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Developing Affective Brand Commitment through Voice Assistants

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Master in Marketing

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ISCTE-IUL

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BUSINESS
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Department of Marketing, Strategy and Operations

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Acknowledgements

The development of this dissertation followed the firstly predicted deadline of one year. This was a project which presented me with concepts and opportunities to learn about something I am passionate about: marketing and technology. It tested me in many ways, especially in my ability to manage my time, since at the same time I developed the dissertation, I was working full time and playing tennis during the week, while doing competitions on the weekend. As complex as this project was, it involved the help and support of many, and for that I am grateful.

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Resumo

O desenvolvimento de equipamentos de inteligência artificial (IA), como os assistentes de voz, tem estado em crescente evolução, provocando uma curiosidade crescente acerca do tema. O objetivo desta tese é de identificar potenciais mediadores entre a experiência que o cliente tem com uma marca e a sua vontade de utilizar um assistente de voz, assim como indicar quais serão as consequências da utilização de um equipamento de IA e como é que a mesma pode impactar a relação entre o cliente e a marca. Recorrendo a um Google Assistant, foi gravada e partilhada uma experiência com o mesmo, através de um website na plataforma Wix, onde vários cenários foram simulados para que pudessem ser atingidas conclusões relevantes.

Ao conduzir esta experiência, foi possível concluir que independentemente da experiência que o cliente teve, ou não, com a marca, a utilização do assistente de voz é altamente influenciada pelo grau de familiaridade que o consumidor tem com a mesma. Também foi possível concluir que a utilização de assistentes de voz pode levar a sentimentos de compaixão e amor pela marca, o que pode consequentemente levar a um compromisso afetivo para com a marca. Numa altura em que gestores de qualquer indústria trabalham para encontrar formas de melhorar e manter a relação com os seus clientes, o presente estudo mostra como a tecnologia é uma parte crucial de qualquer ação de marketing, mesmo no que toca à utilização de um equipamento de IA para fortalecer a relação entre a marca e os clientes.

Palavras-Chave: Tecnologia, Inteligência Artificial, Assistentes de Voz, Relação entre marca e cliente, Compromisso

Jell Sistema de Classificação**:** Marketing (M31); Mudança Tecnológica: Escolhas e Consequências (O33)

Abstract

The development of artificial intelligence (AI) devices, such as voice assistants, has been growing, and with that comes a growing curiosity about this matter. The objective of this research was to identify possible mediators between the experience a customer has with the brand and the willingness to use a voice assistant, as well as being able to verify what could be the possible outcomes of using the AI device and how it could impact the relationship between the customer and the brand. With the usage of a Google Assistant, an experiment was recorded and shared online, through a website on a platform called Wix, where different scenarios were simulated to allow the reach of relevant conclusions.

By conducting this experiment, it was concluded that independently from the experience the customer had, or did not had, with the brand, the usage of voice assistants is highly influenced by the level of familiarity with the brand. It was also concluded that the usage of voice assistants can lead to feelings of compassion and love towards the brand, which can consequently lead to an affective commitment with the brand. In a time were managers in any industry are working for ways to improve and maintain their relationships with the customers, the present research shows how technology is a crucial part of any marketing action, even when using an AI device to strengthen customer brand relationships.

Keywords: Technology, Artificial Intelligence, Voice Assistants, Customer-Brand Relationship, Commitment

Jell Classification System: Marketing (M31); Technological Change: Choices and Consequences (O33)

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CHAPTER 1
Introduction

The rapid development of technology created a huge dependence on the modern human life, which increased the search of ways to engage with the consumer justified by "*today's market scenario, in which competition is intense and the world has become a unified market*" (Kumar & Pansari, 2016: 498). One way to keep track and manage customer brand relationships is by adapting the way the brand works to new trends and emerging technologies since the new generations are commonly characterized as entrepreneurial and tech-savvy and have "*an important role in determining the standards of online marketing*" (Aryanto & Chang, 2019, p.925).

The evolution of consumer behaviour in this digital age we are in means that businesses must adapt their marketing strategies to the new trends, per example the revolution of the search options, where text searches are being substituted by voice and visual searches, which are based on *Artificial Intelligence*, a concept that was theoretically supported by Shankar (2018, p.6) as "*programs, algorithms, systems or machines that demonstrate intelligence*". To many researchers, the human brain works exactly like a machine and so studying it is crucial to understand what it needs in order to be stimulated.

Related to the voice analysis referred above are a group of wireless devices that can be activated through a voice command and interact in the form a virtual personal assistant: *voice assistants*. They have been defined by the Cambridge Dictionary as a "*device that is connected to the internet and can understand spoken questions and instructions*". Through natural language processing (NLP) and machine learning, these devices can interpret and understand the language of the user, in order to process a response: all within real time (Hoy, 2018).

The adoption of this new technology by the brands, will create a relationship with customers by showing that brands are willing to creating a more personal experience, which will allow customers to connect deeply with the brand, consequently improving their satisfaction. Also, according to Dawar (2018), *consumers' commitment and loyalty will shift from a trusted brand to a trusted AI Assistant*, which justifies how relevant the adoption of this technology is in order to maintain a long-term relationship between customers and brands. However, the relationship the customer creates with the brand will be deeply influenced by the willingness of the customer to accept new technologies, measured by the *Technology Acceptance Model (TAM)*, developed by Davis (1989).

Once the customer is willing to accept a new technology used by a certain brand he is familiar with, a positive experience will come out of it, transforming the experience into various benefits for the consumer – a scenario explored by the Uses and Gratification Theory, by Katz, Blumler and Gurevitch (1974). Also, when it comes to using a voice assistant, many factors can come in between the experience the consumer has had with the brand and the willingness to use it, such as the level of brand familiarity, a concept brought up by Mikhailitchenko, Javalgi, Mikhailitchenko, and Laroche (2009), which will also be object of study in this dissertation.

Through the creation of benefits coming from a brand, customers will start connecting to it and having deeper feelings towards the brand, such as a feeling of love which has emerged as an important consumer-brand relationship construct. The brand love (Batra, Ahuvia, & Bagozzi, 2012) relationship has been define as so deep and enduring, that the loved brand is considered irreplaceable (Albert & Merunka, 2013). Also, according to Sternberg (1986), brand love is composed by three dimensions: passion, intimacy, and commitment, being this last one a focus point of this dissertation. Commitment can be defined as a desire of the customer to maintain a valued relationship with a brand due to a previous satisfactory interaction with that brand (Hsiao, Shen, & Chao, 2015). Brand commitment comes with various dimensions (Hsiao et al., 2015), being them calculative commitment, normative commitment and affective commitment.

Affective commitment is defined as an emotional attachment of the customer to the brand, and it reflects a strong emotional commitment and identification with its mission and values (Fu, Elliott, Mano, & Galloway, 2017). This kind of feeling towards a brand, can turn commitment into an antecedent of loyalty (Mathew, Thomas, & Injodey, 2012) and purchase intentions (Shuv-Ami, 2012), making it a crucial topic of study when talking about the possibility of customers losing connection and trust with brands due to the emergence of voice assistants (Dawar, 2018). Brand Loyalty reflects the evaluation a customer makes about a brand and, in the case where there is an affective commitment between he/she and the brand, there is a high emotional dimension that influences this evaluation. It is also strongly associated to re-purchase or to continuing preferring a product and/or service over time, apart from external factors. Thus, the *research question* is formulated as: what are the factors that can create affective brand commitment, through the usage of voice assistants, that will turn this technology into an asset, instead of a stepback?

1.1. Relevance of the topic

eMarketer (2019) researchers have been studying the voice assistant trend and it's expected a total of 38 million people in the US will shop via a voice assistant in 2021. That same source affirms that the activities that have been done more often by voice assistant users are ordering media, browsing products, ask for product recommendations and re-ordering products that have bought before. Also, according to Statista (2019), retail e-commerce sales worldwide amounted to 3,53 trillion US dollars and e-retail revenues are projected to grow to 6.54 trillion US dollars in 2022. As a result of this, e-commerce businesses should expect a 265% growth rate. This shows a future of steady upward trend with no signs of decline and, having in mind that voice assistant usage is indeed included in the ecommerce world, this is clearly a dynamic area of research. Being aware of the digital evolution and the new trends in marketing that come with it, isn't enough by itself. It's crucial for brands to follow these new trends and to continuously search for changes not only in market trends but also in the consumer behaviour and expectations, as they've also been changing throughout the years.

Consumers nowadays are digital natives and have high expectations for brands. The new generations are deeply connected to technology and are considered the ones who spend most time online engaging with social media and living online (Akakandelwa & Walubita, 2018). No generation has demonstrated a level of proficiency or comfort with technology at such an early age as the new generations (Palley, 2012), and that's why it becomes so important to study the development of the digital world: their expectations rely on what emerges day by day.

Having this said, this topic of research is of very high relevance as the AI and Brand Commitment topics have already been studied by many authors; however, there are no articles nor references to the relationship that can exist between both, nor about the influence of brand familiarity as a moderator between brand experience and the usage of voice assistants, making this one of the main objectives of the thesis, along with understanding the customer's perception on voice assistants and their functional possibilities, and investigating what could be the factors that led to the attainment of affective brand commitment by using the voice assistants.

1.2. Research Outline

This dissertation is divided into six main chapters, being the first one an identification and brief explanation of the topics in study, as well as justifying the research purpose and indicating the thesis structure.

The second chapter consists in the literature review, where concepts like artificial intelligence, voice assistants, marketing related determinants and outcomes are explored, as well as some research models already defined by literature. Throughout the explanation of the various topics, the research hypothesis is also developed and presented, in order to prepare chapter three, where the conceptual model is proposed and defined.

Chapter four follows and it presents the full research methodology, especially when it comes to the research approach, data collection and questionnaire development. It also includes information on the methods used for data measurement and scales, as well as some demographic information about the respondents.

When it comes to chapter five, it covers the results of the study, as well as their assessment, and validity of the research hypotheses. Next, on chapter 6, there is a discussion of the results and a verification of their support/non-support by existing literature. Last but not least, on chapter seven topics like conclusions, limitations and recommendations for future research will be looked into, as well as practical and theoretical implications.

CHAPTER 2

Literature Review

In order to have a better understanding of the literature review, a pyramid structure was followed. Having this said, it starts by developing the most general term, which is the *new retail*, where three theories stand out as the most used so far to study the topic: Technology Acceptance Model (TAM), Uses & Gratification Theory and Attachment-Aversion (AA) Model of Customer-Brand Relationships. Then it starts funnelling to the most critical topics in study: *artificial intelligence in retail*, where the new trends in retail using Artificial Intelligence are studied, as well as the development of smart devices, especially voice assistants. In this paper, *marketing related determinants*, such as brand experience and brand familiarity, and *marketing related outcomes*, will also be looked into, where affective brand commitment, one of the focus points of this thesis, is studied, as well as brand love and brand loyalty.

2.1. The new retail

The concept of the new retail is essentially the innovation of a process which emerged from the "*ability of the Internet to provide electronic links between dispersed sources of information, the enhanced collection and use of real-time data, the replacement of inventory with information, and the changing of traditional tasks and roles in the distribution channel*." (Burt & Sparks, 2003, p.276).

Online retail has been revolutionizing the world economy, since it allowed physical stores to enlarge their points of sale and their communication, which led to the attainment of new customers with a low investment. Through online retail, companies can provide to the consumers an extremely personalized online shopping experience, where there's a constant linkage to valuable resources, services and opportunities.

However, this online trend is become a threat to traditional retail – retailers now need to adapt new engaging trends, in order to remain trendy and provide experiences that the e-commerce cannot provide. In sum, traditional retailers must now come up with reasons for people not to shop online, they must evolve from being a distribution channel to being a platform for discovery, engagement, experience and interaction (World Economic Forum Accenture, 2017).

Recent research shows that the provision of customer service in online retail leads to customers having a greater sense of control, which enhances their self-efficacy to induce

stronger purchasing decisions (Li, Xu, & Xu, 2018). One of the behaviours that characterizes not only many customers, but also this new commerce, is the need for touch (Peck, 2010). Even though we are shifting into a digital world, many people still can't consider buying certain products without touching them first, as they believe doing so is going to give them more confidence, reduce uncertainty and assure them that they're having a more efficient decision-making process (Peck & Childers, 2003). The information provided by the sense of touch is also referred to as haptic information. According to Lederman and Klatzky (1987, p.4), activating the haptic system has been reported to be "*particularly adept at encoding the material object with properties corresponding to texture, hardness, temperature and weight*.". Having this said, it becomes extremely important for companies to find ways to overcome customers' desire to touch products. This can either be done through posting compelling photos which show how the product is used, or through customer reviews with videos and photos, since it will keep "insecure" customers from going to a physical store to view and touch the real product (Hazelton, 2019).

