mitigating Users’ Privacy Concerns with Voice Assistants”. Here, the direction of the arrow from “Brand Credibility” to “Privacy Concerns” illustrates the role of Brand Credibility in mitigating privacy concerns users have with VAs.

In summary, the top section of the model corresponds to the general research objective: “In what ways does the Use of Voice Assistants Shape and is Shaped by Consumer-Brand Relationships?”. And the bottom section breaks this down into the specific research objectives, examining how specific dimensions of analysis of VAs (interactions and privacy concerns) shape or are shaped by specific dimensions of analysis of CBR (brand engagement and brand credibility).



**Figure 1 - Model of Analysis**

Source: Self-elaboration

## **4. METHODOLOGY**

With the model of analysis established, this chapter focus on the methodology. To frame this section, it is relevant to recall the general research objective that underpins this study: “In what ways does the Use of Voice Assistants Shape and is Shaped by Consumer-Brand Relationships?”, and the specific research objectives: (1) Understand how Users’ Interactions with Voice Assistants Influence Brand Engagement; (2) Investigate the Role of Brand Credibility in Mitigating Users’ Privacy Concerns with Voice Assistants.

This chapter is structured as follows: section 4.1 outlines the research approach, followed by a description of the participants involved in this study (section 4.2). Section 4.3 delves into the data collection instruments, with subsections focusing on the survey (4.3.1) and on the interview (4.3.2), and the alignment between both instruments (4.3.3). Section 4.4 details the data analysis procedures, including both descriptive statistics (4.4.1) and content of analysis (4.4.2). Finally, section 4.5 offers a clarification of the analytical terms used throughout the methodology.

### **4.1. Research Approach**

This study adopted a mixed-methods approach, combining both quantitative and qualitative strategies. The decision to use this methodology was initially guided by a general but well-established rationale: when research seeks both the identification of broad trends – such as VAs usage habits – and the exploration of in-depth, subjective experiences – such as users’ personal perspectives on those interactions – a combination of methods is the most suitable. While this reasoning may appear generic or even expected, it gains real relevance when considered in light of this study’s specific research objectives and the complexity of the phenomena under investigation.

Quantitative methods were employed in the first phase of data collection, through a survey. This phase aimed to uncover patterns in users’ interactions with VAs, directly addressing part of the first specific research objective of this study. The survey also served to map participants’ demographic profiles, usage habits, and general attitudes toward VAs – all of which were later explored in depth during the second phase of data collection. These data provided a useful

overview of the target population, highlighting potential trends and framing the context for deeper investigation. Besides this, the survey had a practical function: to ensure that participants recruited for the second phase of data collection met the inclusion criteria – being 18 years or older and users of VAs. This screening process was essential to ensure that the second phase of data collection included relevant insights from people who actually use VAs and have experience with it, reinforcing the validity of the qualitative findings.

Before turning to the second phase of data collection, it is important to clarify the justification for the inclusion criteria applied. First, participants had to be at least 18 years old. This ensured that all participants were legally adults, capable of providing informed consent for the semi-structured interviews – the second phase of data collection – without needing parental or guardian approval. Furthermore, this study explored participants’ awareness of privacy concerns in the context of using VAs – an area that presupposes a certain level of maturity and critical reflection. Adults are generally more capable of articulating such concerns and understanding their implications, which contributed to the validity and depth of the data collected. Second, participants were required to be users of VAs to ensure that they were sufficiently familiar with the technology and its associated brand. This familiarity allowed them to provide more informed and meaningful responses during the semi-structured interview – moreover, to support this goal, interview questions were tailored to the specific VA and brand each participant used, enhancing both the relevance and depth of the data collected.

Following the survey phase, the second stage of data collection employed qualitative methods through semi-structured interviews, designed to explore participants’ personal perspectives and opinions. The use of semi-structured interviews was particularly important due to the study’s focus on complex and subjective constructs, such as relationships with brands, personal experiences and concerns. These topics are deeply rooted in individual interpretations and lived experiences, which cannot be fully captured by quantitative measures alone. As noted by Santos and Nogueira (2023), qualitative research is well suited to approach topics and research problems that acknowledge the subjectivity of human nature. In the methodologies of previous studies on this topic, as well as their limitations and suggestions for future research, it was noted that many emphasise the need for qualitative methods, as quantitative approaches alone do not allow for an in-depth investigation of consumers’ opinions and their intentions to use VAs (Moriuchi, 2019; Maroufkhani et al., 2022; Matosas-López 2024). In contrast, qualitative research provides more nuanced insights into participant’s experiences and opinions (McLean et al., 2020). The combination of both approaches enabled the study to benefit from the breadth of quantitative data and the depth of qualitative insights.

## 4.2. Participants of the Study

Participants were recruited through a two-phase process involving a survey followed by semi-structured interviews. First, a survey was distributed to collect data on VA usage habits and to identify individuals who met the eligibility criteria – being at least 18 years old and users of a VA – for participation in the second phase, the semi-structured interviews.

A purposeful sampling strategy – a non-probability method (Guest et al., 2005), where participants are intentionally selected to fulfil specific objectives (Daniel, 2012) – was used, to identify suitable individuals for semi-structured interviews, resulting in a final sample of 79 respondents. This sampling strategy was carefully chosen following a thorough review of methodological recommendations from scholars such as Hennink et al. (2016); Guest et al. (2005); Maroufkhani et al. (2022); Pitardi and Marriott (2021) and Daniel (2012). As Daniel (2012) explains, purposive sampling involves intentionally selecting participants who meet predefined inclusion and exclusion criteria, which aligns with the rationale for conducting a screening survey prior to the semi-structured interviews.

Out of 200 total survey responses, 197 respondents confirmed they were over 18. Among these, only 79 reported using a VA. This number is particularly noteworthy, as it reveals that only 40.1% of adults in the survey sample use VAs, despite their growing integration into smartphones and smart devices. This raises questions about the barriers to usage, such as privacy concerns – issues that were addressed more thoroughly in the qualitative phase of the study.

The final survey sample of 79 respondents corresponds to the individuals who met both eligibility criteria. Of these, 24 indicated their willingness to participate in the semi-structured interviews, and ultimately, 23 took part in the qualitative phase, forming the final sample.

To conclude this section and to provide some reflections, the number of interview participants was determined based on the eligibility criteria and individuals' availability and willingness to participate in the semi-structured interviews. Nevertheless, in line with Galvin (2015) suggestion that if previous research used a certain number of interviews successfully, the same can be applied in new studies (Galvin, 2015), related literature was reviewed to reflect on common practices. Table E1, in the Appendix E, presents the number of interviews conducted in previous and related studies, providing an overview of how other researchers investigated similar phenomena. Although the logic of Galvin (2015) was not directly applied to define the sample size in this study, it contributed to a broader understanding of sample size considerations.

### 4.3. Data Collection Instruments

A scientific investigation is always conducted based on data – the full range of information, in various types and formats, used to develop answers to the objectives of the study (Santos & Nogueira, 2023).

To ensure a structured and effective research design for gathering relevant data, this study was carried out in two distinct phases, each utilising a key data collection instrument. The first phase involved the collection of quantitative data through a survey, which aimed to explore the usage habits of VAs and served as a preliminary screening tool to identify suitable participants for the semi-structured interviews. The second phase consisted of qualitative data collection through semi-structured interviews, providing deeper insights into participant’s experiences, perceptions, and attitudes. The following two subsections outline the design and purpose of each instrument.

Additionally, this section includes a third subsection – 4.3.3. *Alignment of Survey and Interview Instruments* – which presents a mapping that illustrates the strategic alignment between the quantitative and qualitative approaches, highlighting how both methods complement one another in addressing the research objectives comprehensively.

#### 4.3.1. Survey

To facilitate the recruitment of participants for the semi-structured interviews, a structured survey was created using Google Forms. The survey served two main purposes: to gather insights into the usage habits of VAs and to screen participants based on predefined criteria – being 18 years old or older and using a VA – for the semi-structured interviews. The questions included in the survey were explicitly linked to insights from the literature review.

The survey began with a clear explanation of its objectives, ensuring that participants were aware of the terms and conditions required for participation, including confidentiality and data protection according to GDPR. The survey was conducted entirely in Portuguese and was later translated into English for inclusion in this study.

Since being at least 18 years old and using a VA were the two requirements to be eligible for the semi-structured interviews, these were the first two questions in the survey. Those who indicated they were under 18 years old, were disqualified and unable to proceed with the survey.

If participants selected the option “Yes”, confirming they were 18 or older, they were then asked whether they currently use a VA (e.g., Google Assistant, Alexa, Siri). Participants who indicated that they do not use a VA, were also disqualified from the survey, as they do not meet the eligibility criteria for the semi-structured interviews. If participants confirmed usage, they were prompted to specify which VA they use most often, selecting from Google Assistant, Alexa, Siri, or Other, with a follow-up question to specify which one if they chose “Other”. The questions that followed, included in the section title “*Based on the Voice Assistant you selected, please answer the following questions*”, reminded participants that their responses should be based on the VA they use most frequently.

To enhance clarity and facilitate comprehension, the survey questions and relevant findings from the literature that justify their inclusion, have been organised into six small tables. Each of the six tables corresponds to one of the six subcategories of analysis – labels developed by the author that facilitated the data analysis.

Table 4 begins with question 3, as the initial two questions were solely used to determine participant eligibility. Question 3 focuses on identifying which brand’s VA participants use most often. Understanding brand preference is essential to assess whether the brand behind the VA plays a role in users’ choices of which VA to use. The inclusion of three widely recognised and credible brands – Google Assistant, Alexa, and Siri – alongside the option “Other” allows the study to capture not only dominant market preferences but also the proportion of users who may not prioritise the brand when deciding which VA to use.

**Table 4**

*Brand Preference: Alignment of Survey Questions with Key Insights from the Literature Review*

Subcategories of Analysis	Survey Question	Answer Options	Key Insights from the Literature Review
Brand Preference	3. Which voice assistant do you use most often?	a) Google Assistant	Although several AI-EVAs are available on the market, consumers tend to choose well-known brands such as Amazon’s Alexa, Apple’s Siri and Google’s Assistant for everyday use (Cai et al., 2022).
		b) Alexa	
		c) Siri	
		d) Other	If this option is selected, the participant is asked to indicate which other VA they use most often.

Source: Self-elaboration

Table 5 presents questions related to usage patterns of VAs, exploring both the duration and frequency of users’ interactions with this technology. The purpose with these questions was to understand how long participants have been using their VA and how often they interact with it. These usage patterns offer valuable insights into users’ familiarity with, and integration of, the technology into their daily lives.

**Table 5**

*Usage Patterns of Voice Assistants: Alignment of Survey Questions with Key Insights from the Literature Review*

Subcategories of Analysis	Survey Question	Answer Options	Key Insights from the Literature Review
Usage Patterns of Voice Assistants	4. How long have you been using the voice assistant?	a) Less than 6 months b) 6 months to 1 year c) 1-2 years d) More than 2 years	Inspired by McLean et al. (2020)
	5. How often do you use the voice assistant?	a) Daily b) More than twice a week c) Once a week d) Once a month	

Source: Self-elaboration

Table 6 corresponds to the subcategory of analysis “User Trust in Voice Assistants for Data Privacy”, addressed through Question 6, which explores whether participants feel comfortable sharing confidential information (e.g., banking details, passwords) with their VA. This question is particularly relevant, as it provides direct insight into participants’ privacy concerns with VAs – one of the core themes of this study. And how such concerns may be mitigated – for instance, through the credibility or perceived reliability of the brand behind the VA – was further explored in the qualitative phase of the research.

**Table 6**

*User Trust in Voice Assistants for Data Privacy: Alignment of Survey Questions with Key Insights from the Literature Review*

Subcategories of Analysis	Survey Question	Answer Options	Key Insights from the Literature Review
User Trust in Voice Assistants for Data Privacy	6. Do you trust your voice assistant with confidential information (e.g., banking details, passwords)?	a) Yes b) No	To gain user trust, voice assistants must handle sensitive data with high security and privacy standards (Wienrich et al., 2021).

Source: Self-elaboration

One key goal of this investigation is to: Understand how Users’ Interactions with Voice Assistants Influence Brand Engagement (specific research objective 1). Therefore, it is important to first examine the core of these interactions: which devices participants use to interact with their VAs, the purposes behind these interactions. Table 7 presents the two questions – Question 7 and Question 8 – that address these aspects.

**Table 7**

*Functional Contexts of Voice Assistants: Alignment of Survey Questions, Answer Options and Key Insights from the Literature Review*

Subcategories of Analysis	Survey Question	Answer Options	Key Insights from the Literature Review
Functional Contexts of Voice Assistants	7. Which platforms or devices do you use to interact with your voice assistant? (Please select all that apply)	a) Smartphone	Some VAs are integrated into smartphones (Hoy, 2018; Lelebici, 2024). VAs also work with smart gadgets, which are physical objects – such as smart speakers (Amazon Echo) and smart home devices (lights and locks) – controlled by VAs (Lelebici, 2024)
		b) Laptop	
		c) Tablet (e.g., iPad)	
		d) Smartwatch	
		e) Smart speaker (e.g., Amazon Echo)	
	f) Smart home devices (e.g., lights, locks)		
	g) Car	VAs are becoming increasingly popular and are recognised as a crucial part of in-car interaction (Liu et al., 2023).	
	h) Other	If this option is selected, the participant indicates what platform or device they use to interact with their VA.	
	a) Getting general information (e.g., weather updates)	Users tend to use VAs for tasks requiring quick, straightforward responses, such as setting reminders and alarms, checking weather updates, playing music, requesting information making phone calls, and managing smart home devices (Hoy, 2018; Kim & Choudhury, 2021).	
	b) Setting reminders and alarms		
c) Playing music			
d) Controlling smart home devices (e.g., lights, locks)			
e) Making phone calls			
8. For what purposes do you use the voice assistant? (Please select all that apply)	f) Asking health-related questions or managing medical information	Healthcare voice assistants are increasingly being used for medical diagnosis, symptom checking, and patient data collection (Wienrich et al., 2021). Many users expressed a desire for VAs to have access to their health and medical history, including details about their physicians and medical records, to provide personalised recommendations (Bewer et al., 2022).	
g) Driving purposes (e.g., hands-free calls,	Information provided by VAs, such as traffic updates or driving directions, can assist		

traffic updates, driving directions)	drivers in making more accurate decisions (Liu et al., 2023).
h) Shopping or ordering products online	VAs have emerged as important shopping assistants, influencing consumer behaviour (Klaus & Zaichkowsky, 2021).
i) Using banking services	Leading banks across the globe have already begun adopting voice assistants and voice biometric systems, achieving varying levels of success (Khan & Aithal, 2024).
j) Entertainment (e.g., playful conversations)	Voice assistants are often used for entertainment purposes, such as telling jokes and engaging in playful conversations (Oranç and Ruggeri, 2021).
k) Other	If this option is selected, the participant specifies another purpose for using the VA.

Source: Self-elaboration

Still within the realm of user interactions with VAs, the set of questions presented in Table 8 shifts focus on how users perceive and experience these interactions. While the previous table examined the contexts and purposes of VA use, the following set of questions explores subjective aspects such as users’ enjoyment, their perception of human-likeness in the VA, and whether they view it primarily as a technological tool or as a conversational partner. The last question – Question 12 – in this subcategory of analysis – Interaction Styles with Voice Assistants – addresses users’ preferences between voice-based and text-based interactions, offering insight into whether voice interaction is becoming a preferred mode of communication, if traditional typing continues to hold a significant place in users’ routines or if their preference depends on the situation.

**Table 8**

*Interaction Styles with Voice Assistants: Alignment of Survey Questions with Key Insights from the Literature Review*

Subcategories of Analysis	Survey Question	Answer Options	Key Insights from the Literature Review
Interaction Styles with Voice Assistants	9. What do you enjoy most about using the voice assistant?	a) Convenience (e.g., hands-free functionality, multitasking)	By allowing consumers to engage in various activities such as seeking information and shopping for a specific item without physically interacting with a user interface, VAs provide consumers with a highly convenient channel that influences CBR (McLean et al., 2020).  VAs enable multitasking through hands-free convenience during conversations (Huh et al., 2022),

		allowing consumers to complete tasks effortlessly (Strayer et al., 2017).
		Driving requires drivers to focus on their surroundings, and VAs help manage tasks with less effort, attention, and manual intervention (Liu et al., 2023).
	b) Personalisation (e.g., learning and adjusting to user preferences)	VAS enable personalised conversations by learning and using stored consumer preferences (Hernandez-Ortega & Ferreira, 2021).
	c) Interactions	VAs play the central role in interactions, moving beyond being mere intermediaries by engaging consumers in real-time, human-like conversations and gradually learning their preferences (Hernandez-Ortega & Ferreira, 2021).
	d) Other	Consumers become fully engaged and experience a sense of flow while interacting conversationally and completing tasks with a brand's VA (Huh et al., 2023). If this option is selected, the participant will be asked to indicate what they enjoy most about using the VA.
10. Do your interactions with the voice assistant feel similar to interacting with a person?	a) Yes b) No c) Sometimes	Consumers form emotional connections with their SVA, interacting with it as if it were a person, even while recognising it as a machine, and develop deep emotional attachments to it (Van Der Loos, 2014; Louie et al., 2014; Han & Yang, 2018; Xu, 2020).
11. Do you view the voice assistant primarily as a technological tool or as a conversational "partner"?	a) Technological tool b) Conversational "Partner" c) Both	In health-related contexts, Brewer et al. (2022) suggested that older adults attribute human characteristics to voice assistants and appreciate their conversational interaction approach.
12. Do you prefer using a voice assistant over typing?	a) Yes b) No	VAs, through their use of spoken language, offer a more natural and convenient form of interaction, compared to typing on a keyboard or phone (Canziani and MacSween, 2021).

c) Depends on the situation  
If this option is selected, the participant will be asked to indicate an example of a situation.