Another important characteristic of the new retail is the reduced search costs (Deloitte, 2017) for either buyers, that have their job facilitated by internet platforms that help them identifying seller offerings, and sellers, since internet allows not only the communication of product information cost effectively to potential buyers, but also new ways to reach buyers through targeted advertising.

Technology has a huge impact on business research, and most importantly on marketing, as it "*changes the way marketing managers do their job since it provides new ways of doing research*" (Rust & Espinoza, 2006, p.1072). With the facilitated emersion of new products and services in the online market, due to the lower investment that it requires, the future of retail is characterized by a high competition when it comes to price, which can be battled through the usage of technology by retailers to increase product differentiation (Bakos, 2001, p.71). However, with the incredible amount of different products/services available online, customers have started to struggle when it comes to deciding on what brand they prefer and are more attached to. All this diversification of products and services is also making it harder for companies to differentiate in the way they create a relationship with their customers (Markides, 1997).

2.1.1. Artificial Intelligence in Retailing

A business where the technology used is constantly reviewed in a way to adopt emerging technologies that define the business strategy and operational efficiency in the supply chain, is called a *smart business* (Bruce, 2018). When the combination of different technologies with the company's core resources is done in a balanced and efficient way, the company will be able to retrieve data that can be used to engage in effective communication and to create a favourable brand image (Cruz & Lee, 2014), which can lead to a feeling of affection and personalized experience to the customers. In this kind of businesses, technology is intended to drive productivity and enhance the business's competitive advantages.

New and emerging technologies are inserted within the scope of Internet of Things, commonly known as IoT, a hot buzz word around the internet industry. This concept comprehends all devices and objects that are capable of being permanently connected to the internet, identify themselves within the network and able to communicate with each other (Centro Nacional de Cibersegurança, 2018). Internet Society defines IoT as the "the extent of network connectivity and computing power for objects, devices, sensors and other artefacts that are not normally considered computers".

This is still an intense, but new, area of research and many retailing companies are still uncertain on what to do to create a successful business allied with the IoT trends. However, one thing is certain: one of the most used and fastest growing technologies in smart businesses in 2020 is Artificial Intelligence – AI (Thomas, 2020).

> "*From a human evolution perspective, AI can help each of us augment our capabilities and skills, better understand our full potential, discover ourselves and each other better. All for a better society.*"
>
> Amir Banifatemi, 2017, p.8

Artificial Intelligence is a disruptive technology that has the power to impact every digital market: from cybersecurity to healthcare (Thomas, 2020). It refers to "*programs, algorithms, systems or machines that demonstrate intelligence*" (Shankar, 2018, p.6), and is able to perform tasks normally requiring human intelligence, such as translation between languages, speech recognition, decision-making and visual perceptions (English Oxford Living Dictionary). Also, according to Gartner analysts, by 2020, customers will manage 85% of their relationship with the enterprise without interacting with a human, meaning this is a technology worth studying and that brands must take it into account.

In a world where companies are all trying to get consumers' virtual attention, AI experiences give them the potential to engage with audiences in new exciting ways that they are curious to explore (VWO, 2020). More realistically, at the same time, brands are also finding it difficult to stand out and reach their targeted audience: with the need to evolve and stay relevant, marketers are recognizing emerging technologies, such as AI, as a way to break through the clutter and better reach their audiences (Dwivedi et al., 2020).

AI is going to enable better predictions for what customers want, which may cause the shift from shopping-then-shipping business models to shipping-then shopping business models (Davenport et al., 2020), meaning it will allow retailers to accurately pinpoint customers' needs and desires and, per example, ship items to them without them having to order, with customers having the choice to return what they do not need or want (Agrawal, Gans, & Goldfarb, 2018).

To create a long-lasting relationship through fulfilling customers' needs, it's crucial for companies to understand what's the newest and best formula that will allow their customers to easily adapt to the market changes, especially with the introduction of a new technology. Research has presented some models that study not only the will to accept new technologies, such as the *Technology Acceptance Model (TAM)* by Davis (1989) but also a model/theory that tells us if there were any circumstances prior to an experience that have contributed to turn the experience into a benefit – *Uses and Gratification Theory*, by Katz, Blumler and Gurevitch (1974). Another model that will be looked into in this paper, is the *Attachment-Aversion (AA) Model of Customer-Brand Relationship***,** by Park, Eisingerich and Park (2013), that states that in order for brands to develop a strong attachment and commitment with the customers, they should appeal to the customers' aesthetic needs (enticing/annoying to the self), functional needs (enabling/disabling for the self) and spiritual needs (enriching/impoverishing to the self).

2.1.2. Technology Acceptance Model

Many technology acceptance theories have been used to explain acceptance of AI-based intelligent products, being one of them the Technology Acceptance Model (TAM). This was proposed and developed by Davis (1989), to predict "*use and acceptance of information systems and technology by individual users*" (Surendran, 2012, p.175). According to the author, there are two primary factors influencing the usage and acceptance behaviour in different information systems constructs:

- *Perceived Usefulness*: The degree to which the user believes a specific application system can improve its performance - users tend to use or reject a technology with the goal of improving their performance at work or life.

- *Perceived Ease of Use*: The degree to which the user expects the target system to be free of effort (Davis, 1989), meaning that even though a user finds a certain application system to be useful, its usage could be impaired if it's not easy to use, leading to the perception that the effort does not pay off the usage.

These two factors are influenced by certain external variables that are grouped by Davis (1989) as social, cultural and political factors, such as the impact of using a certain technology in politics and political crisis. According to the TAM, the actual usage of a specific information system is determined, essentially, by the user's attitude toward using it, along with the user's perceived usefulness and ease of use, which is going to determine and highly influence the user's behavioural intention to use it. The relationship between attitude toward using and intention to use suggests that users tend to perform certain actions that have a positive feeling attached to it.

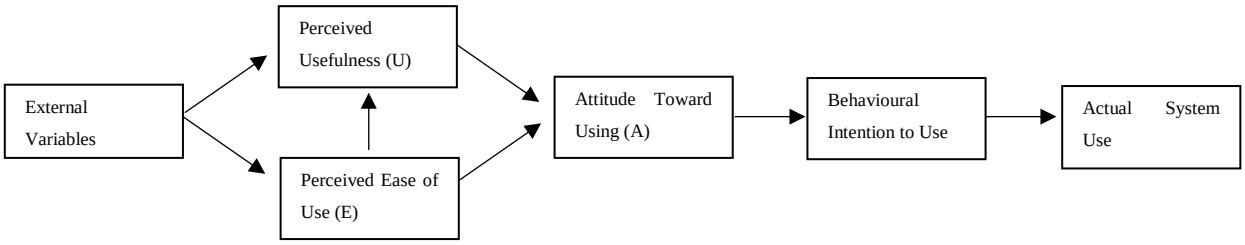

Figure 1: Technology Acceptance Model (TAM) by Davis (1989)

When all the factors are in place, there will be an attitude and intention to use a specific application system.

Within the last two decades, there have been numerous studies supporting TAM (Davis et al., 1989; Venkatesh & Davis, 1996; Venkatesh, 2000). However, the TAM has also been highly criticised due to the oversimplified analysis of the adoption of a new technology (San-Martin, Lopez-Catalan, & Ramon-Jeronimo, 2013), as the two primary factors only explain about 40% of the variance in an individual's behavioural intention to use a technology (Legris, Ingham, & Collerette, 2003).

Most of the research that has applied TAM as a reference paradigm emphasized the model by adding the new predictive constructs into the classic model or extended TAM. Thus, two other variations of TAM were developed: TAM2 (Venkatesh & Davis, 2000), which incorporates social norms, and TAM3 (Venkatesh & Bala, 2008), which adds enjoyment to the study. Despite the criticism, many studies still support on how TAM is widely accepted to predict the behavioural intention on different fields of technology acceptance: e-mail (Gefen &

Straub, 1997), e-learning (Lee & Pituch, 2006), web (Johnson & Hignite, 2000), e-health (Lanseng & Andreaseen, 2007), among others.

Given the unique attributes of Artificial Intelligence, TAM isn't explicit neither includes what motivates people for adopting and using such technology. Thus, the Uses and Gratification Theory (Katz et al., 1974) may provide a useful theoretical support to improve the understanding in this new technological field.

2.1.3. Uses and Gratification Theory

The Uses and Gratification Theory (U&GT) was first developed in the 1940s by Lasswell, but it wasn't until late in 1970s where the theory would be built upon by Katz et al. (1974). According to Wurff (2011), this theory combines social and psychological attributes of needs, and it proposes that media has little to no power over audiences; instead, audiences are highly active and goal oriented, and can select the media that fulfils their needs (Katz et al., 1974). The U&GT combines social and psychological attributes of needs (Wurff, 2011), that need to be fulfiled and gratified. Thus, people turn to media as a useful tool to gratify their needs.

In 2019, McLean and Osei-Frimpong, added a fourth category to Rauschnabel, Rossmann and Dieck's (2018) categories capable of motivating the use of voice assistants: along with utilitarian benefits, hedonic benefits and symbolic benefits defined by Rauschnabel et al. (2018), social benefits were added, referring to the idea that individuals use specific media to fulfil specific needs (McLean & Osei-Frimpong, 2019). However, in McLean and Osei-Frimpong's study, it was concluded that there is not a significant relationship between hedonic benefits and the usage of in-home voice assistants, meaning it is unlikely users would use an in-home voice assistant seeking enjoyment from it. Having this said, the usage of in-home voice assistants is determined by three key categories of needs that need fulfilment:

- *Utilitarian/Intellectual Benefits***:** Users might use an in-home voice assistant to search for information or educate themselves on a certain topic.
- *Symbolic/Sensory Benefits***:** Users might use an in-home voice assistant looking to reaffirm their social status, by looking technologically advance and astute.
- *Social/Affective Benefits***:** Users might use an in-home voice assistant with the will to fulfil social needs as its usage makes them feel as though they are in the presence of another social entity (Heerink, Krose, Evers, & Wielinga, 2010).

Luo and Remus (2014) highlight that the U&GT can be considered axiomatic as it is applicable to almost every type of media: traditional and interactive media, social networks,

online games, virtual and augment reality, among others (McLean & Osei-Frimpong, 2019). Having this said, nowadays this theory serves as a tool for understanding how individuals connect with the technologies around them, meaning it can, and should, be applied to the use of voice assistants, such as the Google Assistant in study in this paper, as its usage is likely motivated by the desire to gratify a range of needs.

Another way to grant customers' needs and desires is through brand anthropomorphization (Guido & Peluso, 2015), which can be defined as the extent to which "*a branded product is perceived as an actual human being*" (Guido & Peluso, 2015, p.3), where thoughts and feelings towards a certain brand are mirrored into personal thoughts and feelings (Park et al., 2013). One theory that supports this behavior is the Attachment-Aversion Model of Customer-Brand Relationships, developed by Park et al. (2013).

2.1.4. Attachment-Aversion (AA) Model of Customer-Brand Relationships

In 2013, Park et al., first developed the AA model of Customer-Brand Relationships, which proposes a customer-brand relationships model and is based on two component factors: brand self-distance and brand prominence. These, not only foresee psychological consequences of feeling close to a brand, related to external (vs. internal) blame attribution, but also help differentiating consumer brand ambivalence, which occurs when there are mixed feelings about a certain brand, and brand indifference, which happens when there are no particular feelings about a brand (Park et al., 2013).

Also, the original Attachment-Aversion (AA) Model of Customer Brand-Relationships, relies on anthropomorphizing brands, meaning it agrees with the fact that people treat brands like humans and form intimate relationships with them, to the point where thoughts and feelings about brands mirror thoughts and feelings in personal (Park et al., 2013). However, Schmitt (2013) agreed that research should also focus on the nature of brands and how they differ from people. Also, the original model by Park et al. (2013), specifies marketing related determinants, but not which activities lead to enticing (annoying), enabling (disabling) or enriching (impoverishing) the self, as well as an existent gap when it comes to integrating the model within the existing brand frameworks in marketing and consumer research, such as Keller's (1993) consumer-based brand equity model, or Aaker's (1997) concept of brand personality.

Having this said, Schmitt proposed an extended AA Relationship model, which offers an *unifying model of customer-brand relationships* (Schmitt, 2013).

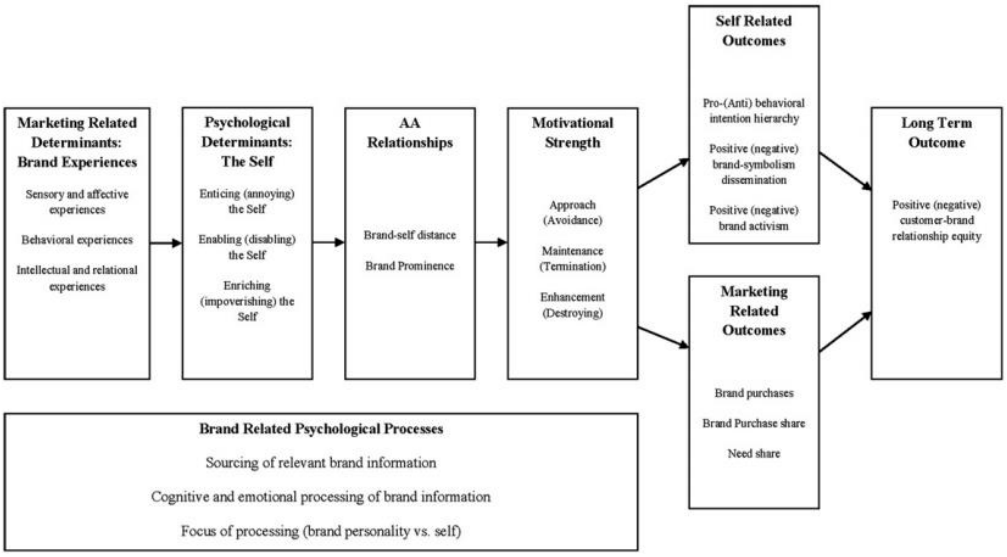

Figure 2: The extended Attachment-Aversion Model of Customer-Brand Relationship by Schmitt (2013)

The extended model proposes that an experience with the brand affects the self-related psychological determinants of attachment-aversion relationships. Along with motivational strengths, this kind of relationships result in both self-related and marketing related outcomes, which in the long term may turn into positive (negative) customer-brand relationship equity.

Accordingly, the deeper is an experience with a brand, the more customers will connect to it, as a consumer who has had impressive brand experiences shows stronger satisfaction associated with his/her experiences (Ha & Perks, 2005). This, along with the TAM and U&GT described earlier in the paper, creates a chance of, through the adoption and usage of new technologies, such as Artificial Intelligence, companies easily succeeding in the market, with a higher degree of experience personalization and more satisfied and committed customers.

2.2. Development of Smart Devices

According to Shankar (2018), the development and advancement of Artificial Intelligence occurs through the analysis of four types of data, that result in four AI analysis types: numeric analysis, text analysis, image/video analysis, and voice analysis, which is related, for example, to customer service and order management, and it allows purchase prediction, service recovery and order fulfilment. Having this said, and according to the same author, it's correct to say that retailers can benefit from AI as it aids in understanding/anticipating omnichannel and mobile shopping behaviour, sales/customer relationship management, media optimization, among many others.

The evolution in research about this technology is driving companies to the creation of new products, such as smart devices, being one of them the voice assistants. They use the data

gathered by the smart and "thinking" machines, with the main goal of creating a better and more personalized experience for the customers.

With the development of smart devices, companies' task of creating differentiation in the way they connect to their customers has been facilitated. These will not only transform how companies connect with their customers, but also become the primary channel through which customers get information, products and services (Dawar, 2018) The increase in the number of smart devices' users has been a reality and, according to Tsai, Wang, Yan and Chang (2017, p.1) "*with a huge number of users, ecommerce marketing strategies in the IoT become extremely important and must be altered accordingly in response to changes in the environment and industry*".

They make work via text (online chat), by taking and/or uploading images (Samsung Bixby) or by voice control (Alexa by Amazon). In this paper, voice assistants will be the focus within the range of smart devices, as this is one of the fastest growing trends of the new retail. As of 2019, there were an estimated 3.25 billion digital voice assistants being used in devices around the world, and according to Statista (2020), forecasts suggest that by 2023 the number of digital voice assistants will reach around eight billion units – "*a number higher than the world's population*".

2.2.1. Voice Assistants

A voice assistant is an Artificial Intelligence tool that assists customers in their daily tasks. They are intelligent sound columns that can answer our questions and voice controls, execute actions in other connected technological devices, such as turning on the lights, and interact with service providers (e.g. making a reservation in a restaurant or calling an Uber), meaning they can serve as a central information source but also as home assistants. To detect when a user makes a request, the multiple microphones of the device continuously listen for the device's activation keyword, which can be, for example, "Alexa" on Amazon, or "Hey Google" on Google.

Supported by Artificial Intelligence functionalities, these machines can learn the customers' criteria and optimize whatever trade-offs they're willing to make, such as a higher price for better quality products/services. Customers' fidelity will start shifting from trusted brands to trusted voice assistants, which can become a challenge for brands as this will directly affect the customer-brand relationship (Dawar, 2018).

One key aspect of creating trust is by not only being honest and transparent, but also creating and offering various brand experiences (Ha & Perks, 2005). By assisting customers in their decision-making process, a more personalized experience will be delivered to the customer and the feeling of easiness associated with the use of the voice assistant will turn those experiences into benefits, as due to cognitive fluency (Unkelbach, 2006), the easier it is to understand an offer, the more people are likely to positively connect to it. Making customers feel more connected to a brand, will consequently improve their satisfaction, leading to love and loyalty, a goal across many organizations.

Revolutionizing technologies like this tend to shape the market, as they're "*becoming increasingly sophisticated and able to manage many aspects of our lives*" (Azmandian, Arroyo-Palacios, & Osman, 2019, p.16), and also the companies themselves as they're going to have to adapt to them and to the customers' new demands. This ability and availability of a brand in the adoption of emerging technologies, such as Artificial Intelligence, is one of the aspects that's going to define the customers' experience with it.

Research suggests that friend-like interaction with voice assistants can result in positive brand attachment (Wu & Dou, 2017), and in the need to share, which according to the AA Model of Customer-Brand Relationships (Schmitt, 2013), will result in positive customer brand relationship equity. However, this can only happen if the customer is exposed to marketing related determinants and, in this case, has a positive brand experience, able to entice (sensory and affective experience), enable, and enrich (intellectual experience) the self (Schimtt, 2013).

2.3.Marketing Related Determinants

2.3.1. Brand Experience

With the development of many marketing models and the emergence of new consumption patterns, brands have started to realise that products and services by themselves aren't enough do develop a profitable business on the long term. Thus, brands have had to relocate and adopt new relationship strategies with the consumers, in order to build durable experiences and relationships that, nowadays, are being influenced by the digital environment, new life-styles and the new peer to peer relationship between customers and brands (Amoroso, 2019). This leads to the first hypothesis of the study - *H1: Brand experience is positively related to the usage of voice assistants*

The need for brands to differentiate in this era has brought up the concept of experiential marketing, or brand experience, an important trend in marketing thinking, as marketing

literature has highlighted the need to create deeper and more exclusive experiences in order to develop stronger brands (Keller & Lehmann, 2006; Morrison & Crane, 2007). When consumers search and consume brands, they're not only exposed to the product attributes themselves, but also to various brand-related stimuli, such as brand-identifying colours, shapes, slogans and brand characters, which are part of a brand's design and identity, packaging and communication (Brakus, Schmitt, & Zarantonello, 2009). All of this is what we identify as brand experience.

In the voice assistant panorama, the only thing the user is exposed to is a small device, and so the experience is created by the device's ability to communicate in a given language, learn and store new and complex information, and the easy adaptation to new circumstances and patterns (Alan & West, 2018).

Brands are using innovative strategies to match the changing consumer profiles, aiming to create experiences that shall be cherished forever (Srinivasan & Srivastava, 2010). When using a voice assistant, there isn't a direct connection with the brand, as it is mediated by a device, and so building brand knowledge is key. To do so, brands must communicate consistently as loyalty and customer retention are crucial to a brand's success (Fill, 2009). According to Lange and Dahlén (2003), familiar brands have major communicative advantages over unfamiliar ones, meaning brand familiarity is a concept worth studying.

2.3.2. Brand Familiarity

Familiarity is the ability to feel close to something, the act of taking something into consideration or thinking about it even when you don't know it that well. When applied to brands, the concept of brand familiarity reflects "*the 'share of mind' of a given consumer attained to the particular brand and the extent of a consumer's direct and indirect experience with a brand*" (Mikhailitchenko, et al., 2009, p.932), and it's a strong component of brand equity (Aaker, 1991).

The more experiences the consumer has with a brand, the more the brand will be retained in his memory (Anderson, 1983). Thus, if the previous encounters with the brand were positive, it's likely the interest for the brand increases, but if they weren't positive, there's a high risk that the new encounters will contribute to a feeling of aversion towards the brand (Soderlund, 1998).

Following what was stated above, the following hypothesis was formulated - *H1a: Brand experience is positively related to the usage of voice assistants, when moderated by brand familiarity.*

According to Alba and Hutchinson (2000), judgements based on familiarity require low cognitive activity which, along with the Technology Acceptance Model, explains why brand familiarity exists: consumers would rather have a satisfactory experience then an optimal experience, as long as the effort is diminished. Unless it is a life or death situation, when consumers do not see any major differences among brands, they will recur to brand familiarity as a cue in their decision-making process (Keller, 2008). Therefore, brand with higher levels of familiarity enjoy higher levels of liking among customers (Chinomona & Maziriri, 2017).

Measuring these levels of liking is of upmost importance, as brands strive to reach marketing effectiveness and customer satisfaction, an evaluation of the outcome of consumption experience (Oliver, 1980). However, satisfaction comes in various levels and has two opposite polos: it can go from hate to love. Brands are interested in acquiring knowledge on how consumers relate to brands and why do they prefer some brands to others, and sometimes even love them.

2.4. Marketing Related Outcomes

2.4.1. Brand Love

Even though brand love is an extremely relevant marketing topic, little to no agreement exists as to what brand love is (Albert, Merunka, & Valette-Florence, 2008). As Batra, Ahuvia and Bagozzi (2012) affirm, the increasing buzz that brand love has raised in marketing research has not been followed by a clear definition of what it really represents.

According to research, there are two important schools of thought when it comes to brand love, being one of them where love is seen as a psychological state, which is described as the aggregation of behaviours, cognitions and emotions associated with desire to enter or maintain a close relationship with a specific other person (Aron & Aron, 1991), and the other where love is perceived as an independent psychological construct, where in 1986, Sternberg applied the triangular theory of love to understand this feeling through a psychological process that can be divided into three components: intimacy, passion and decision/commitment. Years later and within this triangular theory of love, Shimp and Madden (1988) developed a theory to be applied in a consumer-object optic in order to understand the relationship between a person and an object and the feelings involved in it. Instead of the previous dimensions (intimacy, passion and decision/commitment), these three components were slightly modified and today we have the liking, yearning and decision/commitment. The three components of Sternberg's theory of love have shown how these components have analogues in consumer-object relations and the

presence or absence of these feelings will result in different types of love for a specific object. Ahuvia (1993) is capable to provide evidences that validate the previous model, as he states that a person may feel love for an object if the level of integration and desire for the object surpasses the limits, reaching a critical threshold. Ahuvia (1993) also alleged that sometimes the feeling of love for an object can match the feeling of love for a person.

Having this said, it's understandable how users can deeply connect to their voice assistant, as this object was developed to simulate an easier-to-deal-with human, available 24/7 for anything the user needs, touching the emotional side of the customer. Also, consumers are drawn towards all kinds of IoT innovations because connected devices are able to personalize an experience for each individual and it adds convenience to their lives (SKUlocal, 2016). Having this said, the following hypothesis is proposed - *H2: The usage of voice assistants is positively related to brand love.*

An experience able to touch this emotional side will result in the existence of consumer attachment and commitment on the brand (Ardyan, Kurnianingsih, Rahmawan, Wibisono & Winata, 2016).