Source: Self-elaboration

Table 9 examines users’ desired improvements regarding their VA. This question is relevant for understanding potential barriers that may decrease users’ interactions with VA. Dissatisfaction with aspects such as service performance, personalisation, or privacy may reduce interactions with VAs over time. Therefore, understanding these improvements is vital not only to identify current limitations but also to inform future developments. Additionally, participants have the answer option “Other”, allowing them to share any additional desired improvement not covered by the predefined options.

**Table 9**

*Desired Improvements in Voice Assistants: Alignment of Survey Questions with Key Insights from the Literature Review*

Subcategories of Analysis	Survey Question	Answer Options	Key Insights from the Literature Review
Desired Improvements in Voice Assistants	13. If you could improve one characteristic about your voice assistant, what would it be?	a) Service performance (e.g., incorrect responses, technical failures)	Users often encounter service gaps, such as misinterpretation of commands, incorrect responses or technical failures, leading to frustration and avoidance behaviours (Y. Lee & Kim, 2018; Niu et al., 2020; S. Jain et al., 2023).
		b) Customise the tone of voice	Users typically prefer VAs with a friendly and engaging tone over those that sound robotic or monotone (Guha et al., 2022) VA designers should offer users the possibility to easily customise VA’s voices with different tones, ages, and genders (Pias et al., 2024).
		c) Stronger privacy protection	Privacy concerns related to the constant data collection by voice assistants contribute to resistance, with consumers expressing discomfort over perceived invasiveness (Mou & Meng, 2023).
		d) Other	If this option is selected, the participant will be asked to indicate what they would like to improve in their VA.

Source: Self-elaboration

After Question 13, the survey included a set of four sociodemographic questions: Age (Question 14), Gender (Question 15), Occupation (Question 16), and Educational Level (Question 17). While these questions do not directly address the core research themes under investigation, they provide essential background information about the participants who proceeded to the interview phase.

At the end of the survey, respondents were asked (Question 18) whether they would be willing to talk, either online – this option was included to facilitate participants’ lives – or in person and share their experiences with the VA they use, with the response options being “Yes” or “No”. For those who answered “Yes”, they were asked (Question 18.1) how they would prefer to be contacted, with a request to specify the method and any preferred details (e.g., email address, phone number, etc.). As a note for the reader, and in the spirit of the expression “*putting yourself in someone else’s shoes*”, participants have the right to know the topic before deciding whether to proceed with the semi-structured interview or not. And that is why this question was placed at the end of the survey.

To maximize the number of responses and following the suggestion of Santos and Nogueira (2023), each question was carefully crafted, with a blue light colour layout designed to be appealing and compatible with various platforms (smartphones, PCs and apps). The questions were written in bold to distinguish them from the answers, which were presented in regular text. This formatting improved the survey’s readability and helped respondents quickly distinguish between questions and answers.

#### **4.3.2. Interview Guide**

The semi-structured interview – conducted in Portuguese and subsequently translated into English – began with a brief introduction. The interviewer welcomed the participant, introduced herself by stating her name, university affiliation, and the name of her master’s programme. Besides this, the interviewer clearly explained the purpose of the study following the recommendations of Cai et al. (2022) and Jain et al. (2021).

As a note for the reader, the semi-structured interviews were conducted and recorded via Zoom and later transcribed using the “*any2text*” platform. At the beginning of each semi-structured interview, participants were reminded that the semi-structured interview was being recorded, in accordance with the terms outlined in the “*Audio and Video Consent Form*”, which

they had read and signed in advance. This form was created using eForms to formally document participants' rights and ensure transparency and compliance with ethical research standards. It granted permission to record both voice and image, to use participants' statements (or excerpts) in the master's thesis, academic presentations (e.g., conferences), scholarly publications, and future research projects related to the study. It also authorised the storage and analysis of the recordings exclusively for academic research purposes. Importantly, while the semi-structured interviews were recorded in video format, only the spoken content was analysed, and no visual footage will appear in any published material. Participation was entirely voluntary, as explicitly stated in the consent form. For full transparency, a copy of the "*Audio and Video Consent Form*" is presented in Appendix F of this study.

Returning to the flow of the semi-structured interview itself, the participant was then asked to state their name, in line with the suggestions of McLean et al. (2020) and Pitardi and Marriott (2021). Following this, the participant was asked to confirm the information they previously provided in the survey. This step was intended to ensure consistency and verify the reliability of the collected data through the survey. Once the participant confirmed their survey responses, the main semi-structured interview began.

The semi-structured interview was divided into two parts. The first part focused on understanding how interactions with VAs influence brand engagement, and the second part shifted the focus on the role of brand credibility in mitigating privacy concerns with VAs, aligning with the two specific research objectives of this study. Based on the information obtained in the survey, it was already known which VA each participant used. As such, the interview questions were tailored to each participant's specific VA and brand, ensuring the discussions remain focused on their individual experiences. The part of the question adapted to each participant's VA and brand is highlighted in grey in Table 10 and Table 11. Besides this, the questions were formulated as open-ended prompts, encouraging participants to elaborate on their answers rather than providing simple "yes" or "no" responses. To achieve this, follow-up prompts such as "Can you explain why?" were incorporated throughout.

Each interview question was carefully designed based on key insights from the literature review and replied to a specific research objective of this study. To enhance clarity, the interview questions were organised into two tables – Table 10 and Table 11– each corresponding to a specific research objective. This alignment ensures that the semi-structured interviews effectively captured relevant data to address the study's main goals.

Following the same logic used to organise the survey data – where questions were organised according to subcategories of analysis – the interview questions were structured

according to dimensions of analysis to facilitate interpreting the results. As illustrated in Table 10 and Table 11, each specific research objective is linked to a dimension of analysis, key insights from the literature review, and corresponding interview questions. This structure demonstrates how each element is systematically connected to guide the investigation.

Table 10 presents the structure supporting the first specific research objective – “Understand how Users’ Interactions with Voice Assistants Influence Brand Engagement”. On one side, the interview questions for the first dimension of analysis of Table 10, aimed to deeply explore how participants interact with their VA and how they perceive these interactions. On the other side, the interview questions for the second dimension of analysis of Table 10, intended to understand participants’ opinions on whether their interactions with the VA benefit the brand behind it, and to what extent these interactions have any influence on how engaged they feel with the brand behind the VA.

**Table 10**

*Alignment of the First Specific Research Objective with Its Dimensions of Analysis, Key Insights from the Literature Review, Authors, and Interview Questions*

Specific Research Objective	Dimension of Analysis	Key Insights from the Literature Review	Authors	Interview Questions
Understand how Users’ Interactions with Voice Assistants Influence Brand Engagement	Interactions between Users and Voice Assistants	Four anthropomorphic interactions with VAs.	(Jones et al., 2021)	1) How do you usually start a conversation with your VA? For example, “Hey Siri/Alexa/Google Assistant”; “Siri/Alexa/Google Assistant, I’m home”. Can you please, share your example?
		<ul style="list-style-type: none"> <li>Relational greetings: expressions similar to how one would typically greet a human companion.</li> <li>Comments/question: interactions where the user addresses the VA as a real person.</li> </ul>		2) Have you ever caught yourself talking to Siri/Alexa/Google Assistant, as if it were a person? For example, “Siri/Alexa/Google Assistant, what is your favourite colour?”. <b>If yes:</b> 2.1) Can you share an example of when you did that? <b>If no:</b> 2.2) If you don’t usually interact with Siri/Alexa/Google Assistant in a more personal way, how do you describe the way you normally interact with it?

	<ul style="list-style-type: none"> <li>Polite behaviours: user requests or commands, that follow politeness norms commonly used in human conversations.</li> <li>Reactions: user verbal reactions to the VA's responses.</li> </ul>	<p>3) Do you ever use expressions like “please” or “thank you” when speaking to <b>Siri/Alexa/Google Assistant</b>, as if you were talking to a person? Why do you think you do (or don't do) this?</p> <p>4) Do you ever find yourself speaking negatively to <b>Siri/Alexa/Google Assistant</b>, when its response doesn't meet your expectations?  <b>If yes:</b>            4.1) Why do you think that happens?  <b>If no:</b>            4.2) Why do you think you don't react in a negative way?</p>
Consumer Engagement with Brands through the Use of Voice Assistants	<p>The friendly relationship that consumers often form with their VAs benefits brands, as the VA becomes an active player in driving consumer engagement with the brand.</p> <p>The level of personalisation offered by VAs leads to increased brand engagement.</p>	<p>(McLean et al., 2020)</p> <p>5) Do you think your interactions with <b>Siri/Alexa/Google Assistant</b> benefit <b>Apple/Amazon/Google</b> in any way? Can you explain why?</p> <p>(Zaki et al., 2024)</p> <p>6) Do you feel that your personalised interactions with <b>Siri/Alexa/Google Assistant</b> have any influence on your engagement with <b>Apple/Amazon/Google</b>? Can you explain why?</p>

Source: Self-elaboration

Table 11 outlines the structure aligned with the second specific research objective – “Investigate the Role of Brand Credibility in Mitigating Users’ Privacy Concerns with Voice Assistants”. Within this objective, the interview questions for the first dimension of analysis of Table 11 aimed to discover, not only participants’ own reasons for choosing branded VAs over non-branded ones (Question 7), but also their perceptions of why others tend to make similar choices (Question 8). The intent was to prompt participants to reflect on their decisions from an external perspective. As the writer José Saramago aptly put it: “*It is necessary to leave the island to see the island. We cannot see ourselves unless we step outside ourselves*” (Saramago, 2023, p. 25). By asking participants to consider the behaviours of others, the objective was to

metaphorically “take them out of the island” in order to help them better articulate the deeper motivations behind their own choices regarding branded VAs over non-branded ones. Finally, within this dimension, Question 9 aimed to understand whether the credibility of brands such as Apple, Amazon or Google influence participants’ confidence in using the brand’s VA. The interview questions for the second dimension of analysis of Table 11 examines users’ privacy concerns with VAs and how brand credibility may help alleviate these concerns.

**Table 11**

*Alignment of the Second Specific Research Objective with Its Dimensions of Analysis, Key Insights from the Literature Review, Authors, and Interview Questions*

Specific Research Objective	Dimension of Analysis	Key Insights from the Literature Review	Authors	Interview Questions
Investigate the Role of Brand Credibility in Mitigating Users’ Privacy Concerns with Voice Assistants	The role of Brand Credibility in the Use of Voice Assistants	Choosing a branded AI-EVA over an off-brand option can alleviate consumers’ anxiety about the service.	(Cai et al., 2022)	7) What influenced your choice to use a branded VA (such as <b>Apple/Amazon/Google</b> ) over a non-branded VA?
		Although several AI-EVAs are available on the market, consumers tend to choose well-known brands such as Amazon’s Alexa, Apple’s Siri and Google’s Assistant for everyday use.	(Cai et al., 2022)	8) Why do you think people generally prefer to use VAs from well-known brands like Amazon, Apple, or Google, instead of ones from lesser-known brands?
		The credibility of a brand supports consumer confidence in the brand’s products.	(Erdem & Swait, 1998)	9) Do you think the credibility of <b>Apple/Amazon/Google</b> as a brand, affects your confidence in its products – namely its VA? Why?
		Privacy concerns have become a central issue affecting user adoption of VAs. Examples of such concerns include: 1. conversations being recorded without user’s knowledge; 2. the continuous collection of voice data; 3. the misuse or inappropriate	(Mou & Meng, 2023)	10) Do you have any privacy concerns when using <b>Siri/Alexa/Google Assistant</b> ? For example, are you ever concerned about the possibility of your conversations with <b>Siri/Alexa/Google Assistant</b> being recorded without your knowledge, your voice data being collected continuously, or the possibility of your personal information being misused?

handling of personal information.

Brand credibility reduces users' perception of privacy risks associated with VAs, and increases their confidence in continuing to use it, driven by conviction that "*my brand won't let me down*". (Jain et al., 2021, p. 714)

**If yes:**

10.1) Do you think that the credibility of a brand like Apple/Amazon/Google helps mitigate those privacy concerns? Why?

**If no:**

10.2) Do you think your lack of privacy concerns might be influenced by the credibility of the brand behind the VA? In this case Apple/Amazon/Google. Why?

Source: Self-elaboration

The semi-structured interview was designed to be clear and easy to follow, using simple and straightforward language to ensure that participants understand each question, feel comfortable and engaged. At the end of the semi-structured interview, a short, pre-recorded message from an artificial voice was played to thank the participant for their time, participation, and insights. Since this study examines VAs, the author believes incorporating this element added an interesting touch. This formally concluded the semi-structured interview.

### 4.3.3. Alignment of Survey and Interview Instruments

This subsection presents the alignment between the two data collection instruments: the survey (quantitative) and the semi-structured interviews (qualitative). This alignment supported a more integrated interpretation of the data.

The subcategories of analysis organised the quantitative data related to general usage patterns and perceptions regarding VAs. These subcategories of analysis were then explored in greater depth during the semi-structured interviews, through four dimensions of analysis, which helped uncover nuances behind participants' personal experiences, attitudes and motivations.

To illustrate the connection between quantitative and qualitative instruments – and to offer a comprehensive perspective on how these two instruments complement each other – Table 12 presents the mapping of this alignment.

**Table 12**

*Alignment of Survey and Interview Instruments*

<b>Subcategories of Analysis (survey questions)</b>	<b>Dimension of Analysis (interview questions)</b>
Usage Patterns of Voice Assistants (Survey Questions: 4, 5) Functional Contexts of Voice Assistants (Survey Questions: 7, 8) Interaction Styles with Voice Assistants (Survey Questions: 9, 10, 11, 12) Desired Improvements in Voice Assistants (Survey Question: 13)	Interactions between Users and Voice Assistants (Interview Questions: 1, 2, 2.1/2.2, 3, 4, 4.1/4.2)
Usage Patterns of Voice Assistants (Survey Questions: 4, 5)	Consumer Engagement with Brands through the Use of Voice Assistants (Interview Questions: 5, 6)
Brand Presence (Survey Question: 3)	The role of Brand Credibility in the Use of Voice Assistants (Interview Questions: 7, 8, 9)
User Trust in Voice Assistant for Data Privacy (Survey Question: 6)	Privacy Concerns with VAs (Interview Question: 10, 10.1/10.2)

Source: Self-elaboration

#### **4.4. Data Analysis Procedures**

Having concluded the presentation of the two data collection instruments used in this investigation, this section of the methodology chapter outlines, in a detailed and clear way (Santos & Nogueira, 2023), how the data analysis process was conducted.

The research design followed a two-phase structure. In the first phase, a quantitative approach was employed, using a survey as the data collection method. This survey served two key purposes: to gather broader insights into VA usage habits and to identify participants who met the criteria for the second phase – being 18 years old or older and use a VA. In the second phase, those who met the criteria and agreed to participate, were interviewed to gain a deeper understanding of their perceptions of how the use of VAs influence and is influenced by CBR.

Accordingly, and to present the data analysis process in detail, this section is organised into two subsections: 4.4.1 Descriptive Statistics – which outlines the procedures used to analyse the data obtained from the survey (quantitative) – and 4.4.2 Content of Analysis – which describes the procedures used to analyse the data obtained from the semi-structured interviews (qualitative).

#### **4.4.1. Descriptive Statistics**

This subsection outlines the procedures used to analyse the quantitative data collected through the online survey, which constituted the first phase of the research. The survey was designed to explore general patterns of VA usage, and to identify eligible participants for the second phase – the qualitative one. The information presented here describes how the data were prepared and organised for analysis.

Given the quantitative nature of this instrument, the data were systematically organised for statistical analysis using Microsoft Excel. Responses collected via Google Forms were exported to an Excel spreadsheet, where each row represented a participant’s answer (observation), and each column corresponded to a survey question (variable). Filters were then applied to each column to isolate specific responses when needed – for instance, to identify how many respondents use Google Assistant, the filter was applied to the column of Question 3 – “Which voice assistant do you use most often?” – to display only the “Google Assistant” responses. This structured organisation, on one side, facilitated the identification of patterns and trends that may not have been evident without this methodical approach to data handling, and on the other side, ensured that the data were adequately prepared for more in-depth investigation in the subsequent qualitative phase.

As mentioned in subsection 4.3.1 *Survey*, the quantitative data were organised according to specific subcategories of analysis. While Excel filters facilitated the initial data sorting, the creation of these subcategories provided groupings with meaning that go beyond simply dividing responses within an Excel sheet. For instance, the subcategory of analysis named “Brand Preference” grouped participants based on the VA brand they reported using.

Finally, frequency counts and percentages were calculated to provide a clear overview of the sample characteristics and response distributions.

#### 4.4.2. Content of Analysis

This subsection outlines the procedures used to analyse the qualitative data collected through semi-structured interviews, which constituted the second phase of the research.

The semi-structured interviews were divided into two parts, each aligned with a specific research objective. The first part focused on “Understanding how Users’ Interactions with Voice Assistants Influence Brand Engagement”, directly addressing the first specific research objective. The second part focused on “Investigating the role of Brand Credibility in Mitigating Users’ Privacy Concerns with Voice Assistants”, corresponding to the second specific research objective. Together, these parts contributed to answering the general research question, which seeks to understand “In what ways does the Use of Voice Assistants Shape and is Shaped by Consumer-Brand Relationships?”.

To analyse the qualitative data collected in these semi-structured interviews, this study adopted content of analysis as the analytical method. Any comprehensive discussion of content of analysis must acknowledge the foundational contributions of Laurence Bardin, widely regarded as a seminal figure in the development of this methodological approach. Bardin (1977) defines content of analysis as a set of systematic procedures designed to infer meaning from verbal, written, or visual messages. According to Bardin (1977), content of analysis typically unfolds in three stages: pre-analysis, exploration of the material, and treatment of the results. In alignment with this structure, the analysis in the present study followed these three stages:

1. Pre-analysis, during which the interview transcripts were read in full to facilitate immersion in the data. In line with this phase, Santos and Nogueira (2023) highlight that the process of data analysis should begin with an initial reading of the material. By reading and re-reading the transcripts, the researcher develops a growing sensitivity to what the data expresses (Santos & Nogueira, 2023), enabling a more informed and nuanced interpretation in the subsequent stages of analysis. This phase also involved the identification and selection of relevant textual units – participant quotes – as well as the development of a thematic structure based on analytical themes derived from the previously dimension of analysis.
2. Exploration of the material, during which thematic coding was applied to organise the previously identified excerpts – participant quotes – into meaningful a priori analytical themes. The term “a priori” is employed here to indicate that these analytical themes were defined in the first stage. For the coding process to be effective, it must be carried out using data that is already prepared for analysis (Santos & Nogueira, 2023). That is

why the pre-analysis phase was essential, as it ensured familiarity with the data prior to coding.

3. Treatment of the results, during which an interpretative analysis was conducted, to uncover deeper meanings in participants’ responses. This structured and interpretative approach is consistent with Bardin (1977) notion of content of analysis as a process of uncovering hidden meanings.

Through this process, the analysis constructs an interpretation that directly addresses the two specific research objectives – Understand how Users’ Interactions with Voice Assistants Influence Brand Engagement; Investigate the Role of Brand Credibility in Mitigating Users’ Privacy Concerns with Voice Assistants. The purpose is always to make sense of the empirical data collected (Santos & Nogueira, 2023), ensuring that interpretation remains grounded in participants’ lived experiences and the context of the study. The a priori analytical themes – derived from the dimensions of analysis of this study – used to guide the interpretation are summarized in Table 13

**Table 13**

*A Priori Analytical Themes Used for Qualitative Data Analysis*

Dimensions of Analysis	A Priori Analytical Themes
A. Interactions between Users and Voice Assistants	A.1. Expressions used to start an interaction with the Voice Assistant  A.2. Human-like interactions with the Voice Assistant  A.3. Reactions during unsatisfactory interactions with the Voice Assistant
B. Consumer Engagement with Brands through the Use of Voice Assistants	B.1. Perspectives on whether the interactions provide benefits to the brand behind the Voice Assistant  B.2. Perspectives on whether the interactions influence consumer engagement with the brand behind the Voice Assistant
C. The role of Brand Credibility in the Use of Voice Assistants	C.1. Personal reasons for choosing a branded-Voice Assistant over a non-branded one  C.2. Perspectives on the general preference for branded-Voice Assistants

	C.3. Impact of brand credibility on the use of its Voice Assistant
	D.1. Privacy concerns when using Voice Assistants
D. Privacy Concerns with Voice Assistants	D.2. Effect of brand credibility on how privacy concerns are perceived

Source: Self-elaboration

As a final note, a colour-coding system was used to help organise the relevant participant quotes according to the a priori analytical themes. For instance, quotes related to expressions participants reported using to initiate an interaction with the VA – such as “Hey Siri” – were highlighted in orange.

#### 4.5 Clarification of Analytical Terms

To conclude the methodology chapter, this section provides clarifications regarding the differences between the analytical terms – subcategories of analysis, dimensions of analysis, a priori analytical themes – used throughout this chapter. Clarifying these terms enhances the understanding of the methodology and the data handling process. Therefore, Table 14 clarifies these key terms, providing their description, purpose, and associated approach.

**Table 14**

*Clarification of Analytical Terms*

Term	Description	Purpose	Approach
Subcategories of Analysis	Specific groupings created to organise quantitative survey data.	Organise quantitative survey data into groups to uncover insights not evident before. For instance, the data organised under the first subcategory of analysis – Brand Preference – revealed which VA brand each participant uses. This allowed adapting interview questions to align with the VA and brand each participant uses.	Quantitative (survey data)
Dimensions of Analysis	Broad categories used to organise the general structure of	Map broadly which parts of the semi-structured interviews responded to which research objectives. For instance, the data organised under the first	Qualitative (interview data)

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<p>qualitative data in relation to the specific research objectives.</p>	<p>dimension of analysis – Interactions between Users and Voice Assistants – allowed to reply to a part of the first objective – Understand how Users’ Interactions with Voice Assistants Influence Brand Engagement.</p>		
<p>A Priori Analytical Themes</p>	<p>Specific categories used to code qualitative data in detail within each dimension of analysis.</p>	<p>Categorized specific text fragments within the broader dimensions of analysis. They helped capture fine nuances within each dimension, ensuring a detailed, systematic, and organised analysis. For instance, within the dimension of analysis: Interactions between Users and Voice Assistants, a priori analytical themes such as: Expressions used to start an interaction with Voice Assistant, Reactions during unsatisfactory interactions with the Voice Assistant, were identified.</p>	<p>Qualitative (interview data)</p>

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Source: Self-elaboration

Having presented the table above, it is important to explain why two analytical terms – Dimensions of Analysis and A Priori Analytical Themes – were necessary in the qualitative data analysis. Using only Dimensions of Analysis would result in very broad categories that do not allow for in-depth analysis of nuances. On the other hand, using only A Priori Analytical Themes would make the overall structure linked to the research objectives unclear, causing a loss of connection between the data and the specific research objectives. Having both allows for a two-level qualitative analysis:

- 1) A general structure to link data to each specific research objective (Dimensions of Analysis)
- 2) Detailed coding to interpret the data in depth (A Priori Analytical Themes)

## 5. RESULTS

Following the completion of the Methodology chapter, this chapter presents the results obtained from the two data collection instruments employed in this study.

It begins with section 5.1 *Sample Characterisation*, which provides demographic and background information about the participants who took part in the semi-structured interviews, based on the data collected in the survey. The chapter then continues with four sections, each corresponding to one of the four Dimensions of Analysis of this study:

- *5.2 Interactions between Users and Voice Assistants*
- *5.3 Consumer Engagement with Brands through the Use of Voice Assistants*
- *5.4 The role of Brand Credibility in the Use of Voice Assistants*
- *5.5 Privacy Concerns with Voice Assistants*

These Dimensions of Analysis were guided using A Priori Analytical Themes (Table 13) – specific categories used to code qualitative data in detail within each Dimension of Analysis.

Each of the four sections crosses qualitative results (organised around a priori analytical themes and dimensions of analysis) with quantitative results (organised around subcategories of analysis). This structure echoes the alignment outlined in Table 12 by illustrating the coherence between quantitative and qualitative data and providing a comprehensive perspective on how these two data sources complemented each other.

It is worth noting that this chapter is extensive, but this length reflects the richness of the data collected. Naturally, if the study had focused solely on quantitative or qualitative data, the results section would be considerably shorter. However, given that the analysis relies on the integration of both data sources, the more detailed exploration is not only justified but necessary to capture the full depth of insights emerging from this mixed-methods approach.

### 5.1. Sample Characterisation

Before moving into the Dimensions of Analysis, it is important to present the sample characterisation of the participants who, through the survey, agreed to take part in the semi-structured interviews.

Out of a total of 200 survey responses collected, 197 participants were aged 18 or older. Among these, only 79 reported using VAs, and of those, 24 agreed to be interviewed. However, due to lack of response, 23 participants were ultimately interviewed. Therefore, the sample characterisation presented below focuses exclusively on these 23 individuals, as they represent the subset of participants who contributed both quantitative and qualitative data. Table 15 summarizes the characteristics of the 23 participants, based on their responses to the survey’s sociodemographic questions: Age (Question 14), Gender (Question 15), Occupation (Question 16), and Educational Level (Question 17).

**Table 15**  
*Sample Characterisation*

Variable	Group	Frequency (n)	Percentage (%)
Age Range	18-24	9	39.1%
	25-34	5	21.7%
	35-44	2	8.7%
	45-54	5	21.7%
	55-64	2	8.7%
Gender	Female	12	52.2%
	Male	11	47.8%
Occupation	Student	8	34.8%
	Professor	7	30.4%
	Engineer	2	8.7%
	Sales Back Office Assistant	1	4.3%
	Artificial Vision	1	4.3%
	Programmer	1	4.3%
	Systems Analyst	1	4.3%
	Caregiver	1	4.3%
	Unemployed	1	4.3%
	Retired	1	4.3%
Education Level	Secondary Education	4	17.4%
	Bachelor	8	34.8%
	Master	9	39.1%
	PhD	2	8.7%

Source: Self-elaboration

These results show that the sample is relatively balanced in terms of gender and includes participants from a broad age spectrum, with a predominance of young adults (18-34 years). In

terms of educational background, the majority of respondents hold a bachelor's or master's degree, suggesting a generally high level of education. Occupations also reflect a strong representation of students and academic professionals.

As an important note, participant identities have been anonymized throughout the study. Participants were organised alphabetically and assigned a number – for instance, Participant 1 is labelled as P1 – followed by their occupation and age (e.g., P1, occupation, age).

With the sample characterisation established, the next sections present the results for each Dimension of Analysis, integrated with results for Subcategories of Analysis.

## **5.2. Interactions between Users and Voice Assistants**

This dimension of analysis explores the interactions between users and VAs. It corresponds to questions 1, 2, 3, and 4 of the semi-structured interviews, which aimed to gain a deeper understanding of participants' interactions with VAs.

To enrich the analysis, this dimension is divided into four subcategories of analysis from the survey, based on their relevance to the theme of user interaction with VAs:

- 5.1.1 *Usage Patterns of Voice Assistants* (Survey Questions: 4, 5)
- 5.1.2 *Functional Contexts of Voice Assistants* (Survey Questions: 7, 8)
- 5.1.3 *Interaction Styles with Voice Assistants* (Survey Questions: 9, 10, 11, 12)
- 5.1.4 *Desired Improvements in Voice Assistants* (Survey Question: 13)

These subcategories of analysis were chosen to be included in this dimension of analysis, because they reflect key variables that shape how users interact with VAs: how often and for how long they use them (usage patterns), for what purposes and on which devices (functional contexts), how they prefer to interact with them (interaction styles) and what improvements they would like to see (desired improvements). By establishing this match, this subsection illustrates how subcategories of analysis of quantitative data contribute to the understanding of qualitative dimension of analysis, providing points of connection between survey responses and interview excerpts.

### 5.2.1. Usage Patterns of Voice Assistants

This subcategory of analysis explores how long participants have been using VAs and how frequently they interact with them, based on the survey responses from the 23 interview participants.

As shown in Table 16, 60.9% of respondents reported using VAs for more than two years. In terms of frequency of use, the results indicate an even distribution between those who use them daily and those who use them more than twice a week, both accounting for 34.8% of the sample.

**Table 16**

*Duration and Frequency of Voice Assistant Usage*

Survey Question	Duration of Use	Frequency (n)	Percentage (%)
Q4: How long have you been using the voice assistant?	More than 2 years	14	60,9%
	1-2 years	5	21,7%
	6 months to 1 year	2	8,7%
	Less than 6 months	2	8,7%
Survey Question	Frequency of Use	Frequency (n)	Percentage (%)
Q5: How often do you use the voice assistant?	Daily	8	34,8%
	More than twice a week	8	34,8%
	Once a week	4	17,4%
	Once a month	3	13,0%

Source: Self-elaboration

For the majority of participants, the results point to a clear pattern: VAs are a part of their everyday routines. This pattern, identified through the survey data, was echoed during the semi-structured interviews, where participants described using VAs in everyday tasks: *“Almost every day I make a call or send a message using Siri.” (P2, Professor, 47)*; *“I feel like Siri almost knows me. I’m with her (Siri) every day.” (P3, Student, 22)*.

At this point, the reader may be wondering about the potential reasons behind low percentages for less frequent use, such as the 13% who reported using VAs only once a month. The semi-structured interviews data shed light on this by revealing that the less frequent use is often attributed to earlier negative experiences: *“When I started using them (Google Assistant), they were really bad. As they improved, I started using them a bit more depending on the context. But in my mind, there’s still that limitation. It has improved a lot, right? It’s much, much better now. But that initial impression still lives inside me.” (P22, Professor, 32)*.

### 5.2.2. Functional Contexts of Voice Assistants

This subcategory of analysis examines how participants interact with VAs, by focusing on two key aspects: the platforms or devices they use to access their VAs (Table 17), and the purposes behind these interactions (Table 18). Table 17 and Table 18 summarize the survey responses related to this subcategory of analysis. As both questions allowed respondents to select more than one option, the total number of responses exceeds the number of participants (n = 23). The percentages reflect the proportion of respondents who selected each option.

**Table 17**

*Platform or Device used to access the Voice Assistant*

Survey Question	Platform / Device	Frequency (n)	Percentage (%)
Q7: Which platforms or devices do you use to interact with your voice assistant? (Please select all that apply)	Smartphone	23	100,0%
	Car	8	34,8%
	Laptop	6	26,1%
	Smartwatch	6	26,1%
	Smart speaker (e.g., Amazon Echo)	5	21,7%
	Smart home devices (e.g., lights, locks)	4	17,4%
	Tablet (e.g., iPad)	3	13,0%
	Other (Motorcycle helmet intercom)	1	4,3%

Source: Self-elaboration

As illustrated in Table 17, smartphones clearly dominate as the preferred device for interacting with VAs, with every participant (100%) reporting its use. This finding was supported with the qualitative data: *“Siri is integrated in the phone I use every day.”* (P14, Student, 24); *“It’s easier to use Siri on the phone.”* (P12, Sales Back Office Assistant, 25).

The example of laptop use reflects the diverse ways people approach the VA. Although 6 out of 23 participants selected Laptop as a device to interact with their VA, later interview insights revealed that not everyone values this device equally: *“On the computer, I never really felt the need, because I have a keyboard, so I can type better, right? Two full hands.”* (P22, Professor, 32).

One particularly unique case emerged from the “Other” option in Table 17, where a participant uses a motorcycle helmet intercom system to interact with their VA: *“Most of the times I use the voice assistant, I’m on the motorbike because I can’t use my hands to touch the phone.”* (P13, Student, 19). This unexpected insight highlights the value of including open

options in the survey, allowing participants to share usage contexts that might otherwise go unnoticed.