2.4.2. Brand Commitment

Throughout the years, many authors have been trying to agree on a clear brand commitment definition. The most recent one is by Hsiao, Shen and Chao (2015), which defines brand commitment as attachment feeling resulting from a previous satisfactory interaction with a brand, which will guide the consumer to continue using the brand over time while resisting to internal and external changes, contributing to a valuable relationship with it.

Commitment is related to what the brand proposes to add to consumers' life. In this case, the value doesn't come from a practical and functional benefit: it comes from the emotional and expressive benefit that the consumer absorbs from an experience with the brand, and it's considered imperative to the emergence and maintenance of consumer brand relationships (Fournier, 1998).

2.4.2.1. Dimensions of Brand Commitment

According to Jones, Fox, Taylor, and Fabrigar (2010) and other authors, there are three dimensions of brand commitment: continuance or calculative, normative, and affective brand commitment.

Normative commitment can be described as a psychological connection of the consumer based on an almost mandatory relationship with the brand: it refers to making the consumer feel like he must keep a relationship with the brand (Jones et al., 2010). When it comes to a *continuance or calculative commitment* (Jones et al., 2010), there's also a psychological attachment but, this time, based on the costs associated with ending the relationship with the brand. In this situation, we are looking into a more rational and economic-based relationship, almost dependence, as the switching costs are too high or there aren't any more options that suit the same quality and properties as that brand. Last, but certainly not least, there's the third dimension of brand commitment, named *affective commitment* (Hsiao et al., 2015). When we are in the presence of an affective brand commitment, it's safe to say that there's an emotional attachment between the customer and the brand, as he's able to identify himself with the said brand and, the customer himself, makes effort to maintain the existent relationship.

2.4.2.1.1. Affective Brand Commitment

Affective brand commitment is pointed out by many authors as the most important dimension of brand commitment and some authors (Vivek, Beatty, & Morgan, 2012) even risk saying this is the only dimension worth studying to explain the construct. This kind of commitment and the ability of the customer to relate in an emotional and personal way to the brand (Gustafsson, Johnson, & Roos, 2005) is based on shared values, identification and attachment (Fullerton, 2003), making them less sensitive to price or convenience (Mason & Simmons, 2012) as, in these cases, the relationship overlaps everything.

A smart consumer is a consumer who voluntarily engages and is competent to participate in experience sharing, by the usage of technology (Chen, Drennan, Andrews, & Hollebeek, 2018). This type of consumers has increased control and consciousness of their decision-making, expect greater service customisation and personalisation, and are empowered. Once a brand provides smart consumers with a positive experience, that gives them the freedom of choice over what happens, the smart consumer will be willing to engage with that brand, and to create a passionate and committed both-sided relationship with it (Chen et al., 2018).

According to Loureiro, Ruediger and Demetris (2012), brand love has a positive impact on brand commitment, this last one has a positive impact on loyalty intentions, just as Bettencourt (1997) suggests. Because commitment is the attitudinal component of brand loyalty (Oliver, 1999), the following hypothesis is proposed - *H3: Brand love is positively related to affective brand commitment.*

Positive behaviours that show a will to create, maintain and strengthen a relationship between a customer and a brand are created by commitment, allowing the conclusion that loyalty is positively influenced by commitment (Cater, 2010). Having this said, the hypothesis below was formulated - *H4: Affective brand commitment is positively related to brand loyalty.*

2.4.3. Brand Loyalty

In the last years, loyalty has become an important matter of study in marketing research. Fidelity programs and benefits to the customer are very common and they seem to be the perfect track: brands tend to incentivise customers' commitment and customers feel privileged to have a personalized experience with the brand. But why does exactly brand loyalty mean?

Brand loyalty represents a strategic asset and can be defined as the "*customer's unconditional commitment and a strong relationship with the brand which is not likely to be affected under a normal circumstance*" (Khan & Mahmood, 2012, p.33). It reflects the evaluation a customer makes about a brand and, in the case where there is an affective commitment between he/she and the brand, there is a high emotional dimension that influences this evaluation. This strong emotional dimension is associated to re-purchase or to continuing preferring a product and/or service over time, apart from external factors: *when a consumer is loyal, he/she keeps on purchasing the brand, regardless of price or change in product properties, as they are closely tied to it* (Aaker, 1991).

In the smart devices market, Yeh, Wang and Yieh (2016) indicate that a combination shared values, brand identification, attachment and other brand benefits (functional, emotional, and social) significantly affects brand loyalty. Also, brand satisfaction positively affects brand loyalty (Ha & Perks, 2005). Thus, it is of utterly importance that this concept is connected to affective brand commitment, brand love and brand experience, since, as referred earlier in the paper, brand love will have a positive impact on the affective dimension of brand commitment (Loureiro, Ruediger, & Demetris, 2012), which is going to positively impact brand loyalty (Bettencourt, 1997). All of the above, are influenced by the experience the consumer has with the smart device, which can be the determinant of the brand satisfaction outcome referred earlier. Thus, hypothesis 8 is formulated - *H5: Brand love is positively related to brand loyalty.*

In order to summarize the proposed hypotheses:

H1: Brand experience is positively related to the usage of voice assistants.

H1a: Brand experience is positively related to the usage of voice assistants, when moderated by brand familiarity,

H2: The usage of voice assistants is positively related to brand love.

H3: Brand love is positively related to affective brand commitment.

H4: Affective brand commitment is positively related to brand loyalty.

H5: Brand love is positively related to brand loyalty.

CHAPTER 3

Conceptual Model

According to the information collected in the previous chapter and the formulated hypothesis shown before, the following conceptual model was developed:

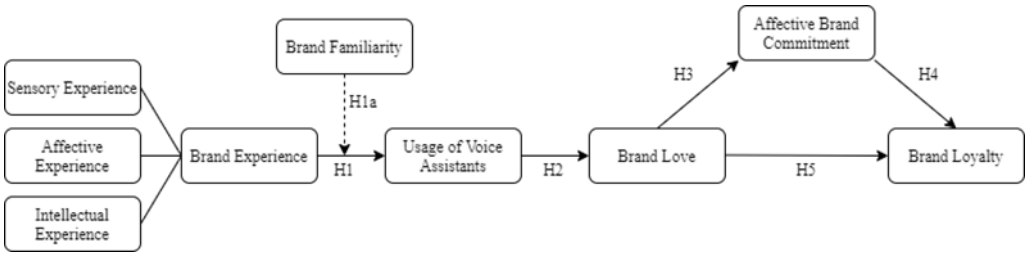

Figure 3: Proposed conceptual model

The model shown above pretends to illustrate the constructs that possibly create and moderate a relationship between an experience the customer has with a voice assistant and the affective commitment relationship he's able (or unable) to create with the brand. This investigation is focused on the different experiences a customer has with a certain brand, in its three different levels (sensory, affective and intellectual), the way that experience impacts the usage of voice assistants and the different outcomes that can come out of it – brand love, affective brand commitment and brand loyalty. Furthermore, this model proposes brand familiarity as a moderator between an experience with the brand and the usage of voice assistants.

CHAPTER 4

Methodology

4.1. Research Approach

To find support from the previously proposed hypotheses based on the literature, a set of relevant data had to be retrieved from the collected sample. Thus, a quantitative research will be conducted in order to make measuring various patterns controllable. Also, this type of research allows an interpretation of the participants meaning of theirs actions (Denzin, 1989), and also the gathering of information from a larger sample to measure data, generalize results and reveal patterns (Malhotra & Birks, 2007).

The process under which the qualitative research was conducted, an experiment followed by a questionnaire, was chosen due to the ability to get the consumer acquainted with a voice assistant before having to make judgments about it: otherwise, the questionnaire answers would be biased by the consumers' previous experiences with it. Due to COVID-19, it wasn't possible to do the experiment physically, and so a series of videos was produced and made available online through a temporary website on Wix, so that the respondents could have the closest to an experiment possible. This turned into a limitation of the study, as by creating these videos it was not possible to create a personalized experience for each respondent.

Since the investigation aims to test the proposed model with different types of experience personalization with the voice assistant, two experiments were created. However, participants only had access to one of them, through the randomizer algorithm available on Qualtrics Survey Software. This decision was made to assign respondents to an experimental block of videos, to understand if the degree of experience personalization they assisted would influence their feelings and thoughts towards the voice assistant. The necessary data was then fully collected through a questionnaire given to participants after they underwent the online experiment.

4.2. Data Collection and Sample

The research study began on the 25th of May and it lasted until the 8th of August. Both the online experiment and the questionnaire were released at the same time, as in this case the experiment should be immediately followed by the questionnaire.

4.2.1. Questionnaire Development

Both the questionnaire design and data collection were made in Qualtrics Survey Software. It was created a single link through this platform, which would randomly conduct participants into either experiment #1 or experiment #2. After the experiment on Wix, they would have to go back to the questionnaire and answer it. All this process was thoughtfully explained to the participants beforehand.

Proposedly, it wasn't given too much information about the voice assistant. The only thing referred was that it was a Google Assistant. This was done so that respondents would base their answers only on the experiment they had just had, rather than previous encounters with it, which could bias the obtained results.

The questionnaire was divided into three main sections: introduction of the study, feelings and thoughts towards the voice assistant, and customer profile. The first part of the questionnaire starts by presenting the study and how it will be conducted. It is where the link to the experiment is shown, as well as it is explained that after the experiment, they will have to come back to the questionnaire link to answer all the questions based on their experiment. It was explicitly said that the participants should base their answers on the experiment.

The second part of the questionnaire included a series of variables that were used to test the proposed conceptual model, being them, brand experience (Brakus et al., 2009) followed by the usage of voice assistants, that were both firstly measured in order to make sure that the experience was well present in the participant's mind, before having him/her have to answer deeper questions about it. These variables were followed by affective brand commitment, that could lead to brand love and eventually brand loyalty, the next two variables in study. Given this order of questions, it was possible to create a feeling of deepening the connection (or lack of it) they had had with the voice assistant as the questionnaire advanced, simulating what could happen in real life as both brand love and brand loyalty can be an outcome of affective brand commitment (Carroll & Ahuvia, 2006; Mathew et al., 2012). Lastly a brand familiarity related question was conducted. This is our moderator variable, and that's the reason why it is presented last: there is no direct connection within this variable and the others presented – it is only used to understand how it can moderate the relationship between brand experience and the pleasant usage of voice assistants.

The third part of the questionnaire is dedicated to the consumer profile, an important section for gathering information and demographics that can possibly influence opinions and behaviours. Thus, generic demographic information was asked: gender, age, education, professional status. This section also included a question asking whether the participant had a

voice assistant and, if so, which one. This was intentionally done to understand if their answers could be biased by having had previous experiences with voice assistants.

4.2.2. Data Measurement and Scales

The questionnaire was developed with the support of scales presented in literature, in order to measure each of the constructs in the proposed conceptual model. The table below presents the used constructs, as well as their authors and scales.

Table 1 - Constructs, Scales and Authors

Construct	Scale	Authors
Brand Experience	(strongly disagree, strongly agree) - likert 7	Brakus et al. (2009)
Usage of in-home Voice Assistants	(strongly disagree, strongly agree) - likert 7	Venkatesh et al. (2012)
Affective Brand Commitment	(strongly disagree, strongly agree) - likert 10	Gustaffsson, Johnson, & Roos (2006)
Brand Love	(strongly disagree, strongly agree) - likert 5	Carroll & Ahuvia (2006)
Brand Loyalty	(strongly disagree, strongly agree) - likert 7	Keller (2008)
Brand Familiarity	(strongly disagree, strongly agree) - likert 5	Há & Perks (2005)

Regarding the demographic constructs, gender was measured between "female", "male" and "rather not say". Age was measured and divided into eight groups: less than 18 years old, 18-24 years old, 25-34 years old, 35-44 years old, 45-54 years old, 55-64 years old, 65-74 years old, and over 75 years old. Education was also measured and divided into six groups, being them 9th grade, High School, bachelor's degree, PhD, Master Degree and Doctoral Degree. Professional status was measured and divided into five groups ("1" to "5" denotes student, student worker, worker, unemployed and retired, respectively). Lastly, having a voice assistant was measured between "yes" and "no", and to those answering "yes", the options that succeeded were "Google", "Amazon", "Apple", "Samsung", "Nokia" and "other".

The data provided by the questionnaire was uploaded directly to Excel, where it was adjusted in order to fit an .csv file that would be suitable to SmartPLS 3, since the analysis will be done using a structural equation model (SEM) in order to test the proposed model. This enables a more appropriate causal-predictive analysis among all of the constructs in a complex model, as the "*analysis is concerned with testing a theoretical framework*" (Hair, Risher, Sarstedt, & Ringle, 2019, p.37).

A pilot pre-test to 30 respondents was conducted in order to test the scales' reliability. This was done by assessing the Cronbach's α values, which confirmed all scales are suitable as there were good levels of internal consistency, with all the α values above 0.70 (Hair, Black, Babin, & Anderson, 2010). As soon as this was confirmed, the questionnaire was shared to a wider population.

4.2.3. Population

The population of this research study does not concentrate on a specific group of individuals: it consists of an entire group from which conclusions will be drawn. Having this said, the link of que questionnaire was widely shared on various social media channels, including Facebook, Instagram and Twitter. It was registered a total of 250 respondents, with 247 valid responses, which yields an effective response rate of 98,8%. Among the valid responses, 62,8% of the respondents were women while 36,8% of the respondents were men. The remaining 0,4%, preferred not to say their gender. Also, most of the respondents were comprehended within the 18 to 24 age group. Other relevant demographic information is presented on table 2.

Table 2 - Demographic Data

N=247	Demographic	%
Gender		
	Female	62,8
	Male	36,8
	Rather not say	0,4
Age		
	Less than 18	3,6
	18-24	50,6
	25-34	25,5
	35-44	7,7
	45-54	8,5
	55-64	2,0
	65-74	1,6
	75+	0,4
Education		
	9th grade	2,0
	High school Degree	11,7
	Bachelor Degree	57,1
	Postgraduate Degree	10,1
	Master Degree	17,4
	PhD, Doctoral Degree	1,6
Occupation		
	Student	40,1
	Student-Worker	30,0
	Employed	21,9
	Unemployed	5,3
	Retired	2,8
Has a Voice Assistant		
	Yes	50,6
	No	49,4

The possession of a voice assistant was also measured between “yes” or “no”, and 50,6% respondents have a voice assistant, where the most popular among them is Siri by Apple (22,7%), followed by Google Assistant (19,8%). The results also allow interesting conclusions such as the fact that the possession of voice assistants is more common on members from generation Y, also known as Millennials, comprehended between 1986 and 1995 (Eisner, 2005), which strengthens a study by Statista (2017) which states that in the last 5 years there is a growing tendency within Millennials to use voice assistants. Also, according to a report by PwC (2018), younger generations are driving adoption but not necessarily heavy usage,

supporting that individuals aged 25 to 49 years old are the ones who use voice assistants the most, and meaning that they not only have a higher tendency to own a voice assistant, but also to use it more often. Regarding occupation, it's easily concluded that worker-students are the group that has the higher tendency to own a voice assistant, which corroborates the fact that millennials are the generation with a higher tendency of owning voice assistants, as all of the worker-student respondents that own a voice assistant are within that age group. Regarding education, individuals with higher education levels, such as bachelor's degree, Master Degree or PhD tend to possess voice assistants more than any other education level do, which similarly to Goldfarb and Prince (2008) demonstrates that education positively correlates with adoption of technology.

CHAPTER 5

Result Analysis

The analysis of the results was completed through a partial least square equation modelling (PLS-SEM), using the Smart PLS 3 software to test the proposed model, just like referred and justified in chapter 4. There are two steps involving this type of research in order to evaluate the conceptual model: the outer model, which is referred to as the measurement model and is used to "*evaluate the relationships between indicator variables and their corresponding construct*" (Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014, p.110), and the inner model, referred to as the structural model, which displays the "*relationships between the constructs being evaluated*" (Hair et al., 2014, p.110).

5.1. Structural Model Results

Brand experience is a second-order construct, meaning it is not measured by means of manifest items, but instead by means of other first-order constructs. Thus, a three-step approach for modelling and testing composite second-order constructs was followed (Van Riel, Henseler, Kemény, & Sasovova, 2017), as it is considered the only consistent approach for modelling and testing composite second-order constructs made up of reflectively measured first-order constructs. Having this said, brand experience was represented by its three first-order constructs: Affective Experience (AE), Intellectual Experience (IE) and Sensory Experience (SE).

Just as suggested by Van Riel et al. (2017), with all possible connections included, the results showed a SRMR of 0.064, which is widely accepted by the most conservative (Hu and Bentler, 1999) criterion limits, suggesting the model fits the data well.

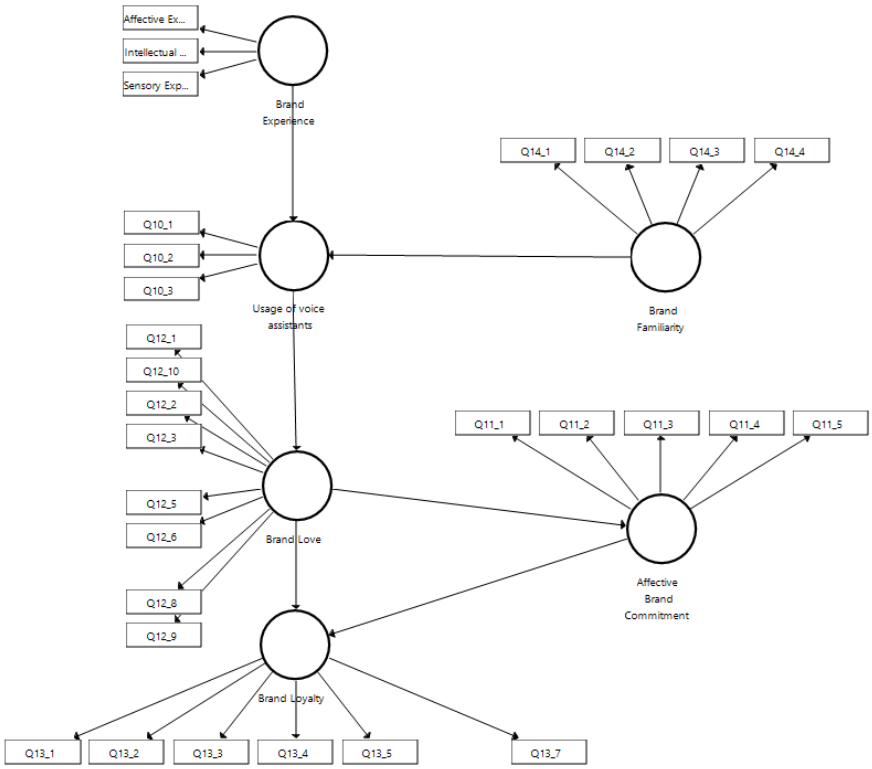

Figure 4: Proposed Model

5.2. Outer Model

The most important measurement/outer model metrics, according to Hair et al. (2010) for PLS-SEM are convergent validity, internal consistency reliability and discriminant validity. The outer loadings vary from 0.733 to 0.971, being most of them above 0.70 (Hair, et al., 2010). Two of the outer loadings from the Brand Experience construct have values below 0.70 (0.668 and 0.641); however, when deleted, there is not an increase in the composite reliability nor in the AVE, meaning those items are relevant (Hair, et al., 2010), and therefore were not removed.

Three items from the Brand Experience construct, three items from the Brand Love construct and one item from the Brand Loyalty construct were deleted from the original scale since their outer loadings were lower than 0.40 and, according to Bagozzi, Yi, and Philipps (1991) they are considered irrelevant for research.

The constructs' Cronbach's alpha and composite reliability values were all well above the recommended levels of 0.70 (Hair, et al., 2010), indicating the model is internally reliable. Furthermore, the AVE of all constructs was above 0.50, suggesting that each construct has convergent validity (Hair, et al., 2010), i.e., all measures "*positively correlate with alternative*

measures of the same construct" (Hair, et al., 2010, p.137). Specified results are present in table 3.

Table 3 - Reliability and Validity test for the complete data

Constructs	Items	Outer Loadings	Cronbach's α	Composite Reliability	AVE
Brand Experience	BE1	0.767	0.822	0.877	0.589
	BE2	0.760			
	BE3	0.842			
	BE4	0.668			
	BE5	0.641			
	BE6	0.735			
Usage of in-home voice assistants	UVC1	0.940	0.952	0.969	0.912
	UVC2	0.971			
	UVC3	0.953			
Brand Familiarity	BFA1	0.733	0.787	0.862	0.609
	BFA2	0.808			
	BFA3	0.783			
	BFA4	0.796			
Brand Love	BLO1	0.796	0.924	0.937	0.652
	BLO2	0.786			
	BLO3	0.811			
	BLO4	0.768			
	BLO5	0.827			
	BLO6	0.859			
	BLO7	0.803			
	BLO8	0.807			
Affective Brand Commitment	ABC1	0.787	0.864	0.902	0.647
	ABC2	0.812			
	ABC3	0.816			
	ABC4	0.766			
	ABC5	0.840			
Brand Loyalty	BLOY1	0.854	0.917	0.936	0.708
	BLOY2	0.858			
	BLOY3	0.884			
	BLOY4	0.832			
	BLOY5	0.837			
	BLOY6	0.781			

Table 4 – Discriminant Validity test.

	ABC	BE	BFA	BLOY	BLO	UVC
ABC	**0.804**					
BE	0.624 (0.711)	**0.737**				
BFA	0.655 (0.795)	0.591 (0.710)	**0.780**			
BLOY	0.714 (0.792)	0.528 (0.596)	0.618 (0.717)	**0.842**		
BLO	0.699 (0.771)	0.613 (0.689)	0.663 (0.771)	0.837 (0.908)	**0.807**	
UVC	0.672 (0.740)	0.557 (0.607)	0.665 (0.760)	0.616 (0.655)	0.616 (0.652)	0.955 (0.163)

[1]

According to Henseler et al. (2015), for discriminant validity to be established, all HTMT ratios must be lower than 0.850 (Henseler, et al., 2015). In the case of this research, and as shown on table 4, all ratios are lower than 0.850, besides the HTMT ratio between brand love and brand loyalty (0.908). However, according to some authors, the discriminant validity of the model is considered

[1] Affective Brand Commitment (ABC), Brand Experience (BE), Brand Familiarity (BFA), Brand Love (BLO), Brand Loyalty (BLOY), Usage of in-home Voice Assistants (UVC). Fornell-Larcker test results. HTMT Ratios are in parentheses.

respected as long as the HTMT ratio is less than 1.00 (Gaskin, Godfrey, & Vance, 2018), which indicates an establishment of discriminant validity for all constructs.

5.3. Second Order Construct

Brand Experience, as a second-order construct, had to be readjusted in order to be transformed in a first-order construct. Since explanative constructs functioned as its items in the final model, its validity and reliability measurements must be addressed in a different way.

Using "Mode A", as suggested by Van Riel (2017), let's look firstly at its indicator weights. As presented in table 5, all Inner VIF of the items that compose brand experience, present a value lower than 5 which, according to Kock and Lynn (2012), shows that there are no collinearity problems between them. Also, in a normal situation, it would be possible to analyse the constructs significant outer weights and loadings (Hair et al., 2014); however, brand experience is a composite construct, meaning "*neither the inter-term correlations nor the loadings are informative about the amount of measurement error*" (Van Biel et al., 2017, p.466). Thus, an alternative method must be used, and the one provided by Van Biel et al. (2017) will be followed.

Table 5 - Collinearity Statistics (VIF)

Latent Construct	Indicator	VIF
Brand Experience	Affective Experience	2.024
	Intellectual Experience	1.692
	Sensory Experience	1.516

The author referred above, suggests the application of a simplified version of Mosier's (1943) for determining the reliability of a weighted composite (ρS):

$$\rho S = w'S^*w \qquad (1)$$

where w is a column vector containing the indicator weights of the second-order composite and S* is the consistent correlation matrix of the second-order composite's indicators, with the respective reliabilities (ρA) on the diagonal. Following approach (1), it is possible to reach a reliability estimate of the brand experience construct of 0.8837, confirming its reliability as a composite construct.