**Table 18**

*Purposes for Using Voice Assistants*

Survey Question	Purposes of Use	Frequency (n)	Percentage (%)
Q8: For what purposes do you use the voice assistant? (Please select all that apply)	Making phone calls	19	82,6%
	Getting general information (e.g., weather updates)	18	78,3%
	Playing music	14	60,9%
	Setting reminders and alarms	12	52,2%
	Driving purposes (e.g., hands-free calls, traffic, driving directions)	10	43,5%
	Control smart home devices (e.g., lights, locks)	8	34,8%
	Entertainment (e.g., playful conversations)	4	17,4%
	Shopping or ordering products online	3	13,0%
	Asking health-related questions or managing medical information	1	4,3%

Source: Self-elaboration

According to Table 18, making phone calls is the most common reason participants use their VAs, with 19 out of 23 selecting this option in the survey. Later, during the semi-structured interviews, the author delved deeper into why using a VA to make a phone call is so appealing to participants. It was found that this preference was closely linked to a very relevant reality: driving requires full attention. And this is the moment when the VA offers a valuable solution through voice commands and their hands-free feature: *“I mostly use it (Siri) to make calls or send messages because it really helps when I’m driving. I don’t even need to look at the phone.” (P2, Professor, 47); “I’m taking driving lessons and using it (Google Assistant) will be useful when I start driving because of its hands-free feature.” (P22, Professor, 32).*

Beyond calls, Table 18 shows that participants also use VAs for a variety of other tasks. The option *“Getting general information (e.g., weather updates)”* was selected by 18 participants, *“Setting reminders and alarms”* by 12, and *“Control smart home devices (e.g., lights, locks)”* by 8. These everyday tasks were reflected during the semi-structured interviews: *“I ask Siri to set a timer when I’m cooking something, or when I’m going to take a nap. I also use it to ask for the weather in a specific place.” (P20, Student, 23); “I use it (Alexa) to turn on the lights, like ‘Alexa, turn on the kitchen light.’ (P15, Engineer, 25).*

The insights from this subcategory of analysis reveal two key aspects: a clear preference for smartphones as the main platform for VA use; and a strong emphasis on the convenience generated by the hands-free functionality – an aspect that will be further explored in the next subcategory of analysis.

### 5.2.3. Interaction Styles with Voice Assistants

This subcategory of analysis explores how users perceive and prefer interacting with their VAs. Complemented by qualitative data on this topic gathered during the semi-structured interviews, the analysis draws on survey data, as presented in Table 19, Table 20, Table 24.

**Table 19**

*Preferred Feature when using a Voice Assistant*

Survey Question	Responses	Frequency (n)	Percentage (%)
Q9: What do you enjoy most when using the voice assistant?	Convenience (e.g., hands-free functionality, multitasking)	22	96%
	Interactions	1	4%

Source: Self-elaboration

As Table 19 outlines, convenience (e.g., hands-free functionality, multitasking) stands out overwhelmingly as the most enjoyed aspect of using VAs, with 96% of participants selecting this option. The semi-structured interviews provided deeper insights into this preference, with participants frequently emphasising how voice interaction facilitates daily tasks: *“It’s mainly about functionality – something quicker, especially when I’m driving or at home doing other things. I use it (Siri) for the possibility of doing several things at once.”* (P4, Professor, 45); *“Normally, it’s to make tasks easier. For example, if I’m walking or in a hurry and I want to make a call, I ask Siri to start the call instead of going through the whole process of picking up the phone and finding the contact. Siri makes things like that much easier.”* (P18, Student, 18); *“Siri helps me do things without having to use my hands.”* (P20, Student, 23); *“I use Siri for multitasking – my hands are often busy.”* (P16, Professor, 44).

In contrast, very few participants (4%) cited the interactive nature of the VA as what they enjoy most, suggesting that functionality outweighs the social or conversational appeal – a topic that will be explored in more detail on the next page.

Moving on to Questions 10 and 11, these are presented together in Table 20, because both explore closely, related aspects of how users perceive their VAs – specifically, the human-like qualities of interactions.

**Table 20**

*Perceptions of Voice Assistants as Human-like versus. Technological Tools*

Survey Question	Responses	Frequency (n)	Percentage (%)
Q10: Do you feel your interactions with the voice assistant are similar to interacting with a person?	No	19	83%
	Sometimes	4	17%
Q11: Do you view the voice assistant primarily as a technological tool or as a conversational “partner”?	Technological tool	20	87,0%
	Conversation “partner”	1	4,3%
	Both	2	8,7%

Source: Self-elaboration

The results in Table 20 reveal a clear pattern in how participants perceive their interactions with VAs. The majority of participants, 19 out of 23, do not perceive these interactions as similar to speaking with a person. Only 4 participants reported that this resemblance occurs occasionally. This perception is reinforced by responses to Question 11, where 20 participants identified the VA primarily as a technological tool rather than a conversational “*partner*”.

To explore these perceptions in depth, the analysis now turns to the qualitative insights gathered through the semi-structured interviews, mainly under the A Priori Analytical Theme “A.2. *Human-like interactions with the Voice Assistant*”. This is where the added value of combining quantitative and qualitative approaches becomes clear: while the survey provides a broad overview of user perceptions, the semi-structured interviews helped uncover the underlying reasons – a layer that is essential in any scientific investigation seeking to explain behavioural patterns.

As the interview transcripts were analysed and reanalysed several times, it was possible to identify three user profiles based on how participants interact with their VAs. Each 23 participants were categorized into one of the following three groups: Group 1 (Table 21), Group 2 (Table 22), and Group 3 (Table 23).

**Table 21**

*Description of Group 1, Key Notes, and Participant Related Statements*

<b>Group Description</b>	<b>Key Notes</b>	<b>Related Statements Regarding Question 3 in Table 10</b>
Group 1: Participants who perceive their VAs strictly as a technological tool and do not use polite, human-like language	Interactions are purely utilitarian. Participants showed no emotional or conversational attachment.	<p><i>“I’m not talking to a person; I’m talking to a machine that will listen to what I’m asking and then execute it.” (P1, Professor, 54)</i></p> <p><i>“I never use Siri for casual conversations or to ask about favourite things or to talk. I only use it for a specific function. I would be incapable of asking someone for something without saying ‘please’ or ‘thank you’. But, since I see Siri as a machine, as a functionality that is not human, it has never, never crossed my mind to use expressions like ‘please’ and ‘thank you’.” (P2, Professor, 47)</i></p> <p><i>“I don’t use those expressions because I’m talking to a machine that has no connection, no heart.” (P5, Caregiver, 30)</i></p> <p><i>“He (Google Assistant) is not a person. He (Google Assistant) is not there to do me favours.” (P8, Systems Analyst, 41)</i></p> <p><i>“It’s just artificial intelligence, not a human being.” (P10, Unemployed, 28).</i></p> <p><i>“It’s a technological service at my disposal, something that serves my needs. It’s not like a person, a friend, or someone I feel the need to thank or show respect to.” (P18, Student, 18)</i></p> <p><i>“I don’t see Google Assistant as a person, so I really don’t feel the need to use that kind of eloquence.” (P23, Student, 21)</i></p> <p><i>“As soon as I give it a command, it executes and shuts down immediately, so for me to give it (Alexa) that kind of information, I’d have to call it (Alexa) again just to say thank you.” (P15, Engineer, 25)</i></p> <p><i>“Saying ‘thank you’ would usually trigger a response, and I don’t want a response. If I’m done, it’s done, it’s over, the interaction is finished. If ‘thank you’ becomes a way to end the interaction without a reply, then I’ll use it, but not as a way of expressing gratitude, it’s just a way to close the interaction.” (P22, Professor, 32)</i></p>

Source: Self-elaboration

In contrast to these strictly utilitarian interactions, a second group (Table 22) of participants also described their VA as a technological tool but adopted a more polite and socially conditioned style of communication. This group is particularly interesting because, during the semi-structured interviews, when asked whether they interact with their VA as if it were a human being, they firmly denied doing so. However, when the conversation shifted to the use

of polite expressions typically reserved for human interactions, many laughed and acknowledged the contradiction in their own behaviour.

**Table 22**

*Description of Group 2, Key Notes, and Participant Related Statements*

<b>Group Description</b>	<b>Key Notes</b>	<b>Related Statements Regarding Question 3 in Table 10</b>
<p>Group 2: Participants who perceive the VA as a technological tool but use polite, human-like language</p>	<p>Politeness does not necessarily imply that the VAs is perceived as similar to a human being; rather, it reflects a habitual behaviour rooted in their communication norms. Reflects how deeply embedded social habits are, even when dealing with non-human agents.</p>	<p><i>“That’s an interesting question, a good one, because I said before that Siri doesn’t have a personality but since it’s language, and I’m speaking rather than writing, it’s almost like I’m talking to someone. So, okay, it’s just executing a command, but still, if I can say ‘please’ or ‘thank you’, I do.” (P3, Student, 22)</i></p> <p><i>“Good manners lead me to use those expressions.” (P4, Professor, 45)</i></p> <p><i>“I don’t really know how to explain it. It has happened several times. For example, I say the wrong voice command, she (Alexa) executes the command I gave, and then, when I realise I gave the wrong one, I end up apologizing. But I think it’s just something involuntary. I guess it’s the normal of a conversation. Because when we ask someone for something and we do it wrong, or we do something we weren’t supposed to, we apologise. So, I think it’s a bit of a human interaction thing.” (P6, Artificial Vision Programmer, 24)</i></p> <p><i>“Since I’m usually polite, the ‘thank you’ or ‘please’ just ends up being part of the conversation – not as if I were talking to a person, but just using a kind of language that’s already inherent in me, that is part of who I am.” (P7, Retired, 62)</i></p> <p><i>“I can’t perceive it (Google Assistant) as anything beyond a programmed machine. I rarely use ‘please’. The ‘thank you’ I use quite frequently. I think ‘thank you’ comes out more naturally when the task had a higher level of complexity, and he or she (Google Assistant) executes it correctly.” (P11, Professor, 56)</i></p> <p><i>“I think it’s just the habit.” (P13, Student, 19)</i></p> <p><i>“For me, it’s more of a tool. But yes, I always say it. Honestly, I think it has to do a bit with... I don’t know if it’s education, but it’s already so intrinsic, it comes out so naturally.” (P14, Student, 24)</i></p> <p><i>“I use those expressions in a joking tone, just to see how she (Siri) responds”. (P17, Engineer, 53).</i></p> <p><i>“I don’t know, it’s a bit weird to say this, but I guess it’s a bit of empathy for a machine. I think that if I were Siri, I’d probably like to be told ‘thank you’. So, I say it.” (P20, Student, 23)</i></p>

Source: Self-elaboration

A curious detail that emerged across participants from both Group 1 and Group 2 is their tendency to refer to the VA using gendered pronouns such as “he” or “she” rather than the neutral “it”, which is typically used for non-human entities or systems without perceived personality. This tendency is observable in some of the statements mentioned previously. This linguistic choice, whether conscious or not, may serve as another subtle indicator of how social habits and humanized communication patterns persist, even when users are fully aware they are interacting with a non-human entity.

Building on these observations about the subtle humanizing tendencies in communication with VAs, the third group (Table 23) presents an even more distinct approach. Unlike the previous groups, where participants described their VAs purely as technological tools, this group admitted to interacting, or having interacted, with their VAs as entities with some degree of personality or social presence.

**Table 23**

*Description of Group 3, Key Notes, and Participant Related Statements*

Group Description	Key Notes	Related Statements Regarding Question 3 in Table 10
Group 3: Participants who interact or have interacted with their VA, as if they were interacting with a human and use polite, human-like language	Relational, and emotionally engaged interactions, reflecting a greater level of anthropomorphisation.	<p><i>“I think it’s more about the tendency to act as if we’re talking to a person – we already have the habit of saying thank you after receiving some information.” (P9, Student, 19)</i></p> <p><i>“It’s already automatic, as if I were talking to someone.” (P12, Sales Back Office Assistant, 25)</i></p> <p><i>“We’ve asked Siri how old she is, and she replied by saying when she was created. One time I even asked her if she wanted to marry me – but it was obviously just for fun – and she said she couldn’t answer that. Just like when we ask her to sing, she says she doesn’t have a very good voice and then sings a little bit of a song but stops right after. I use those expressions (‘please’ and ‘thank you’) a lot of times. It’s not that Siri works for me, but it’s carrying out a specific request I made. So, we still end up saying thank you, because that’s part of our daily life, our way of being. And if we’re kind to people, I tend to be kind to everything around me. And if Siri is helping me, I feel the need to return that help by saying thank you.” (P16, Professor, 44)</i></p> <p><i>“I’ve asked things like ‘What your favourite food?’ and those kinds of things. I use those expressions every day with people, so I guess it makes sense to use.” (P19, Student, 19)</i></p> <p><i>“When we hear the word ‘assistant’, it’s a bit hard to remember – at least for me – that it’s not a person on the other side</i></p>

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*answering, but the machine itself. Only afterwards do I realise: 'Oh, I was talking to a machine, it felt like I was talking to a person. I always say 'thank you' when I do a search, or I say, 'good morning', 'good afternoon'. Sometimes we even forget that we're talking to a computer or a phone. It's as if we think it's a person.'* (P21, Professor, 48)

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Source: Self-elaboration

As a final reflection on this third and last group, an interesting insight that emerged during the semi-structured interviews was the spontaneous way children interact with VAs. Although the interview questions did not mention or inquire about children's interactions, two participants still brought up that their children speak to Siri as if it were a real person: *"My children often do that (interact with Siri as if it were a person) to experiment – since they often hear me using it, they sometimes try those kinds of interactions themselves."* (P4, Professor, 45); *"I have two daughters; one is 15 and the other is 10. The younger one especially really enjoys talking to Siri and asks her lots of things."* (P16, Professor, 44). When the author asked this participant about the possible reasons for these human-like interactions, the participant explained: *"I think she finds it funny – she asks Siri to sing, to tell jokes, she asks her for lots of information. I guess she finds it different."* (P16, Professor, 44). This observation raises a thought-provoking question: could this behaviour signal a shift in how future generations will relate to VAs? As these children grow up surrounded by such technologies, will their expectations and interactions with VAs evolve in new, more natural or human-like forms? This potential transformation warrants further investigation.

After presenting the three detailed groups, it is important to clarify how these classifications relate to the survey results. For instance, although 20 out of 23 participants stated in response to Question 11 (Table 20) that they primarily view their VA as a technological tool, this does not imply that all of them belong to the first group. Some of these participants, while acknowledging the technological nature of their VA, still use polite and human-like language with their VA, making them more appropriate for the second group. Similarly, while only four participants indicated in the survey that their interactions with VAs sometimes feel like interacting with a person, five participants expressed statements in the semi-structured interviews that reflect more human-like interactions, aligning them with the third group. These small differences are to be expected and reflect the very purpose of the semi-structured interviews: to deepen participants' experiences and opinions.

Moving on to the final analysis within this subcategory, Table 24 presents survey data on whether participants prefer using VAs over typing.

**Table 24**

*Preferences between Voice Assistant Usage and Manual Typing*

Survey Question	Responses	Frequency (n)	Percentage (%)
Q12: Do you prefer using a voice assistant over typing?	Yes	6	26,1%
	Depends on the situation	9	39,1%
	No	8	34,8%

Source: Self-elaboration

According to these results, preferences varied notably among participants. For instance, 6 participants expressed a clear preference for using VAs over typing. Through semi-structured interviews, it was possible to elucidate some of the reasons behind these preferences. One commonly cited advantage of using VAs over typing is the ability to “*do things without having to use my hands*” (P20, Student, 23). This was reinforced by other participants who highlighted the convenience of voice input in scenarios where typing is impractical, such as “*when I have my hands wet and need to make a call at the same time*” (P2, Professor, 47). Similarly, one participant shared: “*If I’m walking or in a hurry and I want to make a call, I ask Siri to start the call instead of going through the whole process of picking up the phone and finding the contact.*” (P18, Student, 18). Beyond matters of convenience and safety, one participant highlighted how VAs are increasingly replacing manual tasks: “*I used the voice assistant precisely to avoid writing as much as possible. To set an alarm manually, I have to open the alarm app, set the time, activate it, and check when it will go off. But with the voice assistant, I just say, ‘Set an alarm for twenty minutes from now’. It’s a single interaction. Doing it manually takes five or six steps, depending on the app or the type of alarm. And that – fewer steps than doing it manually – is extremely convenient. Anything I could avoid writing, I didn’t write. And Google Assistant did everything.*” (P22, Professor, 32).

As indicated in Table 24, 9 participants stated that their preference depends on the situation. An important aspect to consider is that, for many participants, choosing “*depends on the situation*” was not merely about personal preference, but about safety-related necessity: “*most of the times I use the voice assistant, I’m on the motorbike, so I can’t use my hands to touch the phone*” (P13, Student, 19). VAs are not only convenient but can also serve as a safer alternative when manual interaction with a device (e.g., typing) would be risky or impossible.

Finally, 8 participants reported that they prefer typing over using VAs. Interview data helped to understand that this preference is often linked to issues of VA performance – a topic explored in the next subcategory of analysis (5.2.4. Desired Improvements in Voice Assistants). Some participants mentioned that when the VA does not meet their expectations, they turn to

typing instead: “*When it doesn’t meet my expectations, I simply try another way to search, either by scanning or typing.*” (P4, Professor, 45).