5.4. Inner Model

This research model uses VIFs (variance inflation factors) to identify the multicollinearity in the items. An acceptable VIF value should be below 10 (Hair, et al., 2010), and preferably below 5, which is a more conservative approach. In the proposed model, all VIF values are below 5, ranging from 1.000 to 4.285, besides two of the VIFs who are higher than 5 but still lower than 10 (5.794 and 7.776). These values indicate a lack of concern for potential multicollinearity.

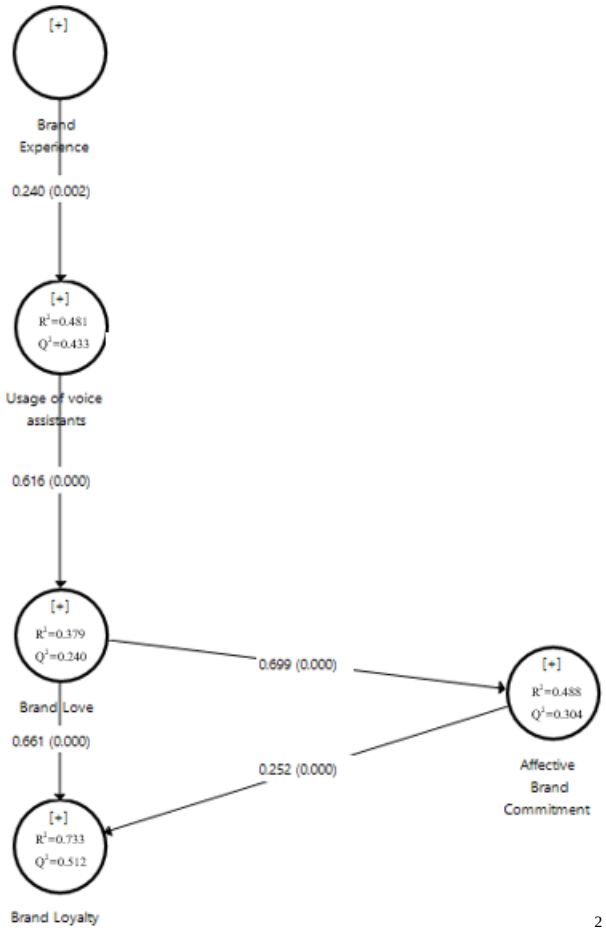

Figure 5: Research Model with PLS Algorithm and Bootstrapping Results

In order to make conclusions about the model fit, there should be an analysis to SRMR. This value should be below 0.10, or 0.08 in a more conservative approach by Hu and Bentler (1999), in order to be considered a good fit. An analysis of this value applied the proposed model reveals that it fits the data well (SRMR = 0.076, NFI = 0.761) (Henseler et al., 2015).

[2] The evaluation of the structural model examines the R^2 estimates, Stone-Geisser's Q^2 value, standardized path coefficients (β), and p-values (in parentheses).

Table 6 - Structural Model Results

Hypothesized relationship	Proposed effect	Path coefficient	f2	Results
BE -> UVC	Positive	0.240*	0.073	H1: Supported
UVC -> BLO	Positive	0.616**	0.611	H2: Supported
BLO -> ABC	Positive	0.699**	0.954	H3: Supported
ABC -> BLOY	Positive	0.252**	0.121	H4: Supported
BLO -> BLOY	Positive	0.661**	0.836	H5: Supported
Variance explained: UVC (R2=0.481), BLO (R2=0.379), ABC (R2=0.488), BLOY (R2=0.733)				
Predictive validity: UVC (Q2=0.433), BLO (Q2=0.240), ABC (Q2=0.304), BLOY (Q2=0.512) [3]				

The model predicts a variance of 48,1% in usage of voice assistants, a variance of 37,9% in brand love, 48,8% of the variance in affective brand commitment, and 73,3% of the variance in brand loyalty, which all indicate moderate predictions (Henseler et al., 2009). Also, the effect size (f^2) of the usage of voice assistants, brand love, affective brand commitment and brand loyalty in relation to brand experience, suggests large effect size at the structural level whereas usage of voice assistants in relation to brand experience has a small size effect (Cohen, 1988). Furthermore, concerning Stone-Geisser's Q^2 results, all the dependent variables' Q2 is larger than zero, which confirms the model's predictive validity (Henseler et al., 2009).

All the hypothesized relationships are statistically significant, and, overall, the analysis supports all of the hypotheses. However, there is still one hypothesis left confirming (H1a), which includes a moderation relationship performed by brand familiarity in between brand experience and the usage of voice assistants. This is the only hypothesis that shows a small size effect, which strengths the relevance of this research regarding the need to analyse relevant moderators for this relationship.

5.5. Moderation Analysis

This research uses a moderation analysis on SmartPLS 3 to detect the potential differences between the usage of voice assistants with different levels of brand familiarity.

[3] *p<0.01 **p<0.001

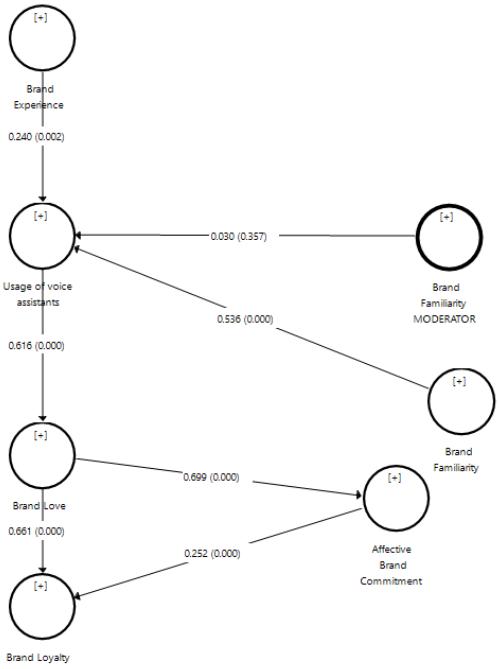

Figure 6: Moderation Analysis

Table 7 - Moderation Analysis Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
BE -> BF -> UVC	0.030	0.025	0.031	0.962	0.357

As seen on table 7, the moderating effect is non-significant as its p value is higher than 0.05 (Hair et al., 2010), meaning, even though brand familiarity has a positive and strong direct effect on the usage of voice assistants (p=.000), it doesn't have a significant moderating effect in between brand experience and the usage of voice assistants. Thus, hypothesis H1a, which states that brand experience is positively related to the usage of voice assistants, when moderated by brand familiarity, is not supported.

CHAPTER 6

Discussion

The objective of this study was to (1) understand the customer's perception on voice assistants and their functional possibilities, (2) investigate what could be the factors that led to the attainment of affective brand commitment by using the voice assistants, and (3) identifying a possible moderator for the relationship between brand experience and the usage of voice assistants. As this dissertation approaches the unexplored subject of the usage of voice assistants on marketing and discusses the consumer responses that this technology can potentially elicit, it does so by studying usage characteristics and possibilities of this technology, aiding consumers along the process of creating a relationship with the voice assistant, from the moment of the first encounter with it, until their completely familiar and committed.

Overall, when analysing the results gathered from the questionnaire given to participants after the AI experience, consumers seemed to respond well to the given stimuli, as it evoked emotional responses. The participants' cognitive responses have, however, a bigger influence on consumer behaviour. As the cognitive responses are also influenced by the experiment, these end up playing a big part on how the consumer behaves, and their willingness to use the voice assistants. The consumers' emotional and functional perception of the voice assistant, being mostly based on the amount of information of the given scenario, were analysed, in order to offer further understanding of the existing, and non-existent, literature.

As stated in the proposed research model, there's a belief in the possibility of creating an affective brand commitment through voice assistants, and that brand familiarity plays a central role between the experience the customer has with the brand and the willingness to use a voice assistant, that is, brand familiarity will most likely moderate the effect of brand experience on the decision towards using the voice assistant.

Starting off with brand experience to the usage of voice assistants, the relationship proved to be positive and significant, just as predicted on the proposed research model. There is no straight forward research that supports these findings; however, an alternative path can be taken that supports them. Research shows that a friend-like interaction with a voice assistant can result in positive brand attachment (Wu & Dou, 2017), and in the need to share, which according to Schmitt (2013), will result in positive customer brand relationship equity: however, this can only happen if the customer is exposed to a positive brand experience (Schimtt, 2013), supporting the results obtained in the study.

Brand familiarity has proved not to be a significant moderator in the proposed model, which may be due to the fact that when respondents answered the survey they were focusing on the voice assistant's brand, and not in a brand they could be connecting to through the voice assistant. However, looking at results in the perspective that the brand is actually the voice assistant's brand, such as Google in Google Assistant, it was proved that the experience they have had with it is definitely influencing its usage or not, and, to those who use, they can reach a feeling of love for it and, therefore, an affective brand commitment with that brand, as it was also proved that brand love can be a determinant of affective brand commitment, such as already predicted by literature (Albert et al., 2013; Albert & Merunka, 2013; Batra et al., 2012).

Even though the usage of the voice assistant is almost completely dependent from the result of the experience the consumer has had with the brand, as brand familiarity does not have a strong enough effect to "eliminate" a bad experience, or enhance a good one, and lead the customer to still use the voice assistant. However, the research also allows to conclude that independently from the consumer having had, or not, an experience with the brand, being it good or bad, if he's familiar with the brand, he'll be willing to use it. This is proved by the strong direct effect that brand familiarity has on the usage of voice assistants.

When referring to hypothesis H2, that states that the usage of voice assistants has a positive effect on brand love, it was confirmed by this research. Again, to this day, as this is a largely unexplored relationship, there is no literature supporting this direct relationship. However, according to Snyder (2015), consumers exhibit love toward a brand if it leads in technology, and it shows openness, authenticness and looks out for the interests of its customers. Since the voice assistant market is still very recent and there are very few brands that use AI voice technology, this author can be used to support hypothesis 2, as brands who use leading technology are market leaders and pioneers in technology adoption, an aspect valued by customers (Smith, 2020).

Moving forward in the model, the relationship between brand love and affective brand commitment, put to test on hypothesis 3, it was considered not only positive but relevant, as initially indicated on the research model, which corroborates with existing research by Loureiro, Ruediger and Demetris (2012). From a conceptual point of view, a consumer who feels intense affection towards a brand should prefer to maintain the relationship (commitment), and from a consumption standpoint, commitment towards the brand should reveal some level of affection (Albert & Merunka, 2013). Also, according to Dick and Basu (1994), the consumers' emotional state in relation to a brand influences their loyalty. As referred in chapter 2, being brand commitment the attitudinal component of brand loyalty (Oliver, 1999), it's

correct to say that these findings are well supported by existing literature. Following this reasoning, and keeping in mind that there is research supporting the fact that loyalty is positively influenced by commitment (Čater & Čater, 2010), it's easily concluded that the findings obtained from this research regarding hypothesis 4, are supported by literature.

Lastly, the final hypothesis stated that brand love is positively related to brand loyalty. Regarding the results obtained from the SmartPLS analysis, there is a positive and very strong relationship between these two constructs (p=0.000). This strong relationship has been widely studied and supported by existing literature (Albert & Merunka, 2013; Batra et al., 2012; Hwang & Kandampully, 2012; Patwardhan & Balasubramanian, 2011; Carroll & Ahuvia, 2006). Since brand loyalty it is widely acceptable on literature as a powerful outcome of brand love, it had to be included in this research: findings suggest that brand love is a "*meaningful mode of consumer satisfaction that is linked to desirable post-consumption behaviour*", such as brand loyalty (Carroll & Ahuvia, 2006, p.86).

Further explanation on the causes of these results are explained in the "Limitations and implications in future research" chapter of the present study.

CHAPTER 7

Conclusions and Recommendations

7.1. Theoretical Contributions

There is not many researchers discussing how the usage of voice assistants can result in an affective commitment with brands. Nowadays, voice assistants are seen as a step back in consumer brand relationships, because as referred on chapter 2, consumers' trust will start shifting from trusted brands to trusted AI assistants, meaning there is something in the middle that might be deteriorating direct consumer-brand relationships. However, this thing in the middle, also known as voice assistants, can be used in the brands' favour, and it should be seen an advantage and not as a disadvantage.

The objective of this study was exactly to take conclusions on how we can turn voice assistants in an advantage, instead of a burden in consumer-brand relationships. As this dissertation approaches the little to none explored world of voice assistants in marketing and discusses the marketing related outcomes that can come out of it, such as brand love, brand loyalty and affective brand commitment, it does so by studying how voice assistants work, what consumers' most value in these devices and how they feel about using it to perform daily tasks and to easily connect to brands through it.

With the collection of almost 250 responses on a widely spread questionnaire, targeted to users and non-users of voice assistants, it was found that voice assistants do not negatively impact the consumer-brand relationships. Actually, voice assistants can, and should, be seen as a way to improve these relationships.

Although it was not possible to identify a potential moderator in this model, that could improve or deteriorate the relationship between brand experience and the usage of voice assistants, it was possible to understand a strong relationship between brand familiarity and the usage of voice assistants, which fills in a gap in literature as this relationship hasn't been studied yet. With this said, a relevant conclusion can be taken out of this study: regardless of the experience a consumer has had with the brand, if he's familiar with it, he'll be willing to use the brand's voice assistant, which gives brands an opportunity to, p.e., more easily recover a customer that left due to a previous unsatisfactory experience.

Another addition to the literature was the fact that the usage of voice assistants can lead to brand love. As referred in the previous chapters, there is no existent literature on the direct effect of these two constructs. Through this dissertation, it was possible to conclude that the

usage of voice assistants not only has an influence on brand love, but it is also a positive influence, which had not been verified by any author before.

7.2. Managerial Implications

This research suggests and recognizes that companies should be more focused on developing voice assistants or, on partnering with existing ones, in order to improve the relationship with their costumers, by personalizing their experience and being closer to them, as the usage of voice assistants is highly dependent on both brand experience and brand familiarity.

Building on what was found by Vivek, Beatty, and Morgan (2012) regarding affective brand commitment, or on Shankar (2018) about artificial intelligence, the evidence found in the present study's statistical analysis, contributes with new information on these matters, and paves the way for further innovation-driven research on AI devices' application. Through this research, the following managerial implications can be derived, which might help guiding the development and adoption of future AI devices:

- *Engage the customers in a positive and personalized experience:*

The more positive and personalized experience it is given to customers, the more emotionally connected to the experience they feel (Zorfas & Leemon, 2016). Customers need to feel understood, valued and connected, in order to have a meaningful commitment and higher loyalty towards brands (Meyer & Schwager, 2007). Whether it being through creating buyer personas, sharing smart content, remarketing or through geolocation, a personalized experience is the first step to generating brand love.

- *Understand who to target with voice assistants:*

Not everyone is comfortable enough to let a voice assistant enter their lives, whether it being as a personal assistant that guides them through the day, or as an entertainer, who only appears to keep people busy. Understanding the customers and their technology acceptance level is a key aspect to keep in mind, as when targeted to the wrong audience, it can perceive as having a disconnected interaction, because voice assistants as a channel provide less enriching information than other platforms. A wrong targeting can also reach data security concerns, which can be battled by marketing by addressing those data and privacy concerns as customers are wary of how the data is stored and what happens to it. Having a customer feel like a voice assistant is intruding his life is a step towards failure and loss of consumer trust and commitment (Alepis & Patsakis, 2017; McLean & Osei-Frimpong, 2019).

- *Affective brand commitment can be mostly about utility perception:*

Introducing an AI device is someone's life is much more than just referring to it as a new technology trend that looks good and is intelligent. It is of the upmost importance to demonstrate the device's utility in a way that the customer creates a commitment with it, that will hopefully lead to brand loyalty. It is important for companies to educate their customers on the abilities of the device and, most importantly, how it can be useful in a customer's specific reality. What is useful to some, might not be useful to others, making this personalization of utility for each individual very important.

In sum, and answering to the research question presented on chapter 1, to create relevant AI experiences, the technology can be used to improve and personalize the customers' experience, introducing suggestions that might be considered useful to the customers, while being less intruding and more entertaining. No matter the way or platform chosen, by joining positive feelings to the usefulness of this technology, an AI device can come as highly beneficial for both companies and its customers, as it is able to serve several benefits and to impact the customers' life.

7.3. Limitations and Future Research

One limitation originated from the study's short time window was the adopted research approach. Including a between-subjects approach to reach the minimum acceptable number of samples, a mixed approach was chosen to test the perception of the experience the respondents had been submitted to and how it had influenced their perception on the brand. Due to the COVID-19 pandemic, it was not possible to make the experience as interactive as initially planned, as the plan A was to create a live experience with each individual by having them use the voice assistant themselves and take their own conclusions about it. Thus, an experience had to be simulated and shared, which did not allow a personalized experience for each individual, influencing the results of the research. Therefore, future research studies should focus on conducting a full between-subjects experiment approach, to evaluate every variance in each experiment in a more specific way.

This research intended to clearly study how could brands enhance and improve their affective commitment relationship with customers through the usage of voice assistants, when moderated by brand familiarity. This variable proved not to have a significant impact, meaning it failed to identify a moderator or mediator of the relationship between brand experience and the usage of voice assistants, which would have been helpful to understand the proposed relationship. Thus, further research should focus more on finding out what can influence this

relationship, in order to intensify the willingness to use a voice assistant by creating the most efficient and effective experience possible.

Lastly, this research is mainly focused on the Portuguese context, which does not allow the expansion of the results to other countries, cultures and realities. There is still not a voice assistant culture in Portugal, as it is in a very early stage of adoption. Therefore, future research should focus on either expanding the study to different cultures and technology adoption stages regarding AI devices, or on educating Portuguese people on the practical implications of adopting such technological devices in their day-to-day activities and in their connection with brands.

CHAPTER 8

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CHAPTER 9

Annexes

Annex A: Script of Experiment #1

	Question	Answer
Interaction #1	Hey Google	Olá! Como posso ajudar?
	Como vai estar o tempo esta noite?	De acordo com o IPMA, o céu encontra-se com poucas nuvens e espera-se uma noite agradável.
	Ok, talvez vá jantar fora esta noite, depende do que tiver em casa.	Se precisares de ajuda diz! Tem um bom dia.
Interaction #2	Hey Google	Olá! Como posso ajudar?
	Não sei se irei jantar fora ou em casa. O que falta na minha despensa?	Tens um pouco de tudo, não te falta nada.
	Ok Google, envia-me então sugestões de receitas com os ingredientes que tenho.	Ok, vou enviar para o teu e-mail.
Interaction #3	Hey Google	Olá! Como posso ajudar?
	Obrigado pelas sugestões de receitas. Vou fazer uma lasanha. Podes-me enviar a melhor receita de lasanha que encontrares? Hoje quero esmerar-me.	Que belo pitéu, espero que estejas a contar comigo eheh. A melhor receita de lasanha é a do site The Stay At Home Chef. Queres tentar?
	Sim, quanto tempo demora a fazer e de que ingredientes preciso?	Demora cerca de 2h no total. Quanto aos ingredientes, enviei-te um e-mail com a lista dos que vais precisar e das suas quantidades. Boa sorte! Se precisares de mais alguma coisa estarei disponível para te ajudar.
	Ok Google, obrigado.	De nada.
Interaction #4	Hey Google	Olá! Como posso ajudar?
	A lasanha não ficou nada de especial: a receita parecia-me bem mas algo falhou. E é muito demorada.	Ok, lamento que a tua experiência na cozinha tenha sido insatisfatória. Irei eliminar a receita das sugestões. Confirmas?
	Não, podes deixar ficar. Quero tentar mais uma vez, o erro pode ter sido meu.	Ok, assim o farei. Obrigado!

Annex B: Script of Experiment #2

	Question	Answer
Interaction #1	Hey Google	Olá! Como posso ajudar?
	Como vai estar o tempo esta noite?	De acordo com o IPMA, o céu encontra-se com poucas nuvens e espera-se uma noite agradável.
	Ok, talvez vá jantar fora esta noite, depende do que tiver em casa.	Se precisares de ajuda diz! Tem um bom dia.
Interaction #2	Hey Google	Olá! Como posso ajudar?
	Não sei se irei jantar fora ou em casa. O que falta na minha despensa?	Foram adicionados os produtos que habitualmente compras. Prevê-se que seja entregue na próxima semana. Confirmas?
	Ok Google, sim confirmo.	-
Interaction #3	Hey Google	Olá! Como posso ajudar?
	Não me apetece nenhuma das sugestões que me enviaste para jantar e não havia carne picada no supermercado. Que outras sugestões me dás para comer esta noite?	Ok, vou anotar para que para a próxima te envie melhores sugestões. Podes sempre ir jantar fora e aproveitar o belo tempo que está esta noite.
	Que restaurante me sugeres? Não quero gastar muito dinheiro nem perder muito tempo.	Tens ao fundo da rua um restaurante italiano que, de acordo com o TripAdvisor, tem excelentes reviews e uma boa relação qualidade preço. As horas de maior confusão são entre as 21h e as 22h, por isso se fores agora consegues despachar-te rápido.
	Ok, vou lá então. Podes reservar-me uma mesa?	Sim, reservarei uma mesa para daqui a 15 minutos. Confirmas?
	Ok Google, sim confirmo. Obrigado!	De nada, estou sempre disponível para te ajudar!
Interaction #4	Hey Google	Olá! Como posso ajudar?
	Obrigado pelo restaurante que me recomendaste. A comida era excelente e o tempo de espera foi muito reduzido, estou muito satisfeito.	Obrigado eu por teres confiado na minha escolha! Desejas deixar uma review no TripAdvisor?
	Sim, quero dar 4 estrelas em 5 e deixar o seguinte comentário "A qualidade da comida é espetacular e o tempo de espera muito reduzido. Apenas mudaria a decoração um pouco antiquada do espaço."	Ok, assim o farei. Desejas adicionar mais alguma coisa à review?
	Sim, acrescenta que os melhores pontos foram o serviço e a comida.	Feito. O restaurante com certeza que agradece!
	Penso que sim. Obrigado Google.	De nada!

Annex C: Wix website (https://ambba0.wixsite.com/aiexperiment1)

AI EXPERIMENT

Início Realizar a Experiência Já realizei a experiência. E agora? Contacta-me

BEM-VINDO(A) À EXPERIÊNCIA!

Sê bem-vindo/a à experiência! Esta realiza-se no âmbito da minha tese de Mestrado em Marketing, no ISCTE-IUL, e inclui uma experiência de Inteligência Artificial através da utilização de um Assistente de Voz: o Google Assistant.

Vais assistir a quatro interações possíveis entre uma pessoa e um Google Assistant (assistente de voz), para que no final possas dirigir-te ao questionário, em https://iscteiul.co1.qualtrics.com/jfe/form/SV_1BWjSW2pdAeETqr e responder ao mesmo baseando-te na experiência que tiveste com as quatro interações abaixo. É importante que assistas por ordem!

Diverte-te ;)

Interação #1 Interação #2 Interação #3

JÁ REALIZEI A EXPERIÊNCIA. E AGORA?

Antes de mais, obrigado por teres concluído a experiência. Dirige-te agora a https://iscteiul.co1.qualtrics.com/jfe/form/SV_1BWjSW2pdAeETqr para que possas responder ao questionário e ajudar-me na realização do estudo!

CONTACTA-ME

Obrigado por teres realizado a experiência! Se desejas saber mais sobre o meu estudo ou queres fazer sugestões, entra em contacto comigo no formulário ao lado.

- Margarida Berrincha

Nome

Email

Assunto

Digite sua mensagem aqui...

Enviar

Annex D: Questionnaire

INSTITUTO UNIVERSITÁRIO DE LISBOA

Português

Bem vindo,

O presente questionário é realizado no âmbito da minha tese de Mestrado em Marketing no ISCTE-IUL, sendo que os dados obtidos no mesmo serão aplicados na minha investigação.

Dirige-te a https://ambba0.wixsite.com/aiexperiment2 para que possas assistir às quatro interações possíveis entre uma pessoa e um Google Assistant (assistente de voz), para que no final possas dirigir-te novamente ao questionário e responder ao mesmo baseando-te na experiência que tiveste com as quatro interações. É importante que assistas por ordem.

Desde já, obrigado pela colaboração!