#### 5.2.4. Desired Improvements in Voice Assistants

This is the last subcategory of analysis within the first dimension of analysis – Interactions between Users and Voice Assistants. It focuses on participants’ desired improvements for their VAs. Understanding these areas for enhancement is crucial, as they can significantly affect participants’ willingness to interact with their VAs.

As presented in the quantitative results in Table 25, an expressive 82.6% of participants identified service performance – such as incorrect responses and technical failures – as the primary area they wish to see improved in their VAs.

**Table 25**

*Desired Improvements in Voice Assistants*

Survey Question	Responses	Frequency (n)	Percentage (%)
Q13: If you could improve one characteristic about your voice assistant, what would it be?	Service performance (e.g., incorrect responses, technical failures)	10	82,6%
	Customise the tone of voice	3	13,0%
	Stronger privacy protection	1	4,3%

Source: Self-elaboration

This desire for better service performance was further explored in the qualitative data, particularly in responses to Interview Question 4, which asked participants whether they had ever reacted negatively to their VA when the response failed to meet participants’ expectations. While the survey identified the main area in need of improvement, the semi-structured interviews explored in deep how that area and the flaws associated, made participants feel (e.g., frustration, disappointment, etc.).

Of the 23 interviewees, 20 stated that they do not react negatively, even though they acknowledged that service performance could be improved, as reflected in the survey results. Their justifications fell into two reasons: (1) perceptions of technology and (2) personal disposition.

Regarding the reasons related to perceptions of technology, participants expressed an understanding that VAs are still evolving tools and, as such, are bound to have limitations: “I

*know the limitations of the technology, I know it is extremely prone to errors.” (P8, Systems Analyst, 41).* Some participants even demonstrated optimism, believing that system flaws are part of the learning process: *“These technologies are still new. Sometimes they’re going to have a lot of flaws. For example, since I have an accent, sometimes it doesn’t understand what I mean. Over time, these things will improve, so there’s no point in getting upset. In fact, it’s the flaws that help. The flaw is what improves everything.” (P5, Caregiver, 30); “Over time, as I’ve kept using it, the voice assistant has improved a lot. All of this is due to the neurological structure of the programme, which needs inputs to improve. So, I don’t think anyone should take it the wrong way. This is software, not a person. It needs inputs and will keep getting better with each of our daily uses.” (P6, Artificial Vision Programmer, 24).*

In terms of personal disposition, participants noted that their lack of negative reactions reflects their general communication style and personality: *“I usually don’t speak badly to people, and I don’t do it with the voice assistant either. I think it has to do with our personality. Generally, I tend to always respond in the politest way possible, so when I talk to the voice assistant, I end up doing it the same way I would with a person. But I think this is related to each of our ways of being, our way of interacting with others. By tendency, I avoid any kind of conflict, so if I don’t get into conflict with people, I’m not going to get into conflict with the voice assistant either.” (P21, Professor, 48); “I usually say ‘that part is wrong, please rephrase it’, because I am not negative by nature when dealing with others.” (P7, Retired, 62)*

Offering now insights on the 3 participants who admitted reacting negatively to their VA when the response failed to meet their expectations, these reactions included frustration, expressions of annoyance, or even the use of harsher language. When asked to elaborate, participants’ responses revealed internal contradictions with one participant reflecting on the paradox of treating the VA politely – almost as if it were human – yet reacting harshly when it fails: *“I don’t know, it’s a bit hypocritical because I say ‘please’ and ‘thank you’ as if it were a person – treating her (Siri) like a human being – and then I treat her (Siri) badly for not being human, it’s a bit contradictory.” (P19, Student, 19).* Another participant emphasised the mounting frustration that arises when basic commands are misunderstood, linking this reaction to the broader expectations around AI’s potential: *“Sometimes I react negatively, maybe even using swear words. It’s very frustrating when she (Google Assistant) can’t perform a basic task to which she was programmed for. And I think this frustration grows as we read more about artificial intelligence supposedly replacing humans. But then, when I ask her (Google Assistant) to simply open the curtains at home, she (Google Assistant) gets completely confused, and I feel frustrated, thinking, ‘how can it replace humans if it can’t even do something so simple?’ I*

*believe it's more about that – a frustration with a very big promise that sometimes hasn't yet materialized.” (P11, Professor, 56)*

Offering an opposite perspective, one participant clarified that the feeling of frustration was toward himself and not toward the VA: *“It was more my own frustration for not asking the right question. Nowadays, I rarely ask the wrong question, and even when I do, he (Google Assistant) usually corrects me – either by asking me to be more specific or by giving a generic answer and suggesting that he can be more specific. That helps a lot. But my frustration was mostly about me not understanding how he (Google Assistant) worked. When he (Google Assistant) made mistakes and I felt frustrated, it was more due to my lack of knowledge.” (P22, Professor, 32)*

The qualitative insights complemented the statistical findings by offering emotional and behavioural context to the area identified as needing improvement – service performance – thus enriching the overall analysis. With this, the results for the first dimension of analysis – Users' Interactions with Voice Assistants – are concluded. It is important to highlight, once again, how the combination of quantitative and qualitative data proved valuable for both presenting and deepening the understanding of users' interactions with VAs.

### **5.3. Consumer Engagement with Brands through the Use of Voice Assistants**

This second dimension of analysis explores how participants engage with brands through the use of VAs. While the previous dimension combined both quantitative and qualitative data to explore users' interactions with VAs, this second dimension of analysis places a stronger emphasis on qualitative insights. Nonetheless, it is supported by one key survey subcategory of analysis: Usage Patterns of Voice Assistants, particularly the frequency of VA use.

At this point, the reader may wonder why the subcategory of analysis “Usage Patterns of Voice Assistants”, specifically the frequency of use, contributes to the understanding of this dimension of analysis. The justification is clear: when consumers interact with VAs, they are interacting with the brand that provides and manages the technology. The purpose of examining the frequency of use within this dimension of analysis, is to understand whether the frequency of interactions with the VA affects consumers' level of engagement with the brand behind that VA. High-frequency use implies that the brand becomes embedded in consumers' daily routines, granting increased access to their behaviours and preferences. This deeper integration

allows brands, through their VAs – “Siri is a more personal intermediary with the brand” (P20, Student, 23) – to collect vast amounts of personal data – “data are the new fuel” (P11, Professor, 56) – enhancing their understanding of consumers. According to Table 16, eight participants interact with their VAs on a daily basis and eight interact more than twice a week. But what are the benefits of these repetitive interactions between the consumer and the VA?

Before focusing on whether these interactions foster brand engagement, it is relevant to first examine the overall benefits that emerged from these continuous interactions. Findings revealed that the main benefit arising from the continuous interactions between consumers and VAs is the data collected by brands, and with what can be achieved with that data: “Without a doubt, the interactions with Google Assistant increase their (Google) value.” (P11, Professor, 56). Therefore, Table 26– developed by the author to facilitate comprehension – highlights the key advantages of data collection through VAs, alongside supporting statements from participants.

**Table 26**

*Advantages of Data Collection via Voice Assistants*

Data Collection Advantages	Supporting Statements
Enhanced understanding of consumers: > enable brands to personalise their content and products according to consumers preferences	<p>“Siri knows what my music preferences are. She (Siri) even gives me suggestions for songs I want to play.” (P3, Student, 22)</p> <p>“One of the benefits is the kind of products that Amazon may start to offer or sell. This could be an extra point for Amazon, because Alexa, by absorbing all the inputs, allows them (Amazon) to see what the trends are, and from there, products will emerge that align with those trends.” (P6, Artificial Vision Programmer, 24)</p>
Better assist consumers in their daily lives by knowing their routines: > anticipate consumers’ needs and habits based on this knowledge	<p>“The advantage of using a VA for brands is that, with the information they collect from us, they can create customised advertisements – everything ends up being more personalised for the consumer.” (P12, Sales Back Office Assistant, 25)</p> <p>“There was a time when I used to take naps quite often, and I usually take naps of the same length. So, at some point, when it reached the time, I normally took my nap, Siri would suggest, ‘Do you want to set a timer now?’ And I thought that was funny. That happens because Apple has that information about me – that I usually take a nap at that time and for how long.” (P20, Student, 23)</p> <p>“She (Google Assistant) once suggested that I should leave the house because otherwise I would be late for a certain appointment, and that appointment was scheduled in my Google Calendar. So, I’m sure she (Google Assistant) uses services that are connected, and my personal information stored in other Google services, such as Gmail, Google Calendar, etc.” (P8, Systems Analyst, 41)</p>

Access to intimate, private consumer spaces, such as home environments:

- > brands gain competitive advantage by knowing highly personal consumer behaviours that are otherwise difficult to observe

*“Google knows exactly how often I open my fridge, how often I cook. It (Google) even knows what I’m cooking. Because when we set a timer on Google, if we say it’s a timer for pizza, after five or six minutes, it plays a more Italian-style song; if we say it’s for sushi, it plays a different sound.” (P11, Professor, 56)*

*“I understand that my feedback is important for technological bias, because it’s through these audio recordings that she (Google) will be able to improve the service, and I contribute to that. I know Google will access these audios in the future to try to improve the service, especially when there’s a wrong answer, and I’m sure they (Google) have some internal specific channel to ensure that it improves.” (P8, Systems Analyst, 41)*

Improve and train the VA

- > enhancing user satisfaction with the VA

*“I believe they (Apple) collect data, that allows them to train artificial intelligence systems.” (P17, Engineer, 53)*

*“The more I use it (Siri), the more I’m training it (Siri) – so the more I contribute to the AI algorithm working better.” (P18, Student, 18)*

*“They (Apple) build a larger database from my interactions with Siri, which they can use to train the voice assistant.” (P13, Student, 19)*

*“Data collection is important for training the VA.” (P22, Professor, 32)*

*“Google teaches it (Google Assistant) to know me better and ends up directing more personalised answers and content based on my interactions with it (Google Assistant).” (P10, Unemployed, 28)*

Source: Self-elaboration

The insights presented in Table 26 were obtained from participants’ responses to Interview Question 5, which explored whether participants believe their interactions with the VA benefit, in any way, the brand behind the VA. The findings revealed that the continuous interactions between consumers and VAs allow brands to better understand their consumers and, through data, adapt their offerings accordingly. This reflects the reality of the current market: the goal is no longer to offer generic products, but to offer tailored products that align closely with users’ needs and desires – and this is where the VA plays a key role. Moreover, VAs provide brands with access to intimate, private consumer spaces – such as the home environment. This level of insight is difficult to achieve through other means; after all, how else would a brand know the exact times a consumer cooks, opens the fridge, if not through a VA?

In line with this, it is important to clarify that while some participants described the VA as “*knowing*” certain habits, the VA itself (e.g., Siri) does not possess knowledge of user data.

Rather, it is the brand behind the VA (e.g., Apple) that holds this information and uses the VA as an intermediary (as previously discussed) to collect and act upon it. For instance, although a participant stated, *“I feel like Siri almost knows me”* (P3, Student, 22), it is not Siri that *“knows”* the participant, it is Apple.

At this point, it becomes clear why the subcategory of analysis “Usage Patterns of Voice Assistants”, more specifically the frequency of VA use, is aligned with this dimension – the higher the frequency of VA use, the larger the amount and diversity of data collected by brands. The 8 participants who reported using their VA daily, and the 8 who use it more than twice per week, are examples of contributors to this data collection.

Given the relevance of these insights, it is worth mentioning that a personal idea, entirely related to how brands can enhance their marketing strategies through the use of VAs, will be presented in Appendix G. As this is the results chapter, the idea will not be discussed here.

Having established the key benefits emerge from the interactions between users and VAs, the next step is to explore how these interactions influence user engagement with the brand behind the VA. To explore this, participants’ responses to Interview Question 6 – which asked whether participants believe their interactions with the VA influence their engagement with the brand behind it – were insightful, although varied.

Several participants reported that interactions with their VAs do not affect their engagement with the brand behind the technology. When asked to elaborate, they explained: *“For me, it (Siri) is just a tool that either works or doesn’t; it’s not because of it (Siri) that I will like Apple more or less.”* (P1, Professor, 54); *“I think it is not Siri itself that makes me enjoy using Apple. I believe there are other advantages or features, not specifically Siri. Therefore, it is an added value, but it is not the primary factor for me.”* (P16, Professor, 44).

Others made a valuable distinction between their engagement with the VA and their engagement with the brand behind the VA. For instance, one participant reported feeling more engaged with the VA due to the frequent use but clarified that these interactions did not translate into a stronger engagement with the brand: *“Not more engaged with Amazon. With Alexa yes, but Amazon as a brand – I’ve never felt more engaged to it just because of the voice assistant. However, Alexa is without a doubt, out of all the voice assistants I’ve tried, the one I currently find to be the most stable and the most developed”* (P6, Artificial Vision Programmer, 24).

In contrast to participants who reported no influence of VA interactions on their engagement with the brand, a few indicated that these interactions make them feel closer with the brand behind it: *“I feel that the fact that Siri already knows my music preferences and suggests songs that I want to hear, makes me feel closer to the brand. I really enjoy using it*

*(Siri), and it makes me want to acquire more Apple products.” (P3, Student, 22).* Similarly, another participant explained that their positive experience with the VA Alexa motivates them to explore other Amazon products. To the question of whether their interactions with Alexa influence their engagement with Amazon, the participant stated: *“Yes, for example, Amazon recently announced that Alexa will include ChatGPT, the artificial intelligence tool. One way to access ChatGPT is by subscribing to Amazon Prime. And this has already been a topic of conversation at home, we are considering that possibility. It is a way to connect with Amazon.” (P15, Engineer, 25).* In line with this, another participant also noted that their interactions with Siri, influence their engagement with Apple: *“Yes, I feel I have a more personal relationship with Apple. I think it (Siri) helps shape my opinion of them (Apple) and the way I engage with the brand. Siri is like a more personal intermediary with the brand. And I think the efficiency they (Apple) have with the voice assistant helps me change my opinion about them (Apple) because, as I said, it feels more personal.” (P20, Student, 23).*

After analysing the results presented in this second dimension of analysis, there is no denying that interactions between users and VAs bring benefits: *“every time we use Siri, Apple benefits” (P19, Student, 19).* The findings reveal that the main benefit lies in the consumer data and input that brands can collect through VAs. However, the interactions between VAs and users do not necessarily translate into increased user engagement with the brand behind the VA – the responses were mixed, with some participants perceiving an impact while others did not.

As a final reflection, it is noteworthy how everything revolves around data. Data are indeed *“the new fuel” (P11, Professor, 56),* as acknowledged by one of the participants. Everything centres on data collection and the possibilities that arise from it, and VAs emerge as a powerful solution for brands to gather these data. Times are changing, as are consumer preferences. To stand out from the competition and deliver genuine value to consumers, brands need to know their consumers as well as a best friend would. VAs serve as the essential intermediary to make this possible.

#### **5.4. The role of Brand Credibility in the Use of Voice Assistants**

This dimension of analysis explores the role of brand credibility in the use of VAs, drawing on both quantitative and qualitative data. This dimension is linked to the subcategory of analysis

“Brand Preference”, which corresponds to the responses from Question 3 of the survey identifying the VA each participant uses.

The choice of a specific VA appears to be closely linked to users’ perceptions of the brand behind the technology. To better illustrate this point, and as a brief contextual note, this paragraph considers the broader group of survey respondents over the age of 18 who reported using a VA (n=79). Among these 79 respondents, only one person mentioned using a non-branded VA. All other respondents reported using branded VAs: Google Assistant from Google (28 out of 79), Alexa from Amazon (14 out of 79), Siri from Apple (35 out of 79), and Mercedes (1 out of 79). This widespread preference for branded VAs clearly highlights the relevance of brand recognition in the adoption of this technology. Besides this, Siri emerged as the most frequently used VA among the 79 respondents, accounting for 35 responses, 44.3% of this broader group – nearly half of all participants. This result is likely influenced by the fact that Siri comes pre-installed on Apple devices, such as iPhones. Moreover, in this broader group of 79 respondents, 86.1% of participants reported interacting with their VA via smartphone. This presents a possible reason for why Siri emerged as the most frequently used VA.

The brief overview of the larger survey sample (n=79) was provided to contextualize general trends in brand preference. However, the focus now shifts specifically to the final sample (n=23), with their VA usage detailed in the table below (Table 27):

**Table 27**

*Most frequently used Voice Assistant*

Survey Question	Responses	Frequency (n)	Percentage (%)
Q3: Which voice assistant do you use most often?	Siri	13	56.5%
	Google Assistant	8	34.8%
	Alexa	2	8.7%

Source: Self-elaboration

As illustrated in Table 27, all 23 participants reported using a branded-VA, underscoring the strong influence of brand presence in users’ choice of VAs. In addition – and consistent with the broader survey sample (n=79) – Siri once again emerged as the most used VA.

Interview Question 7 explored what influenced participants’ choices to use a branded-VA (such as Siri from Apple, Alexa from Amazon, Google Assistant from Google) over a non-branded one. After thoroughly analysing the transcripts, it was possible to identify two distinct groups of responses:

- The first group reported that the VA simply comes pre-installed on devices they already own and use daily, making it the most natural choice: *“Since I have an iPhone, Siri is the one that is the most ‘within reach’ for me.” (P19, Student, 19); “The phone is from Apple, and in that sense, it ends up being easier to use Siri” (P12, Sales Back Office Assistant, 25).* This confirms the initial observation that Siri, being embedded in Apple devices – particularly smartphones – is the preferred option for many participants.
- The second group highlighted brand credibility and brand reputation as key factors influencing their choice of a VA: *“Google has a bigger name and greater trust from users, so it’s easier to share certain information with Google Assistant, because, by default, we believe that Google is trustworthy” (P23, Student, 21); “Amazon, Google, and Apple are pioneers in this area. They are the biggest brands in the tech world, at least when it comes to well-known voice assistants. It’s about the sense of responsibility that the brand itself conveys, and it’s a vote of confidence that we all give. I think most people don’t really pay much attention to voice assistants from lesser-known brands, because this involves a lot of data that we don’t want just any brand to have access to.” (P6, Artificial Vision Programmer, 24); “I think reliability was the main thing I was looking for at the time – to have reliable equipment and a credible brand. For example, with Google, I can’t recall any major data leak scandals or reputational issues involving Google. It seems they (Google) are professionals, so I chose to follow that path.” (P11, Professor, 56)*

Although, as previously noted, the answers to Question 7 of the semi-structured interview, were organised into two groups, the responses to Question 8 – which asked why participants think people generally prefer to use VAs from well-known brands like Amazon, Apple, or Google rather than from lesser-known brands – were much more unified. Participants consistently mentioned factors such as credibility, trust, and expertise as the main reasons for this preference. Trust and expertise are key components of the broader concept of brand credibility (as discussed in the subsection 2.2.3. *Engagement and Credibility in Consumer-Brand Relationships* in the Literature Review chapter). The idea of security and privacy protections linked to credible and reliable brands was echoed by all 23 participants: *“We assume that big brands will handle our data more carefully, and that definitely brings a sense of security” (P8, Systems Analyst, 41); “It’s about the degree of reliability. Voice assistants involve data processing – including personal data – and we need to be aware of that when we use these tools. I think we tend to believe that these big brands will handle our information more responsibly” (P21, Professor, 48); “I like what is safe. We hear these names (brands) so*

*often and we assume they must be the safest ones because they are the most well-knowns” (P5, Caregiver, 30); “The scale of these companies gives people a different level of confidence” (P6, Artificial Vision Programmer, 24); “These brands convey security and credibility. Therefore, I believe people prefer to use a voice assistant from a brand they know is credible and reliable. People usually associate these brands with positive experiences. I use Siri because I know that probably it won’t cause me any problems and that it comes from a brand (Apple) that has a certain level of credibility and quality as well. I think it’s the main factor that leads people to choose well-known brands over others they might not know.” (P14, Student, 24); “They are more credible, well-known brands with a scale that everyone recognises” (P12, Sales Back Office Assistant, 25); “If it’s from a well-known company that we already trust, we end up trusting more the voice assistant they introduce us. It’s Siri from Apple, it’s Google Assistant from Google. I know Google, so I assume Google Assistant must be trustworthy. But if it’s a voice assistant from a lesser-known brand, I start thinking: What is that? Can I really trust that voice that’s talking to me?” (P3, Student, 22).*

The interview answers to Question 9 – which asked whether the credibility of brands like Apple, Amazon, and Google affects participants’ confidence in their products, namely the VAs – further reinforce the strong influence brand credibility has on the use of VAs: *“Apple is a very well-known brand, globally known, and of course, any product they (Apple) release is expected to be reliable” (P1, Professor, 54); “Apple has always projected an image of credibility – they share a lot of information about the brand, what they do, the research behind it, and the security guaranteed for their users. Therefore, yes, I believe that the credibility Apple holds in the market clearly influences the choice of this voice assistant (Siri) as well as all their other products” (P14, Student, 24); “It (Google) is a publicly traded company, with shares on the market. It (Google) must have strict governance protocols and policies that somehow convey a sense of security when using Google Assistant” (P11, Professor, 56).*

The results within this dimension of analysis highlight a clear and overall preference for using VAs from credible brands as these perceive to offer a greater sense of security in terms of data handling: *“Google is a trustworthy brand, a brand that has already earned consumers’ respect, and therefore it’s easier for us to trust Google with our data” (P23, Student, 21).* An important point to consider is that, even when the VA is pre-installed on a device – such as Siri on Apple devices – it is not used solely because it comes with the device. Trust in the brand behind VA also plays a key role in these cases: *“When Siri was introduced to us, at first it was a bit strange because it was a new technology, but since it’s from Apple, I felt comfortable using it (Siri)” (P3, Student, 22).*

As a significant point of reflection, and as a bridge to the next dimension of analysis, it is worth noting that the perceived brand credibility compensates for lack of knowledge about data practices. In other words: even without knowing exactly how their data is handled, participants feel comfortable using the VA and sharing personal information with it, because it comes from a brand they trust: *“I have more trust in giving my data to well-known brands like Apple or Google, than handing over my data to a voice assistant from a brand I don’t know and don’t know what they will do with my data. It’s not that I know exactly what Apple will do with my data, but I think that because I already have some trust in the brand, it allows me to use that brand’s voice assistant instead of others” (P20, Student, 23).*

### 5.5. Privacy Concerns with Voice Assistants

Following the discussion on the role of brand credibility in the use of VAs, this final dimension of analysis emerges as a natural continuation. While credibility reflects users’ general perception of trustworthiness in a brand, privacy concerns delve deeper, exploring whether that trust extends to sensitive and confidential interactions with the VA. Given that VAs often operate in always-on listening modes, the boundary between convenience and intrusion becomes particularly relevant.

Similar to the previous three dimensions of analysis, this one integrates both quantitative and qualitative data. Within this dimension, the subcategory of analysis “User Trust in Voice Assistants for Data Privacy” is explored through the survey question 6. Table 28 presents the survey responses of the 23 participants to this question.

**Table 28**  
*Trust in Voice Assistants with Confidential Information*

Survey Question	Responses	Frequency (n)	Percentage (%)
Q6: Do you trust your voice assistant with confidential information (e.g., banking details, passwords)?	Yes	1	4.3%
	No	22	95.7%

Source: Self-elaboration

The results reveal a striking lack of trust among participants when it comes to sharing confidential information with their VA. Out of the 23 respondents, only one participant

expressed confidence in their VA handling sensitive data such as banking details or passwords, while the overwhelming majority (22 participants) indicated distrust in this regard. The survey results alone already provide a strong indication of ongoing privacy concerns surrounding the use of VAs. The qualitative data further deepen this understanding, offering richer insights into the underlying reasons behind users' privacy concerns.

Question 10 in the interview directly addressed perceptions of privacy concerns, by asking participants whether they have any privacy concerns when using their VA, such as the possibility of their conversations being recorded without their knowledge or the possibility of their personal information being misused. Depending on the participants' responses to this question, two follow-up questions were asked. If a participant confirmed having privacy concerns, they were asked whether they believe that the credibility of a brand like Apple, Amazon or Google helps mitigate those concern. Conversely, if a participant denied having privacy concerns, they were asked whether their lack of such concerns might be influenced by the credibility of the brand behind the VA they use (e.g., Apple, Amazon, Google).

Following a thorough analysis of the qualitative data, two tables were created to organise the results accordingly: one for participants who expressed privacy concerns and believe that brand credibility can mitigate those concerns (Table 29); and another for participants who did not express such concerns and attribute this sense of reassurance to the credibility of the brand behind the VA they use (Table 30).

Among those who expressed privacy concerns, participants often recognised this as an inherent aspect of *“the technological world we live in”* (P7, Retired, 62). Within this group, some participants shared thoughts that reflect both awareness of the risks – *“It’s a constant concern, because we really don’t know who’s listening to us.”* (P19, Student, 19) – and acceptance of the trade-offs: *“nowadays, voice assistants are so useful that we often weigh the pros and cons and end up taking the risk. Yes, it’s a concern, but we end up giving in because of the benefits we get from using them (VAs)”* (P21, Professor, 48). Others revealed an apprehension about the constant listening involved in using VAs, especially given their always-on nature: *“when we talk to the smart speaker and it interacts with us, it means it’s constantly listening to what’s happening around, and that implies a certain level of trust”* (P17, Engineer, 53). Some participants even acknowledged a degree of contradiction in their behaviour: *“of course I have those concerns, but in a way, it ends up being a bit hypocritical because we worry about it, but at the same time we expose ourselves by interacting with the voice assistants.”* (P10, Unemployed, 28). After identifying the participants who expressed privacy concerns, the next step was to explore whether they believed that brand credibility could help alleviate those

concerns. Table 29 presents key statements from participants who, despite having privacy concerns, believed that brand credibility could mitigate such concerns.

**Table 29**

*Participants Statements on Privacy Concerns and Brand Credibility Mitigation*

Interview Question	Participants Statements
10.1) Do you think that the credibility of a brand like Apple/Amazon/Google helps mitigate those privacy concerns? Why?	<p><i>“Yes, I believe that when using a brand like Google, which is well-known and operates on a much larger scale, the control it has over data usage is much greater compared to less-known brands.” (P21, Professor, 48)</i></p> <p><i>“Yes, because of the company’s scale. Google has a reputation to uphold, investors to answer to, and must comply with data protection laws. They can’t lose that credibility and trust. I authorised the recording and use of my audio solely to improve the service. At no point did I authorise, for example, the use of my audio to sell to other partners or to sell services. And I believe and trust that Google does not do that.” (P8, Systems Analyst, 41)</i></p> <p><i>“Yes. Because it’s a brand that already has a well-established name in the market and it wouldn’t risk doing anything illegal or unethical.” (P23, Student, 21)</i></p>

Source: Self-elaboration

Regarding participants that did not express privacy concerns, with one specific exception – who explained that their lack of concerns stems from the belief that even if some information is accessed, it would not be critical enough to raise concern: *“I don’t use Siri for very personal interactions, so it wouldn’t be too critical if those interactions were being recorded. I’m not concerned about Siri having access to my alarm times or the weather I search for” (P14, Student, 24)* – the majority of participants, and as a bridge to the following table, associated the lack of privacy concerns, directly to the trust they already have in the brand behind the VA they use: *“I have a lot of trust in Apple, and with Siri even if someone is listening, I believe that, since it’s Apple, it’s for service improvement and not to do anything wrong. I trust the brand, so I don’t have those concerns. I have thought about it, but because it’s Apple, and I trust them, I don’t have those concerns” (P3, Student, 22)*. The following table (Table 30) presents key statements from participants who do not have privacy concerns when using their VAs and associate this lack of concerns to the credibility of the brand behind the VA they use.

**Table 30**

*Participants Statements on Absence of Privacy Concerns and Brand Credibility Mitigation*

Interview Question	Participants Statements
	<p><i>“Yes, because I think that credibility gives me a sense of security. Apple is a credible and reliable brand that makes me feel safe. I always prefer to use Siri because it’s associated with a brand I recognise and trust.” (P14, Student, 24)</i></p>
<p>10.2) Do you think your lack of privacy concerns might be influenced by the credibility of the brand behind the VA (Apple/Amazon/Google)? Why?</p>	<p><i>“Yes. The fact that it (Siri) is from Apple makes me have complete confidence in Siri. So far, Apple has never given me any reason to doubt them or their products. I’ve always had a lot of trust in their (Apple) products, and as long as everything keeps going well, I will continue to trust them.” (P3, Student, 22)</i></p> <p><i>“I think so. Apple transmits an image of trustworthiness. Therefore, there’s no apparent reason for me to distrust Siri when it comes to security.” (P18, Student, 18)</i></p>
	<p><i>“Yes. I’m not one of those people who gets very stressed about privacy. Besides, I trust the brand behind.” (P11, Professor, 56)</i></p>

Source: Self-elaboration

Both tables serve as a valuable comparison, revealing a consistent insight: regardless of whether participants expressed privacy concerns, brand credibility consistently plays a central role. For those who reported such concerns, trust in reputable, credible brands helps alleviate their fears; for those who did not report privacy concerns, this often reflects their confidence in the brand behind their VA. Both tables were organised based on statements identified with the A Priori Analytical Theme “D.2. Effect of brand credibility on how privacy concerns are perceived”.

As a final note of reflection on data alignment, although 22 participants, as illustrated in Table 28, reported in the survey (Question 6) that they do not trust their VA with confidential information (e.g., banking details, passwords), this does not necessarily imply a lack of overall trust in their VAs. Rather, it suggests that users establish specific boundaries, particularly in sensitive areas such as banking. Survey instruments often rely on binary responses, which can fail to capture the nuance and complexity of individual perceptions. For instance, a participant who responded negatively to trusting their VA with banking information may still trust it in other contexts without hesitation: *“The kinds of things I ask Siri are usually to call someone on speaker or to set a timer. But I wouldn’t ask, for example, ‘Hey Siri, log into my bank and transfer some money’, because I don’t fully trust that kind of process” (P12, Sales Back Office Assistant, 25)*. This demonstrates that privacy concerns can be situational rather than absolute. The same participant may simultaneously feel confident using the VA for daily tasks while

avoiding it in more sensitive domains. This illustrates how a seemingly simple “No” response in a survey can mask more ambivalent or conditional attitudes. While the survey data captured participants’ initial responses in a comparable format, the semi-structured interviews reveal deeper layers of meaning, showing that privacy concerns exist along a continuum rather than a binary divide. Such patterns are well documented in mixed-methods research, where quantitative data provide broad patterns, and qualitative insights contribute contextual richness and explanatory depth.

## 6. DISCUSSION

Having concluded the presentation of the results, this chapter provides a reflective interpretation and critical discussion of the findings in relation to the specific research objectives – and consequently to the general research objective – and the existing literature on the topic of VAs and CBR. While the previous chapter provided a narrative account of the data collected, the present chapter shifts focus toward interpreting the meaning and implications of those results.

This chapter is divided into three sections, each addressing a different research objective:

- The first section addresses the first specific research objective: Understand how Users' Interactions with Voice Assistants Influence Brand Engagement.
- The second section addresses the second specific research objective: Investigate the Role of Brand Credibility in Mitigating Users' Privacy Concerns with Voice Assistants.
- The final section brings the findings together to address the general research objective: In what ways does the Use of Voice Assistants Shape, and is Shaped by Consumer-Brand Relationships?

For each specific research objective, the corresponding results are discussed in light of the current literature. In line with the structure suggested by Santos and Nogueira (2023), each section was organised to address the following questions:

- 1) What do the findings reveal that serve to expand the existing knowledge on the topic?
- 2) What does this study add to what was previously known and presented in the literature review chapter?
- 3) In what ways does this research offer a more detailed or novel perspective on the topic?
- 4) Do the findings challenge or contradict any aspects of existing literature?
- 5) Do the findings support and reinforce conclusions of previous studies?
- 6) Was the model of analysis validated by the data?

Although these guiding questions are not explicitly stated in the text, they informed the organisation and interpretation of each subsection. By approaching the discussion through these

guiding questions, this chapter seeks not only to interpret the results but also to position this study within the broader academic discussion on VAs and CBR.

### **6.1. First Specific Research Objective: Understand how Users' Interactions with Voice Assistants Influence Brand Engagement**

To understand how interactions with VAs influence brand engagement, it was first necessary to explore the impact of these interactions themselves. The findings revealed a key benefit arising from the interactions between users and VAs, expanding the understanding of these technologies as crucial intermediaries linking consumers and brands.

The key benefit of ongoing interactions between users and VAs is the ability to collect valuable consumer data, and the “doors” this information opens. These data allows brands to gain a deeper understanding of their consumers, and, therefore, personalise their content and products according to consumers' preferences.

Building on this knowledge, brands are not only able to offer personalised products but also predict consumers' needs and habits, assisting them even before requests are made. For instance, VAs can learn routines such as regular nap times and suggest relevant actions, such as setting a timer just before a usual nap begins. Assisting consumers with daily tasks even before they ask makes them feel understood and valued. Naturally, consumers tend to remain loyal to brands that demonstrate this level of attentiveness. Another example is how VAs can detect upcoming appointments and help organise consumers' lives by suggesting, for instance, when to leave the house to avoid being late. This kind of proactive support offers valuable assistance that improves consumers' daily lives, making them feel seen and supported.