- Margarida Berrincha

Avalia de 1 a 7 as informações abaixo, sendo 1 discordo totalmente e 7 concordo totalmente, tendo em conta a experiência que realizaste:

	1: Discordo Totalmente	2	3	4	5	6	7: Concordo Totalmente
A utilização do Google Assistant que observei no vídeo causa um forte impacto no meu sentido visual ou outros sentidos.	○	○	○	○	○	○	○
Eu acho o Google Assistant que observei no vídeo interessante numa perspetiva sensorial.	○	○	○	○	○	○	○
O Google Assistant que observei no vídeo não apela aos meus sentidos.	○	○	○	○	○	○	○
A utilização do Google Assistant que observei no vídeo induz sentimentos e sensações.	○	○	○	○	○	○	○
Não tenho sentimentos fortes pelo Google Assistant que observei no vídeo.	○	○	○	○	○	○	○
O Google Assistant que observei no vídeo é um assistente de voz sentimental.	○	○	○	○	○	○	○
Penso muito quando me deparo com o Google Assistant que observei no vídeo.	○	○	○	○	○	○	○
A utilização do Google Assistant que observei no vídeo não me obriga a pensar.	○	○	○	○	○	○	○
A utilização do Google Assistant que observei no vídeo estimula a minha curiosidade e resolução de problemas.	○	○	○	○	○	○	○

Avalia de 1 a 7 as informações abaixo, sendo 1 discordo totalmente e 7 concordo totalmente, tendo em conta a experiência que realizaste:

	1: Discordo Totalmente	2	3	4	5	6	7: Concordo Totalmente
De acordo com o vídeo que observei, planeio utilizar o Google Assistant no futuro.	○	○	○	○	○	○	○
De acordo com o vídeo que observei, pretendo utilizar o Google Assistant no futuro.	○	○	○	○	○	○	○
De acordo com o vídeo que observei, prevejo utilizar o Google Assistant no futuro.	○	○	○	○	○	○	○

Avalia de 1 a 10 as informações abaixo, sendo 1 discordo totalmente e 10 concordo totalmente, tendo em conta a experiência que realizaste:

	1: Discordo Totalmente	2	3	4	5	6	7	8	9	10: Concordo Totalmente
Teria gosto em ser cliente do Google Assistant que observei no vídeo.	○	○	○	○	○	○	○	○	○	○
O Google Assistant que observei no vídeo é o operador que toma melhor conta dos seus consumidores.	○	○	○	○	○	○	○	○	○	○
Existe uma sensação de reciprocidade na relação com o Google Assistant que observei no vídeo.	○	○	○	○	○	○	○	○	○	○
O Google Assistant que observei no vídeo nunca desilude.	○	○	○	○	○	○	○	○	○	○
Teria sentimentos de confiança perante o Google Assistant que observei no vídeo.	○	○	○	○	○	○	○	○	○	○

Avalia de 1 a 5 as informações abaixo, sendo 1 discordo totalmente e 5 concordo totalmente, tendo em conta a experiência que realizaste:

	1: Discordo Totalmente	2	3	4	5: Concordo Totalmente
O Google Assistant que observei no vídeo é maravilhoso.	○	○	○	○	○
O Google Assistant que observei no vídeo faz-me sentir bem.	○	○	○	○	○
O Google Assistant que observei no vídeo é totalmente impressionante.	○	○	○	○	○
Tenho sentimentos neutros sobre o Google Assistant que observei no vídeo.	○	○	○	○	○
O Google Assistant que observei no vídeo faz-me sentir feliz.	○	○	○	○	○
Eu adoro o Google Assistant que observei no vídeo.	○	○	○	○	○
Eu não tenho sentimentos particulares sobre o Google Assistant que observei no vídeo.	○	○	○	○	○
O Google Assistant que observei no vídeo é puro encanto.	○	○	○	○	○
Eu sou apaixonado pelo Google Assistant que observei no vídeo.	○	○	○	○	○
Eu seria muito apegado ao Google Assistant que observei no vídeo.	○	○	○	○	○

Avalia de 1 a 5 as informações abaixo, sendo 1 discordo totalmente e 5 concordo totalmente, tendo em conta a experiência que realizaste:

	1: Discordo Totalmente	2	3	4	5: Concordo Totalmente
Consideraria-me leal ao Google Assistant que observei no vídeo.	○	○	○	○	○
Utilizaria o Google Assistant que observei no vídeo sempre que pudesse.	○	○	○	○	○
Utilizaria o Google Assistant que observei no vídeo o máximo de vezes possível.	○	○	○	○	○
De acordo com o vídeo que observei, sinto que este seria o único Google Assistant que precisaria.	○	○	○	○	○
O Google Assistant que observei no vídeo seria o Assistente que iria preferir comprar.	○	○	○	○	○
Se o Google Assistant que observei no vídeo não estivesse disponível, seria difícil utilizar outro assistente.	○	○	○	○	○
Eu faria o possível e o impossível para utilizar o Google Assistant que observei no vídeo.	○	○	○	○	○

Após a realização da experiência, avalia de 1 a 5, sendo 1 discordo totalmente e 5 concordo totalmente, as informações abaixo, tendo em conta o Google Home:

	1: Discordo Totalmente	2	3	4	5: Concordo Totalmente
O Google Assistant que observei no vídeo transmite-me sensações de boa vontade.	◯	◯	◯	◯	◯
Estarei atento ao Google Assistant que observei no vídeo na web.	◯	◯	◯	◯	◯
O Google Assistant que observei no vídeo tem uma boa reputação.	◯	◯	◯	◯	◯
A navegação no Google Assistant que observei no vídeo faz-me sentir confortável.	◯	◯	◯	◯	◯

Género

- Masculino ◯
- Feminino ◯
- Prefiro não responder ◯

Faixa Etária

- Menos de 18 ◯
- 18-24 ◯
- 25-34 ◯
- 35-44 ◯
- 45-54 ◯
- 55-64 ◯
- 65-74 ◯
- 75 ou mais ◯

Grau de Escolaridade

- Ensino Básico ◯
- Ensino Secundário ◯
- Licenciatura (ou equivalente) ◯
- Pós-Graduação ◯
- Mestrado ◯
- Doutoramento ◯

Situação Profissional

- Estudante ◯
- Trabalhador-Estudante ◯
- Trabalhador ◯
- Desempregado ◯
- Reformado ◯

Tenho um Assistente de Voz:

- Sim ◯
- Não ◯

Annex E: Pre-Test Results

Table 8 - Reliability Test (pre-test)

Reliability Analysis		
Scale	Cronbach's Alpha	Items
Brand Experience	0.787	9
Usage of In-Home Voice Assistants	0.974	3
Affective Brand Commitment	0.922	5
Brand Love	0.908	10
Brand Loyalty	0.895	7
Brand Familiarity	0.892	4

Annex F: Sample Characterization Results

Table 9 - Age frequency

Age					
		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Below 18	9	3,6	3,6	3,6
	18-24	125	50,6	50,6	54,3
	25-34	63	25,5	25,5	79,8
	35-44	19	7,7	7,7	87,4
	45-54	21	8,5	8,5	96,0
	55-64	5	2,0	2,0	98,0
	65-74	4	1,6	1,6	99,6
	75+	1	0,4	0,4	100,0
	Total	247	100,0	100,0	

Table 10 - Education frequency

Education					
		Frequency	Percent	Valid Percent	Cumulative percent
Valid	9th grade	5	2,0	2,0	2,0
	High-School	29	11,7	11,7	13,8
	Bachelor Degree	141	57,1	57,1	70,9
	Postgraduate Degree	25	10,1	10,1	81,0
	Master Degree	43	17,4	17,4	98,4
	Doctoral Degree	4	1,6	1,6	100,0
	Total	247	100,0	100,0	

Table 11 - Gender frequency

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	91	36,8	36,8	36,8
	Female	155	62,8	62,8	99,6
	Prefer not to say	1	0,4	0,4	100,00
	Total	247	100,0	100,0	

Table 12 – Having a voice assistant frequency

Has a Voice Assistant					
		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Yes	125	50,6	50,6	50,6
	No	122	49,4	49,4	100,0
	Total	247	100,0		

Table 13 – Occupation frequency

Occupation					
		Frequency	Percent	Valid Percent	Cumulative percent
Valid	Student	99	40,1	40,1	40,1
	Student-Worker	74	30,0	30,0	70,0
	Employed	54	21,9	21,9	91,9
	Unemployed	13	5,3	5,3	97,2
	Retired	7	2,8	2,8	100,0
	Total	247	100,0	100,0	

Annex G: PLS-Algorithm Results

Table 14 - Model Fit (without 2nd order construct)

	Saturated Model	Estimated Model
SRMR	0,064	0,064
Chi-Square	501,247	734,546
NFI	0.743	0.743

Table 15 - Model Fit (with 2nd order construct)

	Saturated Model	Estimated Model
SRMR	0,066	0,076
Chi-Square	564,72	633,65
NFI	0.784	0.761

Table 16 - Multicollinearity Statistics (Outer VIF values)

	VIF
ABC1	2.033
ABC2	2.164
ABC3	2.205
ABC4	1.968
ABC5	2.305
Affective Experience	2.024
Intellectual Experience	1.692
Sensory Experience	1.516
BFA1	1.473
BFA2	1.546
BFA3	1.594
BFA4	1.596
BLO1	2.415
BLO2	2.624
BLO3	2.527
BLO4	2.035
BLO5	2.727
BLO6	2.993
BLO7	2.433
BLO8	2.847
BLOY1	2.721
BLOY2	3.414
BLOY3	3.792
BLOY4	2.922
BLOY5	3.031
BLOY6	2.005
UVC1	4.285
UVC2	7.776
UVC3	5.794

Table 17 - Multicollinearity Statistics (Inner VIF Values)

	ABC	BE	BFA	BLO	BLOY	UVC
ABC					1.954	
BE						1.512
BFA						1.078
BLO	1.000				1.954	
BLOY						
UVC				1.000		

Annex H: Bootstrapping Results

Table 18 - Outer Loadings and P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
ABC1	0.787	0.784	0.029	27.020	0.000
ABC2	0.812	0.810	0.025	31.851	0.000
ABC3	0.816	0.815	0.030	27.378	0.000
ABC4	0.766	0.767	0.036	21.537	0.000
ABC5	0.840	0.841	0.020	41.671	0.000
Affective Experience	0.880	0.879	0.018	49.495	0.000
Intellectual Experience	0.842	0.843	0.029	29.245	0.000
Sensory Experience	0.786	0.787	0.037	21.389	0.000
BLO1	0.796	0.798	0.027	29.810	0.000
BLO2	0.786	0.786	0.026	29.897	0.000
BLO3	0.811	0.812	0.024	34.345	0.000
BLO4	0.768	0.768	0.034	22.692	0.000
BLO5	0.827	0.827	0.026	31.491	0.000
BLO6	0.859	0.860	0.021	41.863	0.000
BLO7	0.803	0.802	0.038	20.897	0.000
BLO8	0.807	0.808	0.021	37.818	0.000
BLOY1	0.854	0.854	0.019	46.087	0.000
BLOY2	0.858	0.858	0.018	46.453	0.000
BLOY3	0.884	0.883	0.017	52.424	0.000
BLOY4	0.832	0.833	0.025	33.072	0.000
BLOY5	0.837	0.838	0.025	33.245	0.000
BLOY6	0.781	0.781	0.030	26.011	0.000
UVC1	0.940	0.940	0.010	94.527	0.000
UVC2	0.971	0.972	0.004	216.623	0.000
UVC3	0.953	0.954	0.008	123.051	0.000
BFA1	0.733	0.726	0.049	14.975	0.000
BFA2	0.808	0.809	0.025	32.226	0.000
BFA3	0.783	0.780	0.039	20.306	0.000
BFA4	0.796	0.797	0.033	24.487	0.000

Table 19 - Path Coefficients and P-Values

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Affective Brand Commitment -> Brand Loyalty	0.252	0.255	0.052	4.869	0.000
Brand Experience -> Usage of Voice Assistants	0.240	0.236	0.079	3.042	0.002
Brand Experience -> Brand Familiarity -> Usage of Voice Assistants	0.030	0.025	0.031	0.962	0.357
Brand Love -> Affective Brand Commitment	0.699	0.702	0.037	18.777	0.000
Brand Love -> Brand Loyalty	0.661	0.658	0.050	13.267	0.000
Usage of Voice Assistants -> Brand Love	0.616	0.620	0.054	11.398	0.000