Moreover, VAs and their interactions give brands access to very intimate consumer spaces, such as the home environment, providing a competitive advantage through knowledge of behaviours that would otherwise be difficult to observe. For instance, brands can know highly specific details, such as how many times per day a consumer opens their fridge or how often they cook. This level of insight is difficult to achieve by other means; after all, how else could a brand know such precise, personal behaviours if not through a VA? This finding aligns with the current literature as through personalised interactions, VAs become deeply integrated into consumers' private spaces and moments that are usually inaccessible to marketers. This

personal space at home presents brands with a unique opportunity to connect with consumers in a smooth, helpful manner, providing value exactly when it's needed (McLean et al., 2020).

Finally, the ongoing collection and use of these data also plays a crucial role in allowing brands to train and improve the performance of their VA based on the consumers' feedback, which contributes to enhanced user satisfaction.

The benefits identified in user-VA interactions align with the current literature. As previous studies have shown, VAs collect users' voice interactions to understand users' preferences and attributes, enabling brands to deliver more personalised services (Ma & Chen, 2024). Likewise, users' interactions with VAs generate engagement signals that contribute to the improvement of the VA system through model training and adaptation, ultimately enhancing the user experience (Muralidharan et al., 2019). These insights are strongly supported by participants' recognition of their role in the co-development of the VA and the value of data collection through VAs for the brand's personalisation strategies.

Having established the benefits of users' interactions with VAs and positioned the findings of this study in relation to the current literature, the next step involves assessing how, and to what extent, these interactions translate into brand engagement. The results revealed that, although these interactions offer significant benefits, this does not automatically imply a stronger or more consistent engagement with the brand itself.

On one hand, some participants perceive the VA merely as a functional tool, with no influence on their engagement with the brand. For these participants, interactions with the VA serve a purpose, such as completing a task, but they do not feel that these interactions make them feel more connected or engaged with the brand behind the VA. On the other hand, other participants reported that their interactions with their VA, positively impact on their engagement and connection with the brand behind the VA – even motivating further product acquisition. In these cases, the VA helps consumers develop a stronger bond with the brand.

While for some the VA acts merely as a utility, for others it shapes and enhances their relationship with the brand. Therefore, this evidence illustrates the complex and ambivalent impact of user-VA interactions on user-brand engagement, which is shaped by individual differences (e.g., personal perceptions, experiences). Although VAs hold the potential to deepen users' engagement with the brand – through personalised and interactive interactions – this outcome depends on how users perceive and interpret these interactions.

When compared to existing literature, these findings challenge the current dominant assumption that interactions with VAs consistently lead to stronger engagement with the brand behind the VA. While some participants described a closer relationship with the brand due to

their interactions with their VAs, others explicitly stated that they do not feel more engaged with the brand, even when using the VA frequently and enjoying its use. Recent literature emphasises VAs as playing a crucial role in fostering CBE by creating emotional bonds or increasing perceived personalisation (McLean et al., 2020; Zaki et al., 2024). However, such outcomes are not universal or guaranteed. Instead, the influence of users' interactions with VAs on brand engagement depends on individual perceptions. Therefore, this study adds a perspective that the link between VA interaction and brand engagement is subjectively mediated. As an important note – and considering the previous point that even individuals who frequently interact with their VA, do not perceive these interactions as increasing their engagement with the brand – it is relevant to recall that subsection 5.3. *Consumer Engagement with Brands through the Use of Voice Assistants*, began by stating that the subcategory of analysis “Usage Patterns”, specifically frequency of VA interactions, would be examined to understand whether this frequency influences consumers' level of engagement with the brand behind the VA. This focus was not overlooked. As shown in the interpretation of the qualitative data, individuals explicitly stated that they do not feel more engaged with the brand, even when using the VA frequently and enjoying its use.

These findings also invite reflection on the model of analysis of this study, particularly to the part related to this specific research objective: Understand how Users' Interactions with Voice Assistants Influence Brand Engagement. As illustrated in Figure 1, this corresponds to the top line of the model of analysis. The model illustrates that interactions with VAs have a direct influence on brand engagement. However, the findings suggest that this influence is not experienced uniformly by all participants. While some participants did express a stronger engagement with the brand due to their interactions with the VA, others described the VA purely as a functional tool – even when they used it regularly and enjoyed doing so – with no impact on their engagement with the brand. Therefore, in relation to this specific research objective, the model of analysis was only partially validated. It captured relevant dynamics for a subset of participants, but the findings also highlight the importance of individual perceptions in shaping this engagement. This suggests that the influence of VA interactions on brand engagement does not follow a universal pattern.

## **6.2. Second Specific Research Objective: Investigate the Role of Brand Credibility in Mitigating Users' Privacy Concerns with Voice Assistants**

Regarding the second specific research objective of this study, the interpretation of results begins with the theme of privacy concerns.

The findings reveal that, for some individuals, privacy concerns are an important consideration in their interactions with VAs. These concerns range from a broader awareness of living in a world constantly monitored by technology – particularly in the context of VAs – to more specific apprehension about the constant listening involved in using such devices. This is consistent with the current literature, which highlights that VAs must continuously listen to their surroundings (Voorveld & Araujo, 2020; Lucia-Palacios and Pérez-López, 2021; Kang & Shao, 2022; Seymour et al., 2023), a feature that many users perceive as intrusive (Voorveld & Araujo, 2020; Lucia-Palacios and Pérez-López, 2021). For others individuals, although privacy concerns are acknowledged, the advantages offered by VAs often outweigh the perceived risks. This ambivalence mirrors what Jain et al. (2021) describe as two contrasting premises regarding user privacy concerns.

For participants who did not express any privacy concerns, this absence of concerns was often associated with the trust they placed in the brand behind the VA.

In both cases, a consistent insight emerges – regardless of whether participants expressed privacy concerns, brand credibility consistently plays a central role:

- For participants who reported privacy concerns: trust in reputable and credible brands helps alleviate their fears. Although they have privacy concerns, when consumers perceive a brand as credible, these concerns are mitigated as they believe their data will be treated more responsibly.
- For participants who did not report privacy concerns, this often reflects their confidence in the brand behind their VA. In other words, they do not feel particularly worried because they use a VA from a brand they trust and perceive as credible and reputable. Participants explicitly recognised that brand credibility acts as a form of reassurance, offering a sense of being “*in good hands*”. They trust that the brand behind their VA will not betray their trust.

Both these perspectives align with the current literature, supporting studies conducted by Jain et al. (2021) and Maroufkhani et al. (2022), which demonstrate that brand credibility enhances users' confidence and reduces their perception risks associated with VAs.

Another relevant finding is that trust compensates for lack of knowledge. That is, even among participants who admitted having limited knowledge about how their data is processed, many rely on their perception of brand credibility and on their existing trust in the brand as a source of reassurance. This suggests that, in contexts of technological opacity, credibility acts as a cognitive shortcut that allows consumers to proceed with usage despite uncertainty. These insights support the existing literature, which highlights how brands act as signal of the credibility of a product (Dawar & Parker, 1994), while also reducing the risks associated with consumers' lack of knowledge (Sweeney & Swait, 2007). Within this, an important note is that participants often linked brand credibility to trust – as previously established in the literature, brand credibility encompasses trustworthiness (Erdem et al., 2002) – as well as reliability and reputation.

Overall, results show a strong preference for branded-VAs over off-branded or lesser-known ones, which are perceived as riskier: individuals tend to choose VAs from credible and reliable brands as these provide a sense of security. When the brand conveys a credible image, consumers feel there is no reason to distrust the VA in terms of security. This preference supports the literature, which suggests that although several AI-enabled VAs are available on the market, well-known brands such as Amazon, Apple, and Google are consistently preferred, as they help reduce consumer anxiety (Cai et al., 2022).

This specific research objective – Investigate the Role of Brand Credibility in Mitigating Users' Privacy Concerns with Voice Assistants – is represented in the bottom line of the model of analysis, Figure 1. The model of analysis regarding this specific research objective was clearly validated by the data collected. The findings consistently demonstrated that brand credibility serves as a key factor in alleviating apprehensions about privacy risks. Trust, reliability, and reputation associated with well-known brands significantly reduce the perceived risks of data misuse when interacting with VAs. This strong alignment between the theoretical model and empirical evidence confirms that the specific research objective concerning brand credibility was adequately addressed and supported by the study's results.

As a concluding note to this section, it is worth noting that, considering the semi-structured interviews were conducted in Portugal, it is important to contextualize the country's regulatory environment regarding data protection. In Portugal, the GDPR is implemented through Law No. 58/2019 of August 8th, which sets specific national rules for its application (DLA Piper, 2025). The National Data Protection Commission acts as the supervisory authority responsible for monitoring compliance with data protection legislation in Portugal (DLA Piper, 2025). Global companies such as Apple demonstrate compliance with these regulations through

transparency reports that disclose the number of government requests for customer data received in Portugal, evidencing their commitment to user privacy (Apple, 2025). This emphasis on privacy and transparency was also reflected in the qualitative data collected in this study, with participants perceiving Apple as a trustworthy brand in terms of privacy protection: *“Apple’s main hallmark is security and privacy. And I think it gives a different kind of confidence to use Siri knowing this, compared to using a voice assistant from other brands”* (P13, Student, 19).

### **6.3. General Research Objective: In what ways does the Use of Voice Assistants Shape and is Shaped by Consumer-Brand Relationships?**

The overarching objective of this research was to understand in what ways the use of VAs shapes and is shaped by CBR. More specifically, the study aimed to explore the influence between different dimensions of VAs – users’ interactions and privacy concerns – and different dimensions of CBR – brand engagement and brand credibility. This focus reflects the underlying logic of examining the relationship between two broad constructs (A and B) by analysing the interplay between their specific dimensions. Therefore, the two specific research objectives were.

1. Understand how Users’ Interactions with Voice Assistants Influence Brand Engagement
2. Investigate the Role of Brand Credibility in Mitigating Users’ Privacy Concerns with Voice Assistants

Regarding the first specific research objective, findings revealed that user interactions with VAs do not consistently enhance brand engagement – this effect is neither uniform nor guaranteed. While some users experience VAs as personalised intermediaries that deepen their engagement with the brand behind the VA, others perceive VAs as purely functional tools with no impact on their broader relationship with the brand. This variability highlights the importance of individual perceptions in shaping how VAs influence consumer engagement with the brand. Therefore, although VAs act as intermediaries between the consumer and the brand, this does not necessarily mean they enhance brand engagement; their effectiveness depends on how users interpret the interaction experience within the brand context.

Concerning the second specific research objective, the findings revealed that brand credibility plays a role in alleviating privacy concerns with VAs. Participants consistently emphasised that their perception of the brand's credibility – a concept that includes trustworthiness – reputation, and scale offered reassurance against concerns associated with private data collection.

Taken together, these findings highlight the asymmetric but bidirectional influence between VAs and CBR. While the brand's established credibility plays a consistent and generalizable role in mitigating users' privacy concerns with VAs, the impact of user interactions with VAs on brand engagement is more variable and contingent, depending on users' subjective perceptions.

This reciprocal influence suggests that there is a strong “*synergy*” between the VA and the brand behind it as they mutually reinforce each other and contribute to the overall user experience. *“I don't know which is the cause and which is the effect. I don't know if I chose Google Assistant because I was already engaged with Google and I was already using several of its (Google) services, or if it was the other way around. The truth is, they (Google and Google Assistant) feed into each other – they create synergy.” (P11, Professor, 56).*

The general research objective was addressed through a dual lens: user interactions with VAs may, in some cases, enhance brand engagement, while brand credibility consistently mitigates privacy concerns with VAs. The model of analysis, which conceptualised these bidirectional influences, is partially supported and enriched by the empirical findings, offering valuable insights for future research and practical implications for brands leveraging VAs in their marketing strategies. This integrated perspective fills the two gaps identified in the introduction: the limited exploration of the role of VAs in brand engagement (Huh et al., 2023), and the lack of research on whether users' privacy concerns with VAs are mitigated by perceived brand credibility (Jain et al., 2021).

## 7. CONCLUSION

This chapter presents the final reflections of the research, summarising how the study has responded to the defined objectives and highlighting its key theoretical and practical contributions. By revisiting the research questions through the lens of empirical findings, the chapter reinforces the significance of VAs in shaping contemporary CBR and outlines the broader implications of these dynamics for marketing scholarship and practice.

### 7.1. Addressing the Research Problem

The general objective of this study was to understand “In what ways does the Use of Voice Assistants Shape and is Shaped by Consumer-Brand Relationships?”. To address this overarching aim, two specific research objectives were established:

- (1) Understand how Users’ Interactions with Voice Assistants Influence Brand Engagement.
- (2) Investigate the Role of Brand credibility in mitigating Privacy Concerns with Voice Assistants.

The findings, derived from a mixed-methods approach combining quantitative surveys and qualitative semi-structured interviews, provided both broad insights and nuanced perspectives.

Regarding the first specific research objective, the results indicate that users’ interactions with VAs have an ambivalent impact on brand engagement. Some participants perceived the VA merely as a functional tool, with no influence on their engagement with the brand behind the technology. Others, however, reported that the VA has a positive impact on their connection and engagement with the brand, and even motivating further product acquisition. These interactions fostered a deeper connection between consumers and the brands behind the technology, positioning VAs as facilitators of both emotional and functional engagement. These contrasting experiences suggest that VAs can, in certain contexts, act as relational agents and deepen the bond between consumers and brands, serving as facilitators of brand engagement. Therefore, it is possible to draw three key conclusions in relation to the first specific research objective:

- (1) Voice Assistants act as intermediaries between users and brands. Through daily interactions, VAs extend the brand's presence into consumers' private routines and spaces. This personal space at home presents brands with a unique opportunity to connect with consumers in a smooth, helpful manner, providing value exactly when it's needed.
- (2) The impact of Interactions with Voice Assistants on Brand Engagement varies across users. This variation is shaped by individual differences in expectations, needs, and the perceived value of the interaction.
- (3) Brand Engagement can be influenced by the perceived human-like qualities of the Voice Assistant. Participants who anthropomorphized the VA – assigning it personality traits or emotional presence – were more likely to experience stronger connections and engagement with the associated brand.

Concerning the second specific research objective, the results revealed a persistent tension between the perceived benefits of VAs and ongoing privacy concerns. While participants valued the utility of VAs, the majority expressed distrust in their ability to handle sensitive information securely. Nonetheless, brand credibility played a key moderating role: users admitted a great influence of reputable and credible brands such as Google, Apple and Amazon, in reducing their concerns with privacy risks. Therefore, it is possible to draw four key conclusions in relation to the second specific research objective:

- (1) Consumers prefer a Voice Assistant from a well-known brand over a lesser-known one. Users feel more comfortable choosing VAs from brands they recognise and trust.
- (2) Perceived credibility = perceived safety. Brand Credibility acts as a form of reassurance for users. Credible and reputable brands are believed to have better security practices, which provides a sense of security and confidence that users' data will be handled responsibly.
- (3) Trust compensates for lack of knowledge. Users tend to be less worried with data collection because they trust the brand behind the VA, even if they don't fully understand how their data is being used and for what purposes.
- (4) Trust in Voice Assistants is often based more on brand image and scale than on technical understanding. Many users don't have deep technical knowledge, so they base their trust mainly on how established and credible the brand is.

And finally, regarding the general objective, the study suggests an asymmetric but bidirectional influence between VAs and CBR. While a brand's established credibility plays a crucial role in mitigating users' privacy concerns with VAs, interactions between users and VAs do not necessarily translate into brand engagement – it is more variable and contingent, depending on users' subjective perceptions.

## **7.2. Theoretical and Practical Contributions**

This study makes relevant contributions both to the theoretical understanding of CBR in digital contexts and to the practical field of brand management in the era of voice technologies.

From a theoretical standpoint, the research advances the understanding of VAs, not merely as technological tools, but as new intermediaries between consumers and brands. While much of the existing literature tends to focus on VAs from a technological or anthropomorphic (human-like) perspective, this study positions them as mediators that not only facilitate convenient, hands-free interactions for users, but also offer brands a unique opportunity of data collection. This expands the theoretical boundaries of CBR by introducing VAs as active participants in relationship-building processes.

Moreover, these findings bridge two gaps in the literature: the lack of research on the role of VAs in enhancing brand engagement (Huh et al., 2023); limited understanding of brand credibility in mitigating privacy concerns with VAs (Jain et al., 2021).

Addressing the first gap, the study presents an ambivalent impact of interactions with VAs on brand engagement. Rather than assuming a uniform effect, this study reveals that interactions do not necessarily lead to a stronger brand engagement. Instead, users' responses are shaped by subjective factors such as personal expectations, interaction style, and the perceived human-like qualities of the VA. This introduces greater nuance to the way scholars understand the role of digital interfaces in shaping consumer attitudes, and its influence on the relationships with brands.

In line with the second gap, another key theoretical contribution lies in the role of brand credibility as a moderator of privacy concerns. This study demonstrates that trust in well-known, credible brands can mitigate anxieties related to data handling. This finding enriches existing research on human-computer interaction by suggesting that users often rely more on brand-related heuristics – such as perceived credibility and reputation – when assessing the

safety of a VA, even without technical knowledge. This insight positions brand credibility as a kind of psychological buffer in data-sensitive environments, opening new directions for theoretical exploration.

Lastly, the research reinforces the idea of a bidirectional, though asymmetric, relationship between VAs and CBR – while the VA can shape how users perceive and engage with a brand, it is equally evident that existing brand perceptions influence how the VA is received, trusted, and used. This dynamic interplay illustrates that neither the technology nor the brand alone can fully account for the user experience – a VA cannot deliver meaningful interactions by itself, it needs a credible brand behind to represent, train, and “teach” it regarding how to interact with consumers: *“Google teaches it (Google Assistant) to know me better.”* (**P10, Unemployed, 28**); likewise, brands that do not invest in or integrate VAs into their strategies are missing extremely valuable opportunities to collect consumer data and with that knowledge, enhance consumers’ daily experiences.

From a practical perspective, the findings offer actionable insights for brand managers and marketers navigating the integration of voice technologies into their consumer experience strategies. The study demonstrates that VAs are not just a common technology, they represent a valuable communication channel through which brands can embed themselves into consumers’ daily routines and intimate spaces in a seamless and often almost imperceptible manner.

In a world saturated with brands, where consumer attention is fragmented and trust is increasingly harder to earn, VAs offer a unique and less invasive form of interaction. At the same time, brands are witnessing a growing resistance to data collection practices, perceived by many users as intrusive and opaque. As one participant stated *“data are the new fuel”* (**P11, Professor, 56**) – yet this fuel only flows where there is trust. It is precisely in this context that VAs gain relevance: as intermediaries capable of rehumanising the connection between consumers and brands through voice, creating experiences that feel helpful rather than extractive. Understanding this phenomenon is not only timely, it is essential for anticipating the future of Consumer-Brand Relationships. Interactions with VAs allow brands to communicate in a natural and convenient way, their hands-free, voice-activated nature makes them a particularly attractive tool in a world where convenience, speed, and personalisation are highly valued.

There is no turning back from the advancement of technology. As Charles Darwin (1900) insightfully noted, *“It is neither the most intelligent nor the strongest species that survives, but rather the one that is best able to adapt and respond to changes in its environment”*. The same

holds true for brands. Those that will thrive are the ones that are best able to adapt to changing technological environments and consumer expectations.

Brands that focus on making life easier for their users through practical and accessible tools like VAs will stand out in the competitive market: “*The first alarm I set with Google Assistant, the very first reminder, felt magical because it was like something from another world*” (**P22, Professor, 32**). By offering convenience, simplifying tasks, offering immediate assistance, and integrate smoothly into consumers’ lives, VAs help brands build stronger connections with consumers, fostering long-term relationships.

Equally important is the recognition that brand credibility plays as a critical role in facilitating technology adoption. For companies developing VA-based services, investing in the cultivation and communication of trust is essential. Users are more likely to accept and consistently use VAs when these are associated with brands they perceive as credible.

Furthermore, the research underscores the value of personalisation and anthropomorphism in voice design. Users who attribute human-like qualities to VAs tend to form stronger connections with both the assistant and the brand behind it. This suggests that brands should pay close attention to the tone, personality, and interaction style of their VAs, as these features can significantly influence consumer perceptions and emotional engagement.

Finally, the study highlights the need to consider individual differences in VA use. Not all consumers engage with voice technology in the same way, and brands should avoid uniform strategies. Instead, they should strive for flexible and adaptive approaches that reflect the varying expectations, comfort levels, and motivations of their target audiences.

## 8. LIMITATIONS AND FUTURE RESEARCH

This study, while offering valuable insights, also presents limitations. The research was conducted within a particular sociocultural context – Portugal – which may significantly influence participants’ attitudes toward technology, data privacy, and brand relationships. Cultural norms, levels of digital literacy, and societal trust in brands can shape how VAs are perceived and used. As consumer expectations and responses to VAs could differ considerably in other environments, future studies should aim to replicate this research in diverse cultural settings to explore how cultural factors shape user interactions with VAs and influence broader patterns of CBR.

Additionally, participants showed greater familiarity with well-established credible brands such as Apple, Google, and Amazon: brands that already benefit from strong reputations and widespread usage. This may have positively influenced perceptions of credibility, limiting a more neutral evaluation of lesser-known brands. Future research could intentionally include a broader range of brands, including those with lower market visibility, to assess how brand credibility and recognition influences user outcomes with those lesser-known brands.

While this study focused primarily on privacy concerns – one of the most widely discussed issues in the context of VAs – other relevant concerns also emerged during the semi-structured interviews. As the data was reviewed and interpreted, additional insights were identified for their relevance and alignment with existing literature, and are presented here as suggestions for future research:

- Jain et al. (2023), noted that many users report that VAs often fail to recognise accents or understand commands correctly, often resulting in irrelevant or repeated responses. This concern also surfaced in the present study, as two participants mentioned that their VA occasionally had trouble understanding their pronunciation. Such limitations may hinder the overall user experience, especially for individuals with diverse linguistic backgrounds.
- Other participants mentioned that when the VA failed to provide a helpful response, they don’t get surprised because they were “*already expecting*”. This reflects findings by Brewer (2023), who highlights that users tend to have low expectations of voice recognition and AI when it comes to responding to complicated questions. These limited expectations may reduce frustration but could also lower user engagement and trust in the system’s capabilities.

Another promising avenue for future research lies in exploring how VAs can better serve individuals with disabilities, such as those who are unable to use their arms, are visually impaired, or have other physical limitations. VAs hold significant potential to facilitate seamless communication between these users and brands, enabling interactions through simple voice commands or even a single word. Investigating how these technologies can be optimised to enhance accessibility, and inclusivity, would not only broaden the user base but also advance social equity in digital consumer experiences. In a world where technology shapes how individuals connect and participate, ensuring that no one is left behind is not just an option – it is an imperative. Building on this perspective, future studies could also examine how VAs may evolve to meet not only functional needs but also emotional and relational ones – particularly among older adults.

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## APPENDICES

### Appendix A

**Table A1**

*Alignment of Specific Research Objectives with Gaps in the Literature*

<b>General Research Objective</b>	<b>Key Concepts</b>	<b>Dimension of Analysis</b>	<b>Specific Research Objective</b>	<b>Pertinence</b>	<b>Gaps in the Literature</b>
In what ways does the Use of Voice Assistants Shape and is Shaped by Consumer-Brand Relationships?	Voice Assistants  Consumer-Brand Relationships	Interaction  Brand Engagement	Understand how Users' Interactions with Voice Assistants Influence Brand Engagement.	VAs foster brand-related interactions that have the potential to become a new way for consumers to engage with brands (McLean et al., 2020).	Only a small number of studies have investigated the role of VAs in brand engagement (Huh et al., 2023).
In what ways does the Use of Voice Assistants Shape and is Shaped by Consumer-Brand Relationships?	Voice Assistants  Consumer-Brand Relationships	Privacy Concerns  Brand Credibility	Investigate the Role of Brand Credibility in Mitigating Users' Privacy Concerns with Voice Assistants.	The topic of brand credibility in VAs is a crucial area of focus, because even when a device meets the user's social and psychological needs, this user may still require reassurance about the credible value of the technology product (Hasan et al., 2020).	There remains a notable gap in the literature concerning whether users' privacy concerns with VAs, are mitigated by the perceived credibility of the brand (Jain et al., 2021).

Source: Self-elaboration

## Appendix B

**Table B1**

*Correspondence of Literature Review Sections with Specific Research Objectives*

Sections and Subsections of the Literature Review	Corresponding Specific Research Objectives
2.1 Voice Assistants	
2.1.1 Users’ Interactions with Voice Assistants	(1) Understand how Users’ Interactions with Voice Assistants Influence Brand Engagement.
2.1.2 Users’ Privacy Concerns with Voice Assistants	(2) Investigate the Role of Brand Credibility in Mitigating Users’ Privacy Concerns with Voice Assistants
2.2. The Relationship between Consumers and Brands	
2.2.1. The terms “Consumer” versus “Customer” in Brand Relationships	
2.2.2. Conceptualising CBR: Consumer-Brand Relationships	
2.2.3 Engagement and Credibility in Consumer-Brand Relationships	(1) Understand how Users’ Interactions with Voice Assistants Influence Brand Engagement. (2) Investigate the Role of Brand Credibility in Mitigating Users’ Privacy Concerns with Voice Assistants
2.3. The Bidirectional Influence of Voice Assistants and Consumer-Brand Relationships	
2.3.1. The Role of Voice Assistants in fostering Consumer-Brand Engagement	(1) Understand how Users’ Interactions with Voice Assistants Influence Brand Engagement.
2.3.2. The Influence of Brand Credibility on the Use of Voice Assistants	(2) Investigate the Role of Brand Credibility in Mitigating Users’ Privacy Concerns with Voice Assistants

Source: Self-elaboration

## Appendix C

**Table C1**

*Research strategies for selecting scientific articles for the Literature Review*

Search Strategy	Process
Database	B-ON, ResearchGate, ScienceDirect, Sage Journals, Scopus, SDU library website.
Boolean Operators	AND; OR
Term Combinations	Especially useful for research involving the intersection of topics, as is the case in this dissertation. Combining terms such as: <ul style="list-style-type: none"> <li>• “Interactions with Voice Assistants AND Brand Engagement”</li> <li>• “Voice Assistants OR Smart Speakers”</li> </ul>
Singular and Plural Forms	Searching for “Voice Assistant” as well as “Voice Assistants”
Exact Term	Searching for “Consumer-Brand Relationships” to find articles using this precise term.
Different Languages	Searching for “Assistente de Voz” (portuguese) as well as “Voice Assistant” (english).
Publication Timeframe	Chapters: <ol style="list-style-type: none"> <li>1. Voice Assistants: recent studies prioritised to capture the growing trend of the topic.</li> <li>2. The Relationship between Consumers and Brands: well-established concept requiring the inclusion of older studies.</li> <li>3. The Bidirectional Influence of Voice Assistants and Consumer-Brand Relationships: primarily recent studies.</li> </ol>
Some of the Keywords used	Voice Assistants; Interactions; Privacy Concerns; Consumer-Brand Relationships; Brand Engagement; Brand Credibility.

Source: Self-elaboration

## Appendix D

**Table D1**

*Concept Operationalisation Based on Previous Literature*

Concept	Concept Operationalisation	Key Reference
Voice Assistants	Studied why people accept VAs in services, looking at three types of factors: functional (e.g., how useful and easy is to use the VA); social (e.g., if it feels like talking to a real person); relational (e.g., trust and feeling a connection). Online survey: 238 VAs' users.	(Fernandes & Oliveira, 2020)
Interactions with Voice Assistants	Investigate how humans interact with VAs and how these interactions create emotional connections. Focused on the user's overall feelings and reactions during interactions with the VA. These interactions were seen as human-like and could create feelings like passion, intimacy, and commitment, similar to how humans feel in close relationships. Online survey: 717 VAs' users.	(Hernandez-Ortega & Ferreira, 2021)
Privacy Concerns with Voice Assistants	Studied how humans' concerns about privacy (such as being recorded or tracked) make them resist using VAs. Focused on how privacy concerns create a feeling of "creepiness," which leads people to avoid or reject the technology. 5 experiments using surveys and scenarios with over 700 participants	(Mou & Meng, 2023)
Consumer-Brand Relationships	Treated the relationship between consumers and brands like real interpersonal relationships. The author identified different types of relationships people can have with brands (e.g., friendship, marriage, casual dating) and studied how people develop emotional bonds, loyalty, and meaning through repeated interactions. Qualitative case studies and in-depth interviews with consumers.	(Fournier, 1998)
Brand Engagement	Studied CBE as a combination of how much people think about a brand (cognitive), feel positively about it (emotional), and how much time and energy they spend on it (behavioural). Online survey with 195 U.S. participants.	(Harrigan et al., 2017)
Brand Credibility	Studied brand credibility as the extent to which consumers believe that a brand can deliver on its promises. It includes trustworthiness and expertise. Demonstrated that credible brands help consumers feel more confident, reduce uncertainty, and make decisions easier. Surveys across 6 product categories.	(Erdem & Swait, 2004)

Source: Self-elaboration

## Appendix E

**Table E1**

*Sample Sizes in Relevant Studies*

Study	Context	Methodology	Number of interviews
Can Alexa serve customers better? AI-driven voice assistant service interactions Suresh Malodia; Alberto Ferraris; Mototaka Sakashita; Amandeep Dhir; Beata Gavurova 2022	Customers' willingness to interact with VAs.	Qualitative approach	In depth interviews of 3 senior representatives managing VAs and 20 individuals who not only owned but also frequently used their VAs.
Alexa, do voice assistants influence consumer brand engagement? – Examining the role of AI powered voice assistants in influencing consumer brand engagement Graeme McLean; Kofi Osei-Frimpong; Jennifer Barhorst 2020	The role of VAs in influencing consumer brand engagement	Mixed-method approach (Qualitative and quantitative)	21 interviews
Alexa, she's not human but...Unveiling the drivers of consumers' trust in voice-based artificial intelligence Valentina Pitardi; Hannah R. Marriott 2021	Factors influencing consumer trust in VAs	Mixed-method approach (Qualitative and quantitative)	12 interviews

Source: Self-elaboration

## Appendix F

### Audio and Video Consent Release Form

Without expectation of compensation or other remuneration, now or in the future, I hereby give my consent to Francisca Santos Oliveira, master's student in Global Marketing at IPAM, Porto, Portugal, to record my voice, image and statements for research purposes as part of a thesis study.

This consent includes:

- (a) Permission to record my voice and video image during the interview, which will be conducted via Zoom;
  
- (b) Permission to use my statements from the interview (or excerpts of such statements) in a master's thesis, academic presentations (such as conferences), academic publications (such as scientific publications), and future research projects that are thematically related, or partially related, to this study.
  
- (c) Permission to store and analyse the recordings for research purposes only.

I understand that:

- The recordings will be used for academic purposes;
- Only the spoken content will be analysed. My image will not appear in any published material;
- My participation is voluntary.

Participant Information:

Name: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_



## Appendix G

The following description presents a personal idea that highlights the relevance of voice assistants in marketing strategies.

“Data are the new fuel” – and this is the main benefit of using a voice assistant for brands, the enormous amount of data these brands can collect from the consumers.

The idea consists of two parts:

- (1) selling consumers’ preferences to brands
- (2) communicating brands to consumers

Each individual talks to a voice assistant to control the television. Each person gives a name to the voice assistant, and when they want to communicate with it, they simply need to call it by the name. It is proved that each vocal pattern is unique in the world so, the voice assistant, recognises each one of them. That is, if the owner of the voice assistant is Francisca, then, it will only respond when Francisca calls. And based on this, the voice assistant collects information depending on each user’s voice.

(1) Selling consumers’ preferences to brands: to safeguard data privacy, the voice assistant would sell the consumer, not the person to the brand. This means that it will not sell the personal identity of Francisca, it will sell Francisca as a consumer and her preferences. For instance: Francisca enjoys watching scuba diving programs on National Geographic, so the voice assistant collects Francisca’s preferences and creates her profile. Then, after collecting consumers’ profiles with preferences associated, it will sell them to brands. Subsequently, these brands can make appropriate advertisements based on consumers preferences.

(2) Communicating brands to consumers: Based on the profile created for Francisca, the voice assistant will communicate offers from brands that align with her preferences. For instance, Francisca’s profile indicates that 90% of the programs that she (her profile) watches are related to the sea. So, the voice assistant will prioritise communicating promotions from sea-related brands, such as Decathlon. In this scenario, the voice assistant not only informs Francisca about Decathlon’s sale but also sells her sea-related preference data to Decathlon: it is a win-win.

For brands, understanding the existence of such profiles becomes valuable. Instead of bombarding consumers with hundreds of television advertisements, which brands are unsure if

they will even pay attention to, this idea allows to filter the information according to the genuine interests and preferences of the consumer. With this approach, consumers are assured that the content presented aligns with their actual preferences, creating a more personalised and engaging experience.

Brands do not control what consumers do, brands influence what they think, and this is the ideal method for brands to influence what consumers think. Some may perceive this idea as intrusive due to potential privacy concerns associated with it. However, a similar case can be observed with BMW. Initially, when BMW introduced a voice assistant incorporated into its cars, there were widespread worries about the car overhearing conversations. Yet, over time, societal acceptance has grown, with many individuals now recognising the value of BMW's voice assistants, incorporating them into their usage habits. And the fact that users trust BMW, influences their willingness to use the voice assistants associated with the brand. This pattern is common: initially, people may fear new technologies, but as they become familiar with them; acceptance, and usage increase. As demonstrated previously, if these technologies are affiliated with brands that users trust, the adoption of these technologies is likely to occur more rapidly.